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INFLUENCE OF VARIOUS GROWTH REGULATORS AND CACL2 ON YIELD AND QUALITY IN STRAWBERRY CV. CHANDLER

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Abstract: The present investigation entitled Influence of various growth regulators and $CaCl_2$ on yield and quality in strawberry cv. Chandler was conducted in the Department of Horticulture, Khalsa College, Amritsar during 2016-2017. The runners of strawberry cv. Chandler were planted in the second fortnight of October with a spacing of 45x30 cm. The investigation was laid out in RBD with ten treatment combinations (GA_3 - 50, 75 and 100 ppm; NAA- 10,20 and 30 ppm; $CaCl_2$ -0.25 , 0.50 and 0.75 % and control) replicated thrice. Results of the study revealed that the application of growth regulators increased the yield parameters and improved the quality of strawberry. The maximum number of fruits (21.33), fruit set per cent (83.47) and fruit yield (344.11 g/plant) were recorded in the treatment T_3 (GA_3 100 ppm) respectively. Results also showed that T_6 treatment (NAA 30 ppm) was the remarkable treatment for physico-chemical properties of fruits with maximum fruit length (3.50 cm), fruit breadth (2.94 cm), TSS (7.76 °Brix), reducing sugars (4.61%) and total sugars (7.41%) respectively. Fruits also showed maximum weight (16.12 g), TSS: acid ratio (11.56), ascorbic acid content (63.71 mg/ 100g) and minimum acidity (0.54%) when the plants were treated with GA3 100 ppm.
Key Words: Gibberellic acid, Naphthalene acetic acid, 0Brix and Calcium chloride.

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INTRODUCTION

Strawberry (Fragaria x ananassa Duch.) belongs to family Rosaceae is a non-climacteric fruit which develops by simultaneous ripening of the number of separate berries of a single flower, adhering as the common unit on the common receptacle botanically called as "etaerio of achene" (Khunte et al 2014). The name "strawberry" may have derived from the practice of

using straw mulch for cultivation or it may have come from the Anglo-Saxon word "strew", meaning to spread (Kaur 2010). Cultivated strawberry is a dicotyledonous, perennial and low growing herb grown in most arable regions of the world. In India, a few plants of strawberry were brought in the early sixties by NBPGR Regional Station, Shimla, from where it is spread to the other states. Strawberry fruits are very popular among berries and are reported to have anti-oxidant, anti-cancer, anti-inflammatory and anti-neurodegenerative biological properties. These properties are mainly attributed to high fruit polyphenolic content, especially anthocyanins -the type of polyphenols quantitatively most important in strawberry fruits - as well as flavonoids, phenolic acids and vitamin C. The ellagic acid present in strawberry have cancer fighting properties (Xue et al 2001;Meyers et al 2003). The fresh strawberries are deep red in colour and is a profitable fruit crop in the shortest possible time as compared to the other fruits (Kumar et al 2012). This have traditionally been a popular delicious fruit for its flavour, taste, fresh use, freezing and processing. Strawberry gives quick and very high returns per unit area on the capital investment, as the crop is ready for harvest within 6 months of planting. Application of growth regulators has been practiced commercially to increase the production and quality of strawberry crop. They have been proved to be quite vital in enhancing fruit maturity, yield and fruit quality. Application of growth regulators has been practiced commercially to increase the production and quality of strawberry crop. They have been proved to be quite vital in enhancing fruit maturity, yield and fruit quality. Growth regulator treated fruits showed high contents of reducing sugars, amino acids and ascorbic acid (Mikhtelva and Petrovskya 1974). Gibberellic acid (GA3) stimulates the effect of long day lengths in short day plants by improving vegetative development and increasing runner production. It initiates early flowering and thus early fruit development (Kasim et al 2007; Paroussi et al 2002; Sharma and Singh 2009). The fruit set in strawberry can be improved with the foliar application of NAA at flower initiation stage. The application of NAA to emasculated flowers resulted in Parthenocarpic development of fruit and it also delayed ripening and anthocyanin accumulation of strawberry fruits (Villarreal et al 2009). Calcium chloride increases the leaf area index, average fruit weight and size of strawberry fruits (Dunn and Able 2006; Ramezanian et al 2009). Information is available on standardization on the use of growth regulators and protected conditions for successful strawberry cultivation under sub-tropical conditions of Punjab.

MATERIALS AND METHODS

The present study entitled "Influence of various growth regulators and $CaCl_2$ on the vegetative growth and yield in strawberry cv. Chandler" was conducted in the nursery of Horticulture Department, Khalsa College, Amritsar during 2015 Amritsar represents the climatic conditions prevailing in the sub tropical humid zone of Punjab state. It receives an annual rainfall of 735 mm, the major portion of which falls from July to September. During winter, frost is of common occurrence while in summer, the atmospheric temperature occasionally reaches upto 480 C. The soil of experimental field was sandy loam in texture. The runners of strawberry were procured from the Bhangu strawberry farm, village Sahmana as bases of plant material. The runners were transplanted in well prepared raised beds each measuring 2 m x 1 m in size. The transplanting was done during second fortnight of October at a planting distance of 45 x 30 cm. Uniform dose of FYM @ 50 t /ha was applied to all plots before field bed preparations. The growth regulators were applied at fruit set and $CaCl_2$ was applied before harvest. There were ten treatments GA_3 (50 ppm, 75 ppm and 100 ppm), NAA (10 ppm, 20 ppm and 30 ppm) and $CaCl_2$ (0.25 %, 0.50 % and 0.75 %). In control the plants were sprayed with plain water. The treatments were replicated thrice. Data was analysed by RBD (Randomised Block Design). The various observations regarding plant height, leaf parameters, flower and fruit parameters were recorded. Observations were statistically analysed by Randomized Block Design.

RESULTS AND DISCUSSION

Number of flowers per plant

The maximum number of flowers per plant 25.56 was observed in plants treated with GA_3 100 ppm. Present results are in agreement with the findings of many researchers who revealed that gibberellic acid increased number of flowering truss and flowers in strawberry plant (Paroussi et al 2002). Similar results have been favoured by Kaur (2010), Haider et al (2012) and Uddin et al (2012) in strawberry. They observed that application of Gibberellic acid in strawberry produced maximum number of inflorescence per plant, number of flower per plant and number of flowers per inflorescence. The more number of flowers per plant and earliness in flowering were probably because of hormone application which accelerated the development of differentiated inflorescence and stimulated flowering. The research work of Thakur et al (1991),Gupta and Acharya (1993), Kumar et al (1996), Khokhar et al (2004), Singh et al (2005) and Ali and Gaur (2007) in strawberry supported the present findings. According to Prasad et al (2015) maximum number of

flowers from GA3 treatments was due to the fact that such treatments being rich in nutrients induced good vegetative growth and flower bunch hence initiated higher number of flowers. The plants treated with NAA (10, 20 and 30 ppm) registered 17.85, 19.89 and 21.27 flowers per plant. This might be due to the more number of flowering buds as the stimulus (florigen) converted vegetative bud to fruiting bud by the help of exogenously applied NAA. The results are similar with those of Thakur et al (1991).$CaCl_2$ (0.25 %, 0.50 % and 0.75 %) produced 16.84, 18.89 and 20.25 flowers which were more than control with 16.75 flowers respectively.

Number of fruits per plants

Results of the present study showed that maximum number of fruits per plant (21.33) were observed in plants treated with GA_3 100 ppm and it was followed by treatment T_2 (GA_3 75 ppm) with 20.34 number of fruits which were significant from all other treatments. Both of these treatments were at par with each other. Lowest number of fruits (12.08) were observed under control. Gibberellic acid showed higher number of fruits per plant when applied alone on strawberry plants, as compared to others. Same results have been shown by Kaur (2010) and Qureshi et al (2013). It is in conformation with the research work of Dhillon (2005) who also reported enhanced fruit set with GA_3 treatments. Tehranifer et al (1997) reported maximum berry setting with GA_3 50 ppm in strawberry cv. Chandler. Application of 75 ppm GA_3 provided maximum number of fruit in strawberry (Uddin et al 2012). Number of flowers were more in NAA treated plants due to more numbers of flowering stock which arised from those plants as the stimulus (florigen) converted vegetative buds to fruiting buds by the help of exogenously applied NAA. The results are similar with Thakur et al (1991).

Fruit set per cent

The data pertaining to fruit set per cent as influenced by growth regulators and CaCl2 revealed that the maximum fruit set (83.47 %) were recorded in T3 treatment. Minimum fruit set (72.17 %) was observed under control. The increased fruit set percent in treatments receiving GA3 application might be due to GA3 caused the production of large number of flowers with rapid elongation of peduncle, leading to full development of flower buds having all reproductive parts functional which increased the fruit set and number of berries per plant. It could also be due to the fact that GA3 application accelerated the development of differentiated inflorescence. (Paroussi et al 2002; Saima et al 2014). This might be related to the important role of auxins on fruiting of strawberry. Auxins in the pollen ensured that a rapid burst ovary growth accompanied by abscission of the stamens, petals usually followed

after pollination. Auxins increased the fruit set in fruits containing many ovules (Chesworth et al 1998). GA3 treated fruits showed more fruit set percentage than any other treatments. The present study is in accordance to that depicted by others scientists. Sharma and Singh (2009) and Kappel and McDonald (2007). Prasad et al (2015) in their research trial concluded that the application of GA_3 increased the fruiting in strawberry. This was due to the fact that maximum number of flowers from GA^3 treatments being rich in nutrients induced good vegetative growth and flower bunch hence initiated higher number of flowers per cent berry set. It could also be attributed to the improvement in the water retention in the medium, better uptake of nutrients and water, which might be increased by photosynthetic rate causing maximum berry production. Number of flowers were reported to a more in NAA treated plant due to more numbers of flowering stock arises from those plants as the stimulus (florigen) converted vegetative buds to fruiting buds by the help of exogenously applied NAA. The results are similar with Thakur et al (1991). The fruit set percentage also increased with the application of calcium chloride treatments which was in the range of 75.48 % to 76.43 %.

Yield

It was noted that GA_3 100ppm registered maximum fruit yield (324.85 gm/plant). Minimum fruit yield (118.37 gm/plant) was recorded in control. The higher yield might be due to the increased flowering and more fruit set with higher fruit weight (Muneshwar et al 2012). Saima et al (2014) reported that the higher yield might be due to the formation of more metabolites by large leaves in plants resulting in bumper flowering, fruit setting besides better vegetative growth. The application of GA_3 100ppm recorded maximum yield, closely followed by GA_3 50 ppm. These results are in confirmation with the findings of Zakhorova 1979; Singh and Phogat 1983 the same in strawberry. GA_3 100 ppm had a pronounced effect on the yield of strawberry crop. The increase in fruit yield possibly be due to the increased percentage of achene formation, setting higher number of fruits per plant, berry size and weight. The results of the present studies have been coroborated by the findings of Kalie et al (1980) and Rana (2001) who confirmed the findings of the present study. NAA treated plants registered more number of flowers due to more numbers of flowering stock which arised from those plants as the stimulus (florigen) converted vegetative bud to fruiting bud by the help of exogenously applied NAA. The results are similar with Thakur et al (1991) in strawberry.

Table 1: Effect of various growth regulators and $CaCl_2$ on flowering, fruiting and yield parameters in strawberry cv. Chandler

Treatments	Number of flowers per plant	Number of fruits per plant	Fruit set per cent	Yield (gm/plant)
T_1-GA_3 50ppm	23.64	19.47	82.32	230.01
T_2-GA_3 75ppm	24.60	20.34	82.68	269.31
T_3–GA_3 100ppm	25.56	21.33	83.47	344.11
T_4 –NAA 10ppm	17.85	13.69	76.65	175.24
T_5-NAA 20ppm	19.89	15.71	78.97	216.44
T_6-NAA 30ppm	21.27	16.83	79.15	232.33
T_7-$CaCl_2$ 0.25%	16.84	12.71	75.48	143.41
T_8-$CaCl_2$ 0.50%	18.89	14.89	78.84	173.48
T_9-$CaCl_2$ 0.75%	20.25	15.48	76.43	193.16
T_{10}-Control	16.75	12.08	72.17	128.95
CD (5%)	**0.48**	**0.63**	**2.69**	**15.65**

Total soluble solids

The data on the total soluble solids of fruits showed that the maximum TSS i.e. 7.76 per cent were found in the fruits produced by plants treated with NAA 30 ppm minimum TSS (6.16 %) was found under untreated plants. Results of these findings are confirmed by Kumar et al (2011) and Kumar et al (2012). They observed positive effect of NAA on TSS of strawberry fruits. This might be due to treatment effect on physiological accumulation of sugar and change in metabolism which eventually resulted in more retention of TSS (Khunte et al 2014). Abolfazl et al (2013) reported that the TSS was decreased as GA_3 concentration increased. The role of GA_3 on increasing TA was more important than that of TSS. From the data, it was observed that the plants treated with GA_3 produced fruits with higher TSS than control. The increase in TSS might be due to the conversion of starch and other polysaccharides. The results showed conformity with the findings of Bhautkar (1994) and Rana (2001) who also reported the maximum TSS with GA_3 100 ppm in cv. Chandler which is in line with the present findings. Higher TSS was detected in the fruits from the calcium chloride treatments than control. Calcium chloride treated strawberry demonstrated an increase in TSS thus finding is in accordance with the work of Dunn and Able (2006) who found an increase in TSS percentage with lower calcium doses. These results could be ascribed to increasing soluble matter in the juice by penetrated calcium chloride (Kadir 2004).

Acidity

The data on acidity level of fruits showed that the minimum acidity (0.54 %) was found in the fruits produced by plants under treatment T_1 whish was found significant. Maximum acidity was found under control. Data revealed that GA_3

significantly affected fruit juice acidity with the lowest value (0.54 %) while the highest acidity (0.84 %) was recorded in control plants. These findings are in conformity with Singh and Singh (1979) in strawberry. Increase in titratable acidity by GA_3 was due to the consumption of sugar in the form of energy to enhance the vegetative growth. The data given in table are clearly indicative of the fact that with the increase in concentration of growth regulators there is increase in acidity in strawberry plants. Abolfazl et al (2013) reported that the TSS was decreased as GA3 concentration increased in strawberry fruits. GA3 played a role in increasing titratable acidity. Calcium application decreased the acid content which ascribed an increase in TSS and ultimately reduced the acidity of fruit. Similar results were reported by Ahlawat et al (1985) in grapes.

TSS: acid ratio

The data relating to TSS: acid ratio as affected by GA3 and NAA are given in Table 4.5. From the data, it is clear that maximum TSS: acid found under treatment T1 GA3 50 ppm which was found to be significantly higher than all other treatments. Minimum TSS: acid ratio (7.34) was found under control treatment.

Reducing sugars

Results of the study showed that the plants with treatment T6 yielded fruits with maximum reducing sugars 4.61 per cent while minimum reducing sugars 3.45 per cent was observed in control. Results of these findings are confirmed by Kumar et al (2011) and Kumar et al(2012). They observed positive effect of NAA on TSS of strawberry fruits. The increase in reducing sugars with the application of NAA might be due to treatment effect on physiological accumulation of sugar and change in metabolism which eventually resulted in more retention of TSS. By the activity of invertase enzyme, which break down sucrose into fructose and glucose, hence resulting in increased reducing sugars (Khunte et al 2012).The plants treated with GA3 100 ppm recorded higher reducing sugars than control. The increase in reducing sugars with the application of GA3 might be due to the fact that GA3 was responsible for the synthesis of enzyme ?-amylase, which converted starch into sugars. The various concentrations of calcium chloride also resulted in maximum reducing sugars than control.

Total sugars

The data regarding total sugars depicted that they increased rapidly with increasing dose of Naphthalene acetic acid. It was noted that plants of T6 treatment yielded fruits with maximum total sugars as 7.41 per cent. Controlled conditions registered minimum total sugars as 5.86 per cent which was followed by treatment T7 with total sugars 6.11 per cent. Both these treatments were found to be at par with each other. This might be due to the treatment

effect on physiological accumulation of sugars and change in metabolism which eventually resulted in more retention of TSS and Total sugars. Results of these findings are confirmed by Kumar et al 2011 and Kumar et al 2012. The plants treated with GA3 produced fruits with high total sugar content than control (Khunte et al 2014). The enhancement in sugars of strawberry plants with growth regulators might be due to the fact that it checked vegetative growth, which in turn readily made available more carbohydrates to the developing berries and ultimately improved their sugar content. Evidently, the increase in sugars might be due to the conversion of starch and other polysaccharides into soluble sugars. These results are in line with the findings of Rana (2001) in strawberry cv. Chandler under sub-tropical conditions of Punjab .

Table 2 : Effect of various growth regulators and CaCl2 on flowering, fruiting and yield parameters on biochemical characters in strawberry cv. Chandler

Treatments	TSS (^{0}Brix)	Acidity (%)	TSS: acid (%)
T_1-GA_3 50ppm	6.31	0.54	11.56
T_2-GA_3 75ppm	6.27	0.62	10.09
T_3-$GA_3$100ppm	6.78	0.68	10.00
T_4-NAA 10ppm	7.53	0.72	10.44
T_5-NAA 20ppm	7.55	0.73	10.26
T_6-NAA 30ppm	7.76	0.76	10.23
T_7-$CaCl_2$0.25%	7.20	0.77	9.35
T_8-$CaCl_2$0.50%	6.83	0.79	8.61
T_9-$CaCl_2$0.75%	7.42	0.82	8.99
T_{10}- Control	6.16	0.84	7.34
CD (5%)	**0.44**	**0.04**	**0.97**

Ascorbic acid

Maximum ascorbic acid content (63.71 mg/100gm pulp)was found in fruits produced by plants of T3 treatment which proved to be significantly higher than all other treatments. It was followed by plants treated with T2 with 62.03 mg/ 100gm pulp ascorbic acid content. Plants under control treatment (T10) with minimum ascorbic acid content 57.50 mg/100gm pulp and both of these treatments were found to be at par with each other. Results of these findings are confirmed by Thakur et al (1991) who reported that GA3 application increased the ascorbic acid content but TSS decreased slightly in strawberry. This was due to the positive influence on the reproductive growth as evidenced by more TSS and juice per cent in fruits of auxin treated trees in comparison with control and other growth regulators. Similar findings are also reported by Singh and Phogat (1983); Kumar et al (2011) and Khunte et al (2014) in

strawberry fruits. While, Galactose is a precursor for ascorbic acid, it might be assumed that the increase in its level may be because of the conversion of the sugars. Increase in ascorbic acid content in strawberry by the application of various growth regulators has also been reported by Mikhteleva and Petrovskya (1974), Singh and Phogat (1983) and Dhillon (2005) in strawberry cv. Chandler. The plants treated by various concentrations of calcium chloride also showed higher ascorbic acid content than control. This might be due to the reason that calcium has promotory influence on vitamin C content (Kadir 2004). The concentration of calcium chloride delayed the rapid oxidation of ascorbic acid. Our findings are similar to that of Ramezanian et al (2009) who found high ascorbic acid in treated pomegranate plants. The reason for high ascorbic acid in calcium treated fruits might be due to the reason that metabolic activities were not fast as in untreated fruits. Therefore in untreated fruits the respiration rate and ethylene production were at higher rate due to which ascorbic acid constantly decreased rapidly as compared to calcium treated fruits.

Table 3: Effect of various growth regulators and CaCl2 on flowering , fruiting and yield parameters on sugars and ascorbic acid in strawberry cv. Chandler

Treatments	Reducing sugars (%)	Total sugars (%)	Ascorbic acid (mg/100gm)
T_1-GA_3 50ppm	4.11	6.86	60.13
T_2-GA_3 75ppm	4.12	6.93	62.03
T_3-$GA_3$100ppm	4.17	7.05	63.71
T_4-NAA 10ppm	4.48	7.10	57.82
T_5-NAA 20ppm	4.59	7.37	58.32
T_6-NAA 30ppm	4.61	7.41	59.26
T_7-$CaCl_2$0.25%	4.22	6.11	59.72
T_8-$CaCl_2$0.50%	4.30	6.21	59.56
T_9-$CaCl_2$0.75%	4.48	6.21	60.10
T_{10}- Control	3.45	5.86	57.50
CD (5%)	**0.42**	**0.32**	**0.63**

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DISTRIBUTION OF BUDDHISM AND MANICHAEISM IN SOGHD

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Abstract: On this article was investigated information of written sources and archeological materials in last years on distribution of Buddhism and Mahicheism in Sogd. Data of Chinese sources, wall painting, small plastics, which found in the territory of Bukhara, Samarkand and Southern Sogd are involved and analyzed. It is actively used articles and monographic researches connected with the given problem, including publications which have been published recently. On the basis of available archeological and written sources and the rests of material of culture is done conclusion, that available materials are not enough to judge about degree of distribution of Buddhism and Mancheism in Sogd. Probably, there were not monumental temples here but constructions made by clay and even from felt as brotherhood did not require any special household convenience. Similar is noted, for example, in Altai mountain.

Key words: Sogd, Sogdian, Buddhism, Buddha, China, India, Sogdian preachers, Sogdian iconography, small plastic, pakhsa-clay wall.

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It is known that Soghd (Soghdiana) from very ancient times has played a role of the hub for various cultures, religions and ideologies, which met, competed and inter-influenced here.

Especially, towards the Antiquity Period these processes were enforced and radicalized. Perhaps this was the reason why G.A.Pugachenkova has called this period as "Hellenized" (Pugachenkova1979, 47). Buddhism started penetrating to Central Asia in the second century BC. Establishment of the Kushan Empire has played a progressive role in development and distribution of Buddhism, because the Kushan

rulers themselves converted into Buddhism and paid attention to its distribution.

Starting from the first century BCthe religious ideologies of the Antiquity Period faced crisis and Buddhism became the dominant religion in Central Asia including Soghd (Bongard-Levin, Karpyuk1982, 44-45).

This new religion in its turn has gained its position in Soghd and Samarkand (Afrasiab), which was its political and economic center. That is the Soghdians as well as other people of Central Asia have played an important role in distribution of Buddhism in China and Far East (Litvinsky, Zeymal1971, 130; Bailey, 1971). In particular, the Chinese written sources (second century AD) inform that the Soghdian monks KanMensian and KanTsuy were Buddhist missionaries. In the sources belonging to later period there is information about the Soghdian interpreters who translated the Buddhist textsfrom Hindu to Chinese (Rtveladze1998, 21-22). These interpreters have also translated those texts into Soghdian. This certifies that Buddhism was widely spread in Soghd. This is also supported by the fact that the Chinese chronicles Sui and Wei inform that the Soghd people practice Buddhism (Bichurin1950.272,281).

Using written and archaeological sources we can observe that Buddhism had strong position in Soghd during the 1-5the centuries AD. However, it had lost its position with the arrival of Hephtalites and distribution of other religions, especially the Manichaeism (Belenitsky1954, 39). Particularly, by the 8th century AD there was only one Buddhist monastery with one monk in Samarkand (Belenitsky1954, 123; Compareti2008). This idea was proposed by V.Livshits, who studied the Mugh documents, according to whom Buddhism was almost lost by this period in Samarkand Soghd (Livshits1962, 165-166).

However, according to numismatic data, some coins carried names close to Buddhist etymology (Belenitsky1959, 50-51); this certifies that prior to the Arab invasion Buddhism kept its certain position among the ordinary and high-ranked people. This is clearly seen in the coins found in Ustrushana. In particular, the coins provide not just the names of the rulers (Afshins) but also the iconography borrowed from India (Smirnova1981, 32-33).

According to V.V. Bartold, Buddhism has kept its influence in Soghd during the later periods. Particularly, he relates the name of the village Sanjarfagan in the south-east of Samarkand with the name of the Buddhist monastery Sangharama (Bartold1963, 215-216).

The place of Buddhism in Soghdis also reflected in the archaeological materials gained during excavations. In particular, the remains of the building on the border between

Soghd and Ustrushana were evaluated as the Buddhist monastery, and according to the bronze mirror and the lion figurine found herethe complex was dated to the 1-2ndcenturied AD (Albaum1955, 57-60). This temple is considered the only one found on the territory of Soghd.

One can observe that from the 5-6th centuries AD the Soghdianscontinuously developed the local iconography. They used various traditions but 'adjusted' them to their own needs (Marshak1987, 237). This is clearly seen in the usage of the Indian pantheon.

The archaeological works in the Palace of Nasr ibn Sayyar located in the north of the Afrasiab Settlement have resulted in finding of a ceramic placket with the image of Kirtmukha dated to the second half of the 8th century AD. This lion-shaped image was borrowed from Indian iconography and was spread in Central Asia starting from the Kushan Period (Marshak1971, 59). The image of Kirtmukha, placed on ossuaries or other types of pottery besides Afrasiab, was also found in Penjikent and Tali-Barzu sites (Monchadksaya1960, 125-127; Meshkeris1989, 302; Belenitsky1959, 52).

The excavations by the Joint Uzbek-French Archaeological Mission in the area close to the citadel of Afrasiab have resulted in finding of an ivory in shape of wrest, which is iconographically close to Buddhist art[1]. The image of wrest is still widely used in the people's theatre Kathali, which pays attention to mimics. According to this theatre there are twenty four positions for fingers, which can produce several hundreds of positions with meanings. Wrest is the fourth position and is namedmusti(Babkina, Potabenko1964, 100-103).

The influence of Buddhism is also seen in fine arts. Although many researchers state that the Soghdian monumental art is unique (Litvinsky, Zeymal, 1971, 124;Shishkin1963, 205-208), A.M. Belenitsky proposes to apply to the Buddhist artistic tradition while studying the origins of the Soghdian fine arts (Belenitsky1964, 189).

There are many images related to India in the medieval Soghdian art and one of them is the image of elephant. Some researchers think that the image of elephant was directly borrowed from India (Ashrafi1984, 168). The elephant image is also used in the coins of the Ustrashana ruler satachari (meaning 'master', 'teacher') (Smirnova1981, 32-33).

As it was mentioned above, Buddhism lost its positions with the arrival of Manichaeism in the 5-6th centuries AD. Although the

1. This finding is currently located at the Institute of Archaeology, Uzbek Academy of Sciences. It is not dated since was found out of the cultural layers.

Manichaeism has arrived to Soghd after Buddhism, it has borrowed some Buddhist practices (Henning 1936, 5). In particular, the Manichaean monasteries were highly influenced by Buddhism.

The fact that the Soghdian ambassador, who visited the Chinese Emperor in the late 7th century AD, had a high rank in Manichaeism shows that Manichaeism played an important role in the socio-political life.

Although these religions co-existed for a long time it is difficult to evaluate their inter-influences, because there are no written or material evidence directly related to this issue. But the fact that the establisher of Manichaeism in Soghd Mar Ammo tried to influence the people by converting the high-ranked people to Manichaeism demonstrates that there was a competition between these religions.

According to orientalist V.B. Henning the main supporter of Manichaeism in Central Asia were Soghdians (Henning 1936, 13-14) and this is supported by the fact that the leader of Manichaeism has placed its castle in the early 8th century AD in Samarkand. Also one of the decrees of the Chinese Emperor published in the early 8 century AD states that 'the Maniach ideology is the local religion of the western Нирeople'. It is believed that the expression 'the Hu people' here corresponds not to the entire Central Asian population but only to Soghdians (Litvinsky, Zeymal, 1971, 121).There is still no material evidence of Manichaeism in Soghd. Perhaps, this was resulted by the fact that the monumental buildings were adobe-made or made of woolen fabrics; similar tradition is seen in the Mountainous Altay (Kyzlasov2004, 127-128).

In conclusion we can say that distribution of Buddhism and partially Manichaeism in the 1-8th centuries AD has resulted in intensification of cultural relations between people and the Soghdians played an important role in this process. Importantly, the Soghdians not just tolerated other religions but contributed to distribution of those religions (Buddhism, Manichaeism, and Christianity) to Eastern Turkestan, China and Far East.

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ASSESSMENT OF LIFT ABOVE POVERTY ORGANISATION (LAPO) SERVICES IN ALLEVIATING POVERTY AND PROMOTING ECONOMY DEVELOPMENT IN LAGOS STATE, NIGERIA.

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Abstract: This study investigates on how Lift Above Poverty Organisation (LAPO) has been able to render their services in alleviating poverty and promote economy development in both rural and urban communities, three (3) research questions and hypothesis was raised tested at 0.05 significance level. The population of study consists of all the members of the five (5) functioning LAPO branches, operating in five (5) rural communities, in Morogbo and Badagry, Two (2) branches were sampled and the sample size for this study was 100 respondents, r-value of 0.72 was obtained as the reliability and all data collected from the study were analyzed basically through inferential statistics (Chi- square) for testing the hypotheses.Result shows that majority of LAPO clients in the communities studied attested to accessing their services, while the depth in the outreach of such services was reasonably high, going by industrial standard. Key challenges of LAPO noted include the remoteness of the domains of clients and the associated high cost of reaching them, high interest on loan, irregularity of group meetings, smallness of loan size, and low savings mobilization amongst others. It was recommended among others that capacity-building activities of LAPO to the affiliated credit-groups should be upstaged through training, particularly on small business operations, regular monitoring and evaluation of their funded activities to ensure compliance to loan repayment.

Key words: LAPO branches,Nigeria, poverty, alleviation, development, empowerment.

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INTRODUCTION

The requirement of mankind for sufficient functioning in any society is "FUND". An individual who those not have sufficient fund to meet up with is basic of human survival including feeding, clothing and housing is considered to be in the category classified as poor. Small and medium financial institution which can be otherwise called Microfinance are organizations that ensures the active poor in the rural and urban areas improve their standard of living through coordinated economy activities microfinance that provide financial services to low income, poor and very poor self-employed people. These financial services according to (L?ger wood, 1999) generally include savings and credits but can also include financial services such insurance payment service.

Microfinance is the provision of financial service, such as loans, savings, insurance, and money transfer and payment facilities to low income groups. It could also be used for productive purpose such as investment, seeds or additional working capital for micro enterprises and individual. On the other hand, it could be used to provide immediate family expenditure such as food, education, housing and health. Microfinance is an active way for poor people to increase their economy security and thus reduce poverty. It enables poor people to manage their limited financial resources, reduce the impact of economy shock and increase their asset and income (Robinson, 2001).

Microfinance is no longer an experiment or a wish, it is proven success. It has worked successfully in many parts of the world Africa, Asia, Latin-America and North America. It is save and profitable; indeed it is the oldest and most resilient financial system in history. The key issues in microfinance include the realization that poor people needs a variety of financial services, including loans, savings, money transfer and insurance which microfinance provides. It is a power tool to fight poverty through building of asset and serving as an absorber against external ties and financial shocks. Microfinance involves building of financial sub-system which servers the poor and it architecture could be easily integrated into the financial system of the nation.

The other key issues of microfinance are the fact that it can pay for itself and should do so if it is to reach a large number of poor people. Microfinance is not limited to only micro-credit; it is inclusive of other financial services, such as micro-insurance, money transfer and saving. Furthermore, Donor fund are meant only the support and assist Microfinance institution not compete with them.

Omofonmwan and Odia (2009), emphasis that NGO's evolves from experience, interest and innate zeal to respond to societal needs. In same manner as the Lift Above Poverty

Organization (LAPO) evolved. In 1980, Nigeria experienced increased in speared intensity of poverty. In context the organization (Lift Above Poverty Organization) was founded as a nonprofit entity by Mr. Godwin Eligianusoe while working as rural cooperative officer in Delta State. Mr. Godwin filled with the vision and passion endorsed Lift Above Poverty Organization (LAPO) in 1987 and was formally incorporated as a nonprofit and non-governmental organization in 1993. Then Lift Above Poverty Organization (LAPO) as a microfinance focus on assisting the poor especially the woman in improving their socio economy status. It does not only act as a micro-credit institution but also assist clients in overcoming problem beyond lack of fund such as illiteracy any and environmental degradation.

STATEMENT OF THE PROBLEM

Effectively addressing the issues of poverty is a major challenge as a great percentage of the populace particularly in rural areas live in abject poverty. In a Central Bank (CBN) survey, only about 1.5million poor was reached by microfinance institution (NFI) out of about 140million Nigerians. (CBN2003). According to Anyanwu (2004), financial outreach is a major challenge of poverty alleviation. The outreached program is traced to paucity of fund to meet the ever increasing demand for micro credit. LAPO has involved itself in micro business management to enhance better utilization and efficient fund management through training and has provided opportunity for the poor to learn certain skill such as sewing, food processing, confectionary, soap making and a host of other income generating activities to alleviate poverty. (Jekayinfa 2010).

RESEARCH QUESTIONS

The major research questions in this research are:

I. To what extent is LAPO services assessed by the poor?

II. Is the interest rate on loan provided by LAPO ascertainable and favorable to the poor?

III. Has LAPO had any significant effect on improving the standard of living of the communities in Badagry?

HYPOTHESIS OF THE STUDY

To ensure that the aforementioned specific objectives carefully addressed, the understated hypothesis are tested.

Ho1: LAPO services are not significantly assessed by the rural poor in Badagry communities.

Ho2: There is no significant depth in the outreach of LAPO to the rural poor in Badagry communities.

Ho3: Has LAPO had any significant effect on improving the standard of living of the communities in Badagry.

METHODOLOGY

Research Design

This section covers the description of the type of survey adopted in the study. It is expected to define the population the sample size as well as the sampling technique adopted in selecting the sample size. Sources of data collection, data analysis and data presentation are part of research design. This research is designed to review and certify the services render by LAPO to small scale business and individual customers. The purpose is to access the role of such services in alleviating poverty and promoting economy development. Lagos state (Badagry&Morogbo) constitutes the scope of field survey. Questionnaire was administered in a survey conducted among the Lift Above Poverty Organization (LAPO) staff and their customers in Badagry and Morogbo Lagos State.

AREA OF THE STUDY

This study was conducted in Ibereko and Morogbo, Lagos state. The study groups are located at Badagry and Morogbo, Lagos state. Badagry (traditionally Gbagle) is a coastal town and local government area (LGA) in Lagos state, Nigeria. It is situated between the city of Lagos, and the border with Benin at Seme. As of the preliminary 2006 census results, the municipality had a population of 241,093. Badagry subsists largely on fishing and agriculture, and maintains a small museum of slavery. The town inhabits dwellers from all over the country doing different business in town. Some trade in clothing, food items, used cars from oversees and other imported goods. The town is just few kilometers from Seme borders to Republic of Benin and generates the highest Nigeria duties income till date.

POPULATION

Population refers to the total number of possible respondents for which the sample will be drawn from. The population of study consists of all the members of the five (5) functioning LAPO branches, operating in five (5) rural communities, in Morogbo and Badagry. Two (2) branches were sampled and they include those in Ibereko and Morogbo communities.

SAMPLING TECHNIQUE AND SAMPLE SIZE

The sampling technique used is purposive sampling technique, while the sample size for this study was 100 respondents. The respondents were actually a reasonable selection from the total population to make up a sample size. According to Osuala (1982) sampling techniques makes possible the conduct of relatively difficult studies by selecting representative units from the population so result can be used to draw inference about the total population.

RESEARCH INSTRUMENT

The research instrument was administered by the researcher at a group meeting of LAPO clients and as well to LAPO staff through the assistance of the branch managers. Section A is based on their bio data whereas Section B contains questions on the variables observed. The questionnaire scale adopted for the purpose of the study is the 4-point Likert scale, where all that is needed is for the respondents to tick their suitable options from Strongly Agreed (SA), Agree (A), Disagree (D), and Strongly Disagree (SD).

VALIDITY AND RELIABILITY TEST

The questionnaire was corrected and validated by 2 experts in department of vocational and technical education all from university of Benin, Benin City. The questionnaire was subjected to test-re-test method and r- value of 0.72 was obtained.

METHOD OF DATA COLLECTION

The ultimate aim of every research is to find solutions to identified problems of the subject of study. This can only be achieved through the collection of reliable data. Therefore, data were collected from both primary and secondary sources.

METHOD OF DATA ANALYSIS

All data collected from the study were analyzed basically through inferential statistics (Chi- square) for testing the hypotheses.

RESULT AND DISCUSSION

The analysis was based on the information collected using a structured questionnaire. The presentations of responses from the respondents were given in table and are also interpreted. A total of one hundred questionnaire were distributed of which were filled and used for the study. The data collected were analyzed based on each research question.

Table 1: Distribution of Gender

RESPONDENTS	NUMBER OF RESPONSE	PERCENTAGE
Male	25	25%
Female	75	75%
Total	**100**	**100%**

Table above shows that 25 respondents representing 25% were male while 75% respondents representing 75% were female. From the analysis above, the female form the majority of the respondents.

Table 2: Distribution of Educational Background

RESPONDENTS	NUMBER OF RESPONSE	PERCENTAGE
FSLC	35	35%
WAEC/GCE/NECO	45	45%
HND/B.sc	15	15%
M.sc/PhD	5	5%
Total	**100**	**100%**

The table above shows that respondents for FSLC were 35%, WAEC/GCE/NECO respondent were 45%, HND/B.sc respondents were 15%, while PhD respondents were 5%.

Table 3: Distribution of Occupation

RESPONDENTS	NUMBER OF RESPONSE	PERCENTAGE
Trader	60	60%
Farmer	10	10%
Artisan	15	15%
Civil Servant	5	5%
Retiree	10	10%
Total	**100**	**100%**

Table 3 indicates that 60% fell within the traders, 10 respondents representing 10%, were within the farmers. 15% fell within the artisan. Civil servant has a total responses of 5 and a percentage of 5%, and 10 respondent representing 10% fell within the retiree respectively.

Table 4: Distribution of Years Spent with LAPO

RESPONDENTS	NUMBER OF RESPONSE	PERCENTAGE
1-5	30	30%
6-10	40	40%
11-15	17	17%
16-20	10	10%
21-25	2	2%
26-30	1	1%
Total	**100**	**100%**

Table 4 indicates that 30% fell within the range of 1-5 years. 40 respondents representing 40%, were within the range of 6-10 years. 17% fell within the range of 11-15 years. 16-20 years has a total responses of 10 and a percentage of 10%, 2% fell within the range of 21-25 years and 1 respondent representing 1% fell within the range of 26-30 years respectively.

RQ 1: To what extent is LAPO services assessed by the poor?

S/N	*Statement*	*SA*	*A*	*D*	*SD*	*TOTAL*
1.	LAPO interest charges are too high for their services	30	30	20	20	100
2.	Should LAPO charge higher interest rate than main stream banks	10	20	20	50	100
3.	All loan collected by members are always collaterise	40	30	15	15	100
4.	Should LAPO attend to only the poor?	35	25	25	15	100
5.	In our opinion, do you customer of LAPO repay loan promptly	70	10	10	10	100
	Total	**185**	**115**	**90**	**110**	**500**

Where:

O = Observed Value
E = Expected Value
CX2 = Calculated Chi-Square Table
DF = Degree of Freedom

Rows = 5-1=4
Colums = 4-1=3
i.e Rows x Colums = 4x3=12
SA = Strongly Agree
A = Agree
D = Disagree
SD = Strongly Disagree

$$\text{Formula} = \frac{\text{Row Total x Colum Total}}{\text{Total Number}}$$

(This formula is applicable to all)

RQ1 Summary chi-square is presented below

RESPONSE	*TOTAL RESPONDED*	*DIFFERENCE*	*SIGN LEVEL*	*CALX2*	*TABX2*	*DECISION*
SA	240					
A	100					
D	55	12	0.05	116.6	28.3	*Rejected*
SD	75					
TOTAL	**500**					

DISCUSSION OF FINDINGS

Table above shows that five questions were analysis and the calculated valve of 11.6 were gotten and since the calculated valve is greater than the valve 28.3 therefore, the hypothesis was rejected. This implies that, LAPO services are easily accessed by the poor.

RQ 2: Is the interest rate on loan provided by LAPO ascertainable and favorable to the poor?

S/N	*Statement*	*SA*	*A*	*D*	*SD*	*TOTAL*
1.	The success of small and medium business lies in LAPO and not big banks	70	10	10	10	100
2.	Small and medium scale businesshave benefitted from LAPO in Morogbo-Badagry	80	10	10	5	100
3.	There is always an increase in your profit after you are given fund by LAPO	5	5	40	50	100
4.	LAPO promotes small and medium enterprises than other micro finance Banks	60	30	5	5	100
5.	LAPO provides other services such as money transfer ,savings etc	25	20	30	25	100
	Total	**240**	**75**	**90**	**95**	**500**

RQ2 Summary chi-square is presented below

RESPONSE	*TOTAL RESPONDED*	*DIFFERENCE*	*SIGN LEVEL*	*CALX2*	*TABX2*	*DECISION*
SA	185					
A	115					
D	90	12	0.05	99.4	28.3	*Rejected*
SD	110					
TOTAL	**500**					

DISCUSSION OF FINDINGS

In line with the above table, a total of five questions were asked and analyzed. The analysis expressed above confirmed it that calculated value is greater than the table value. Since the calculated value 99.4 is greater than the critical clue square value 28.3 at the significant level of 0.05. Therefore, the hypothesis is rejected. This implies that, the interest rates on loan provided by LAPO are favorable to the poor.

RQ 3: Has LAPO had any significant effect on improving the standard of living of the communities in Morgbo-Badagry?

S/N	*Statement*	*SA*	*A*	*D*	*SD*	*TOTAL*
1.	The introduction of LAPO in Morogbo-Badagry has reduces the poverty level in the community	70	20	5	5	100
2.	LAPO has improve the lives of the low-income group in Morogbo-Badagry	70	20	5	5	100
3.	Many LAPO members use loan collected to pay their children school fees	50	30	10	10	100
4.	LAPO is an indispensible tool for improving the standard of living of the people of Morogbo-Badagry community	30	20	20	30	100
5.	Other life improving programs are always organized by LAPO	20	20	15	45	100
	Total	**240**	**110**	**55**	**95**	**500**

RQ 3 Summary chi-square is presented below

RESPONSE	*TOTAL RESPONDED*	*DIFFERENCE*	*SIGN LEVEL*	*CALX2*	*TABX2*	*DECISION*
SA	240					
A	110					
D	55	12	0.05	115.9	28.3	*Rejected*
SD	95					
TOTAL	**500**					

DISCUSSION OF FINDINGS

In conjunction with the information gather from the table, five questions were asked which are related to the third hypothesis. The calculate chi-square is more than the critical value of chi-square. The calculated chi-square is 115.9 which are more than the table value of 28.3 since the calculated chi-square is more than the table value, therefore, the hypothesis is rejected. This implies that, LAPO has a significant effect on improving the standard of living of the community in Morogbo-Badagry.

CONCLUSION

The activities of LAPO are funded mainly through its mobilized savings from members, grants and loans from financial institutions, whereas it delivers its services through group contacts, educational fore and meetings. Majority of LAPO clients in the communities studied attested to accessing their services, while the depth in the outreach of such services was reasonably high, going by industrial standard. Key challenges of LAPO noted include the remoteness of the domains of clients and the associated high cost of reaching them high interest on loan. Irregularity of group meetings, smallness of loan size, and low savings mobilization amongst others.

RECOMMENDATION

In time with the outcome of the study the researches herewith recommends for the strengthening of LAPO guest to eradicating poverty the following:

– Capacity-building activities of LAPO to the affiliated credit-groups should be upstaged through training, particularly on small business operations, regular monitoring and evaluation of their funded activities to ensure compliance to loan repayment.

– The leverage gap between interest on savings and credit should be re-examined. Deduction from the study indicates complaints of low interest on savings as well as high interest on loans by client. A fair and accommodating balance through participating dialogue should be reached between LAPO and their clients.

– LAPO should re-assess the size of their loan in line with the progressive capacity of their client. Credit-users are better motivated with availability loans, so long as they are performing.

– Irregularity of group meetings shows signs of weak leadership and group organization. This challenge appeared evident in the study. LAPO should step-up the leadership development and organization of its credit-groups.

– Efforts should be made to strengthen communication between LAPO client and its host communities, to raise more awareness and access to the lendable programs of LAPO.

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ABOUT DEEP STRUCTURE OF THE SENTENCE

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Abstract: The notion of deep structure of the sentence in linguistics is mentioned in different ways. But our approach to the definition of the deep structure is differed from them. Our approach to the nation of deep structure of the sentence is based on revealing differential syntactic-semantic features of syntactical Units in the structure of the sentence.

The differential syntactic-semantic signs of lexical units in the structure of the sentence are substantiality, procceccuality and qualificativity which are considered as categorical signs, on the base of those categorical signs we can reveal non-categorial differential syntactic-semantic features of lexical units in the structure of the sentence. Those defined syntactic-semantic signs are proved by means of different ways of transformations. And then we can reveal paradigmatic rates of those defined non categorical differential syntactic-semantic signs.

Key words: Differential, opposition, substantial, qualitative, agentive, object, locative, temporal, transformation

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The study of the deep structure of the language in the world linguistics has started to develop due to different approaches made by scientists since the appearance of N. Tomsky's "Transformational Grammar".

According to N. Chomsky's statement, "... deep structure which presents the propositional relations for each verb in a canonical form"knowing the syntax of any language consists of knowing a set of phrase structure rules that generate the underlying deep structure." [mcu.edu.tw/ssmith/1ing/fall2007syntax2.ppt].

Generally speaking, the idea that the beginning of each sentence makes up the surface structure, while the product that appears as a result of the transformation is the deep structure of the sentence is put forward.

Speaking about deep structure of the sentence is based on the linguistic methods which were worked out by A.M.Mukhin, U.U. Usmanov stated, "By analyzing a sentence dividing it into syntaxsemes or when the deep structure of the sentence is based on, the focus of the researcher should be revealed the differential syntactic -semantic signs of the defined components, their variants and their abilities to connect with other syntaxemes on the base of syntactic connection." [Usmanov, 2004].

So the deep structure of the sentence means that the differential syntactic - semantic signs of the defined components are identified in paradigmatic way, that is, with the help of opposition method. Before analyzing the components of the sentence by dividing them into syntaxemes, categorical differential syntactic - semantic signs are defined, and with the help of them, according to the syntactic position of the components in the sentence, the non-categorical signs are revealed.

When defining the syntaxemes the differential syntactic-semantic sign of the analyzed sentence is compared in comparison with the syntaxemes of another sentence. Here one of the most important issues is relying on one syntactic connection when dividing the syntactic units of the sentence both into components and into syntaxemes.

Speaking about this method of analyzing U. Usmanov mentioned: "... not the analyzing of the syntactic units which participate in the structure of a sentence by dividing them into units of a sentence (primary and secondary parts), but analyzing them by dividing into components and syntaxemes which present a great opportunity to explain the form and the meaning of the syntactic units of the sentence. [Usmanov,1992, p.44]

True, if a chosen object is analyzed by using such linguistic methods correctly and reasonably, the following theoretical and practical opportunities will be created for the researcher:

1. There will be an opportunity to study forms and contents of the syntactic units of the sentence;
2. It will validate the classification of the sentence structures from the syntactic and semantic points of view;
3. In the process of analyzing the sentence elements by dividing them into syntaxemes, it is necessary to study systemic connections from the syntactic point of view, as each syntaxeme the content of a syntactic unit. This provides the researcher with a great opportunity to define the paradigmatic rates of syntaxemes;
4. On the basis of linguistic methods there will be sufficient opportunity for modeling (molding) the sentence structure and for using experimental methods;
5. The results of the research i.e. modeling the systemic connections of syntaxemes and their variants,

will serve as a main basis for comparative research of the deep structure of the sentence in the languages of different structure;

In order to clarify the idea of the deep structure of the sentence, we divide the syntactic units of the sentence into syntaxemes and analyze them, dwelling on the important features of some syntactic units which are used as subjects, predicates, attributes, objects and adverbial modifiers by dividing them into syntaxemes.

It should be pointed out that the main cause of critically approaching to the syntactic analysis of the sentence structure especially, the analysis of the sentence by dividing it into components by the majority of linguists, is mixed up the differentiating aspects of the levels the language. It is the result of researching the issues born during interrelations between syntax and semantics from the point of plan of expression rather than from the point of plan of content. On this issue, M. Giro-Veber wrote, "Namely, as a result of such inconsistency, very often absolutely different units are considered as one and the same member of the sentence, for example, the subject in the nominative case may equally mean: an active agent (the girl is singing), a passive object of action (the house was built), the carrier of the feature (He is handsome), a subject of state (The boy is ill), and even an object of possession (I have a new bicycle) where activity or passivity of the connotation, his different features remain structurally unexpressed" Giro-Veber, 1979, pp. 66-67. Looking at the result of such unsuitable analysis G.A. Zolotova stated: "... that Syntax may be studied without dividing into members of the sentence" [Zolotova, 1973, p. 218].

To prove the abovementioned thoughts let us pay attention to dividing into syntaxemes and analyzing some syntactic units, which is in the position of subject and predicate in the sentence:

1. She reads. 2. She is happy. 3. She is twenty.

The subject of these sentences is expressed by the personal pronoun "She," when they are analyzed by means of syntaxemes, "She" is revealed in the position of nuclear predicative 1, and expresses the categorical sign of substantiality (sb), in respect to reads (NP2) it expresses a non-categorical sign of (Ag- the substance, carrying out activity) the agentive. As the syntactic unit, used instead of NP2 "reads" - expresses the categorical sign of procceccuality, and expresses the non-categorical sign the actional (Ac- action) and its syntaxeme model is: SbAG.PrAc.

In the second sentence, "She" means substantiality, while "is happy" means the categorical sign of qualification (Q1f), and also expresses state (status - St) among non-categorical signs. "Is happy" is an expressed non-categorical sign, while stative condition is transferred to "She -substantiality which

substitutes NP1. The stative condition expressed by "is happy" may be explained with the help of experimental method (additional transformation) "in the state of" and its transformation to syntactic unit "She" may be proved as follows:

(2) She is happy ? She is in the state of happiness. According to syntaxseme analysis of the sentence, the deep structure can be explained by the following model: StSt. PrSt.

In the last sentence, "she" expresses substantiality. "Is twenty" expresses qualificativity quality, and among non-categorical signs expresses quantitativeness

(Qun -number), and this non-categorical sign transferred to the quantitative "she" - substantiality, as a result, the "she" - quantitative is a loaded substantial syntaxeme. So the deep structure of the sentence "She is twenty" consists of SbQun QlfQun syntaxeme model.

It is clear from syntaxeme analysis of the component in only three sentences in which it expresses the subject. They differ from each other semantically in a syntactic level, but in the traditional analysis, they do not differ from each other.

Certain syntactic units in the function of attributes differ from each other in syntaxeme analysis.

1. The young man opened the door.

2. I heard a woman's cry.

3. The people in the line were smiling.

In the first sentence, the word "young" expresses the qualificative qualitative syntaxeme. "Man - substantial" expresses the agentive in relation to the predictive, "opened" expresses the proccecual actional structure, "the door expresses - substantial the object syntaxeme. The deep structure of the sentence, that is, the syntaxeme model may be explained as follows:

(1) The young man opened the door.

QLfQLt.SbAg.PrAc.SbOb.

In the second sentence "I heard a woman's cry," the syntactic unit "I" expresses the substantial agentive syntaxeme, "heard"- expresses proceccual actional syntaxeme, "a woman's" expresses substantial possessive syntaxeme (genitive), "cry" expresses the substantial object syntaxeme. So, the deep structure of the sentence is as follows:

(2) I heard a woman's cry-SbAg.PrAc.SbPs.SbOb.

(3) To identify as "attribute" the syntactic unit "in the line" in the last sentence is far from reality. Since this sentence enters the following transformations of adding and changing: The people in the line were smiling. The people had been in the line who were smiling, or The people who were in the line they were smiling. In this sentence "The people" is expressed as a substantial syntaxeme loaded with stative meaning, while "in the line" as a substantial locative syntaxeme, and "were smiling is expressed as a proccecual stative syntaxeme".

Hence, the deep structure consists of the following syntaxemes:

The people in the line were smiling-SbSt.SbLc.PSt. Here we see that the syntactic units called attributes differ from each other on syntactic level.

A further issue, if we dwell on the issue of the complement objects in the traditional theoretical and practical grammars, they are divided into four kinds.

1. I saw him come.
2. I consider him to be clever.
3. I allowed the letter to be sent.

In the traditional grammar the units "him come, him to be clever, the letter to be sent" are considered as complex objects. According to J. Buronov and others: "The complex object consists of two components, the second being in predicative relation to the first" [1974, 316]

Exactly in this textbook, it was said, "The complex object forms an undividable unit and is considered a part of the sentence." [1974.317]. The description "a part of the sentence" in the last sentence does not correspond to the definition "in the predicative relation to the first component." One of the main causes of this is that the syntactic relations among those units identified as complex object, and the composition of their components and their differential syntactic semantic signs are not studied perfectly. When we analyze above-mentioned sentences by dividing them into syntaxemes, we notice that the syntactic units identified as components have semantic differences from each other.

I saw him come. I - substantial agentive, saw-proccedual actional, him-substantial object in relation to the element "saw", and agentive in relation to the element "come", come expresses -procceccual actional syntaxemes. So, him-SbObAg, come - PrAc. The deep structure of this sentence is: SbAg.PrAc.SbObAg.PrAc. In the second sentence the syntaxemes expressed by "I" and "consider" are like the syntaxemes expressed in the first sentence. "Him" - substantial object syntaxeme in relation to the element "consider", as the qualificative "to be clever" expresses qualitative syntaxeme, its qualitative role is transferred to the component "him". As a result, "him" expresses substantial object syntaxeme loaded with qualitative syntaxeme.

The deep structure of this sentence can be demonstrated in the syntaxeme model as follows: SbAg.PrAc.SbObQLt.QLfQ1t.

In the last sentence the components "the letter to be sent," "the letter" expresses substantiality while expressing object syntaxeme both in relation to the components "allowed" and "to be sent". As a result, "the letter-substantial" twice object syntaxemes by itself. "To be sent" expresses procceccual actional directive syntaxeme. The deep structure of the sentence is:

SbAg.PrAc.SbObOb.PrAcDr.

To prove the syntaxemes that were expressed by the components used as complex objects above, we can omit them and use the

verbalization - transformation methods as follows:

(1) I saw him come → .... him come → he came;

(2) I consider him to be clever → ....him to be clever → he is clever,

(3) I allowed the letter to be sent → .... The letter to be sent → the letter was sent.

In traditional grammar, the adverbial modifier is also considered as the secondary part of a sentence with plenty of disputable issues. However, in defining the deep structure of the sentence, we shall not dwell on all kinds of adverbial modifiers; however, we dwell, to some extent, on the research of the syntaxemes of the components expressing modifiers of place and time.

If we pay attention to three cases representing the adverbial modifier of place, we can see the difference of non-categorical syntactic-semantic signs in their substantial circle although their categorical deferential syntactic- semantic sign is the same.

1. I live in Nukus.
2. I go to Nukus.
3. I came from Nukus.

In the first, sentence "in Nukus" expresses the substantiality, while among non-categorical signs it expresses locativeness (place, residence, seat) and adessiveness (person's or thing's whereabouts). Thus, "I" expresses the substantial agentive, "live" expresses procceccual stative, and "in Nukus" expresses the substantial locative adessive syntaxeme. The deep structure of this sentence can be interpreted as follows: SbAg.PrSt.SbLcAd.

The syntactic unit "to Nukus" functioning as a modifier of place and in the second sentence expresses the categorical sign of substantiality while expressing the locative and the allative syntaxemes (A1 - the direction of the activity to a certain object or place) of non-categorical differential syntactic-semantic signs. So, "I" expresses the substantial agentive whereas "go" expresses proceccual actional syntaxeme. The syntaxeme model of the deep structure of the sentence is as follows:

(2) I go to Nukus. SbAg.PrAc.Sb LcA1.

In the last sentence "from Nukus" expresses the locative and the ablative syntaxeme (Ab1 - remoteness of the action from the object or place) based on the substantial categorical sign. In the structure of the sentence, "I" expresses a substantial agentive, while "came" expresses a procceccual actional syntaxeme.

The syntaxeme model of the deep structure of the sentence: (3) I came from Nukus. SbAg.PrAc.SbLc Ab1.

It is clear form the analysis conducted according to the linguistic methods that the functional difference of the syntactic units functioning as modifier of place can serve as a proof of our opinion that they are not yet investigated enough.

According to traditional theoretical and practical grammar, the adverbial modifier of time is the secondary part of the sentence when the action in the sentence structure will be finished. In other words, the adverbial modifier of time means the time when the activity takes place, and is limited to demonstrating its methods of expression.

When the sentences having the adverbial modifier of time are divided into syntaxemes and analyzed, it is called temporal (Tm) syntactic-semantic sign or temporal syntaxeme.

1. Real temporality: He visited us on Monday. To prove this syntaxeme the adverb "then" may be used to replace it:

He visited us on Monday → He visited us then.

2. Temporal identified: Today is Christmas holiday. In this sentence, the element "today" can be replaced by the adverb "now", however it cannot be replaced by "then": Today is Christmas holiday → Now is Christmas holiday.

3. Temporal syntaxeme of manner (TmMn):

Television was left on from morning until night. In this sentence to prove the existence of manner in the sphere of temporality, it can be replaced according to transformation-interrogation (with "in what way" or the adverbial modifiers of time such as, "thus" and "then"):

Television was left on from morning till night ? In what way was television left on → Or: Television was left from then on. Or Television was thus left on.

Proceeding from the abovementioned analyses, we can say without doubt that the other forms of adverbial modifiers need exactly the same analysis.

In short, the way, which demonstrates the deep structure of the sentence, is analyzing syntactic units by dividing them into syntaxemes.

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ARE WORLD COUNTRY, REGIONAL DEVELOPMENT CATEGORIZATION BY WORLD BANK; IMF AND UNDP HELPFUL IN PROMOTING SUSTAINABLE GROWTH, KNOWLEDGE AND TECHNOLOGY: A SUGGESTIVE ALTERNATIVE APPROACH

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Abstract: Country categorization under World Bank, IMF and UNDP mainly focuses on financial and human development index. This works well for countries with low scores as funds could be transferred to the bottom countries. But countries with low innovations and inventions can score well under these indices. Countries rich in high valued natural resources and countries who are replicating thus avoiding high R&D costs can have good scores under these. Natural resources will eventually exhaust and replicating countries will suffer in case of tighter patent and copyright laws and will not able to achieve sustainable growth. We have suggested an alternative approach whereby countries are divided in to hyper advanced (Inventing), advanced (Innovating), advancing (replicating) and least advanced (Primary) countries. Countries with at least one significant invention during last 50 years are considered as inventing nations. Innovating countries are categorized according to their corresponding GII scores, countries who score? 40 out of 100 are considered as innovating states. While those with < 40 are considered either replicating or primary.USA, UK, Japan, Sweden, Switzerland, Canada, Argentine and Philippines with 37, 4, 3, 2, 1, 1, 1, 1&1 inventions respectively are inventing nations. Switzerland with 68.4 topped the list while Croatia with 40.73 was the last of innovating nations. Our suggestive approach will not only discourage countries under last two categories by ranking them lower than their current global standing. But also encourage countries who are inventing and innovating.

Key words: Development indicators, World bank, IMF, UNDP, Global Innovation Index, Sustainable development, R&D

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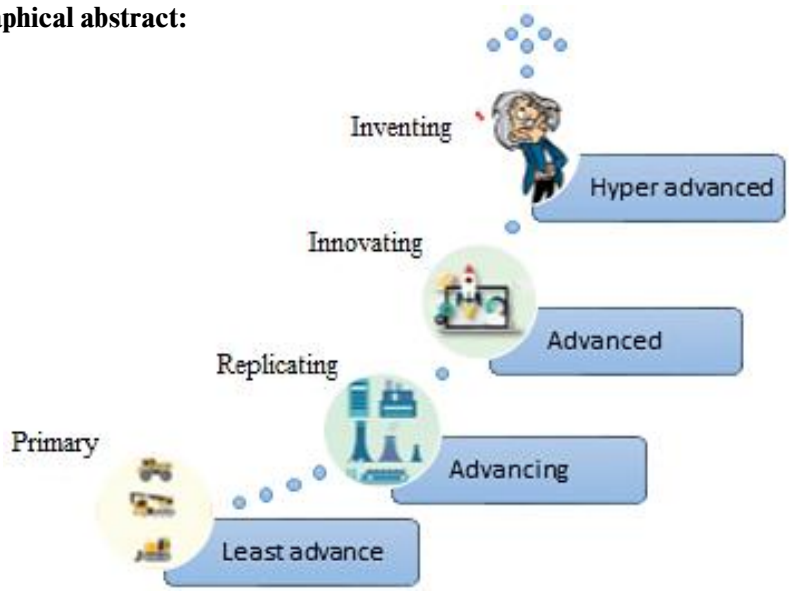
Graphical abstract:



1 INTRODUCTION:

Categorization of countries help to develop better understanding of their performance, categorization in to develop and developing is the most accepted method [1].Developed and developing countries categorization is at the core of discussions related to development studies and policy. While classification of world countries in to develop and developing subsists but owing to the drastic relational changes amongst countries this classification possess obstacles for comprehension of present opportunities and issues[2].

Currently there are three main agencies who categorize countries according to different development indicators these include World Bank, IMF (International monetary fund) and UNDP (United nation development program). The World Bank supports developing countries by providing them with loans and technical support. It has a mission to 'promote shared prosperity' and 'reduce extreme poverty'[3]. Basic purpose of the IMF is to ensure stable global monetary system, international payments and exchange rates in order to assist transactions between countries and transactions between residents of these countries[4]. The main goal of UNDP is to help countries with sustainable development[5].

Categorization under World Bank is mainly based on gross national income per capita (GNI/Capita). Revision of the 'analytical classification' based on GNI/Capita is conducted on 1st of July for the last year. World Bank July 1st 2016 countries classification based on

GNI/Capita measured by employing world Atlas method is as: low income (between $1,025 or less in 2015), Lower middle income (between $1,026 and $4,035), upper middle income (between $4,036 and $12,475) and high income ($12,476) countries[6].

Countries classification under IMF is mainly based upon: per capita income, diversification of exports and level of integration with international financial system[1]. Under IMF countries are mainly categorized in to two main categories: 'advanced economies and emerging & developing economies'. This taxonomy developed without any strict standards over time, with an objective of assisting analysis through significant arrangement of data[7].

Finally country classification under UNDP is based upon Human development Index (HDI). Three factors are basically considered under HDI these are: life expectancy, education and income. Where the education is measured through a combination of expected and actual schooling years. Life expectancy is measured as expectancy of life at birth and finally income is measured as gross national income per capita (GNI/Capita). Countries are divided as low human development, medium and high human development countries, having thresholds between 0.5 and 0.8[8].

There might be cases where countries with good scores under any one of these or all three ranking methods may not be on the path of sustainable growth i.e. economies based on production of natural resources and raw materials. Also some countries with good scores in order to avoid high R&D costs are replicating and copying in doing so earning higher than average profits while discouraging those countries who are innovating and inventing and spending heavily in R&D.

In this paper author has suggested to distinguish countries on basis of inventions, countries with considerable inventions during last century will be considered as inventing countries (Hyper advanced), world hold gratitude to these countries due to their tremendous life changing services to mankind. On the basis of Global innovation Index (GII), countries will be ranked as innovating countries (advanced countries). Countries whose major exports are finished goods having low GII score are still in replication stages (advancing) with improved GII scores can move to as innovating status. Finally those countries with low GII scores whose major exports are raw material or natural resources irrespective of the fact what is the GNP/Capita, life expectancy, education (under UNDP definition) are still in the initial stages of development that is producing and exporting raw material and natural resources (Least advanced).

The rest of the paper is divided as: Section 2 contains problems with current methods including 2.1 sustainable development and 2.2 lack of encouragement, section 3 is about data sources and methodology adopted, section 4 contains results our suggested classification of the world economies, in section 5 we have concluded our work and discussed policy implications.

2 PROBLEMS WITH CURRENT METHODS

2.1 Sustainable development:

First of all World Bank and IMF take into consideration a country's monetary status. It works when all the countries have equal distribution of natural resources but countries who have high concentrations of natural resources can achieve these even with low innovations and R&D investment. Meaning high per capita income, and even in some cases things like better infrastructure, healthcare, educational insinuations etc. The problem is that these countries may not be able to even survive in the absence of these resources as they are not well trained or equipped.

Although diversification of exports and global financial Integration is included in IMF country classification system but replicating countries can or sometimes have diversified exports and can at the same time be more integrated with global financial system. Those countries who have high profits mainly due to replicating and avoiding high costs of R&D are not being discouraged under this model. They will also not be able to sustain their growth if countries who are innovating put tighter patent laws, people go for quality over quantity, trade war due to cheap products from these countries and so on. Secondly the countries who are contributing to the betterment of mankind through innovations and inventions are not properly recognized under system.

One might argue that UNDP take into consideration human development index (lifespan, education and income) but still in the absence of results in the form of innovation and invention specifically for those countries whose economies are based upon export of natural or raw resources without innovation and inventions will not be able to sustain their growth.

2.2 Lack of encouragement:

Countries who have high per capita income owing to abundance of precious natural resources (like gulf countries) but low quality R&D in order to get out of low ranking will start investing in quality education which will lead them on the path of sustainable development. At the same time countries who have low per capita income normally have poor R&D will be provided loans and other financial assistance on the promise to not only increase their rate of education but also quality to increase their total and per person number of research articles and patents. It can encourage countries

to not only contribute to science and technology but also in order to improve their ranking improve quality of education which is outcome oriented.

3 DATA AND METHODOLOGY:

3.1 Data:

Due to the fact that it takes huge amount of effort and time to come up with a life changing invention a period of half a century was considered to classify countries in to inventing nations based on their life changing inventions. As there is no hard and fast rule to determine what is or what is not a life changing invention we have used the classification by PM [9] for the most significant inventions of mankind for the last fifty years. Whereby they consulted 25 experts at 17 universities and museums across USA. These experts were from various fields including autos& technology; biology; Medical; Aeronautics and physics. An initial list of 100 inventions was dispatched for voting and through point system reduced to 50 on the basis of top pick by each expert. Data regarding innovating nations was sourced from [10] which is based upon Global Innovation Index 2018[1]. And replicating and raw material based economies can be classified upon their main exports or export which is based upon CIA World Fact book [11].

3.2 Methodology:

Countries with at least one significant invention during last 50 years are categorized under the status of inventing nations of the world.

$$Inventing\ countries = At\ least\ one\ importnat\ invention\ during\ last\ 50\ years$$

Innovating countries are based upon Global innovation index which is calculated on the basis of simple average of innovation input sub-index and innovation output sub-index[10]. We considered countries with a score of 40 or above out of total of 100 as innovating countries rest of the countries are considered either as replicating or raw material exporting countries[2].

$$Innovating\ countries = \ GII\ score\ of\ \geq 40$$

Finally those countries with GII scores of < 40 are considered either as replicating or raw material dependent economies.

$$Replicating\ countries = Major\ export\ finished\ goods\ (GII\ score\ < 40)$$

And for raw material exporting economies

$$Primary\ countries = Major\ export\ raw\ material\ (GII\ score\ < 40)$$

4 RESULTS OF SUGGESTED CLASSIFICATION

4.1 Inventing countries (Frontrunner/Hyper-advanced)

Figure 1. Contains the ranking of the major inventing countries during last century. A very few countries fall under this category. These countries are lucky enough to have the bosses (gurus) of science and technology. Their contribution towards the field of science and technology is immense. Countries who have provided the world with renowned inventions e.g. Radio, TV, Computer, Satellites, Telephone, Airplane, Healthcare equipment, cure for cancer, HIV etc. Fall under this category. Due to their immense service to the mankind these countries should be recognized as leading light for the rest of the world to follow. Because of the fact it requires huge amount of time alongside with other resources to come up with world changing inventions a period of at least more than half a century should be considered.

United States of America with a total of 37 major inventions out of fifty topped the list of inventing countries. Followed by United Kingdom with four major inventions. Third country with considerable inventions during last fifty years was Japan with 3 major inventions. Followed by Sweden, Switzerland, Canada, South Korea, Argentine and Philippines with one key invention each respectively. All of these countries are from the developed world except for Argentine and Philippines. Presence of relatively less developed countries in this category implies that even in the absence of best available facilities if you have got extraordinary minds you may still come up with world changing inventions which might be true under exceptional cases but most of the times these inventions came or would come from developed nations. Table 1A in appendix sections contains the details of the country wise inventions. There is still no hard and fast rules to determine what are considered as key inventions. This is a field where more work needed to be done.

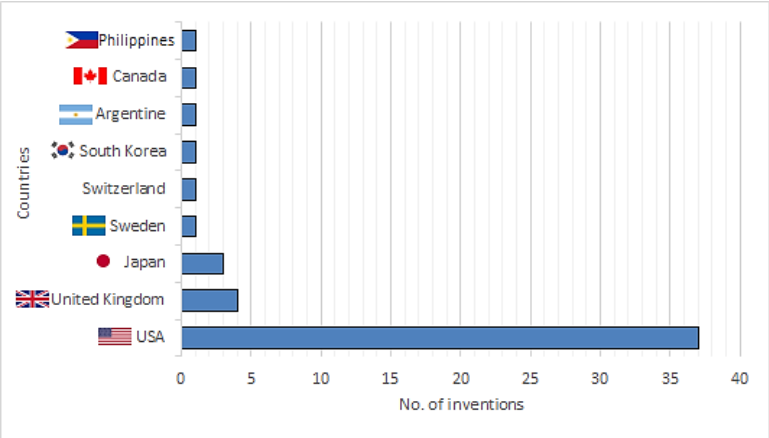


Figure 1: World top inventing countries for the last 50 years

4.2 Innovating countries (Advanced)

Most of the developed countries categorized by World Bank, IMF and UNDP fall under this category. These countries invest heavily in R&D and have a high rate of recognized research publications and patents. Most of the innovations are carried on in laborites of these countries. We have considered countries who score ≥ 40 out of 100 Global innovation Index (GII)[3] as innovating countries again there is no hard and fast rule of selection criteria.

Figure 1 contains the spatial presentation of innovating countries. Top three countries are all form EU, Switzerland with a GII score of 68.4 tops the list, followed by Netherlands is at second place with a score of 63.32. Third on the list with a score of 63.08 is Sweden. While United States which is: the top inventing nation of the world (at least as per our findings) is at the sixth spot. The last three countries who made to the list as innovating countries include Poland with 41.67; Lithuania with 41.19 and Croatia with 40.73 respectively. The only difference between advanced and hyper-advanced countries is availability of extraordinary individuals who have the ability to change the world through their groundbreaking inventions.

If we look at the regional distribution most of the European countries have GII scores of greater than 40 hence fall under this category. When it comes to Asia, Israel with a score of 56.79 topped the list, followed by Republic of Korea with 56.63.Third on the list was Japan with a GII score of 54.94. Followed by China 53.06, Cyprus 47.83, Malaysia 43.16 and United Arab Emirates with 42.58 respectively. Oil rich gulf countries who might have better ranking due to their strong economies under World Bank, IMF and in some cases under UNDP failed to score 40 could not make in to innovating countries category (At least under our criteria). Other two regions include North America with USA 59.81 and Canada with 52.98 GII scores plus Oceania with Australia 51.98 and New Zealand 51.29 GII scores respectively. Unfortunately no country from Africa and South-America scored a GII score 40. Most if not all countries from these two regions are in poor economic and political state. International institutions must take in to consideration the innovation scores of these regions. Loans and international aid to these regions should be attached with the condition of future improvement of GII.

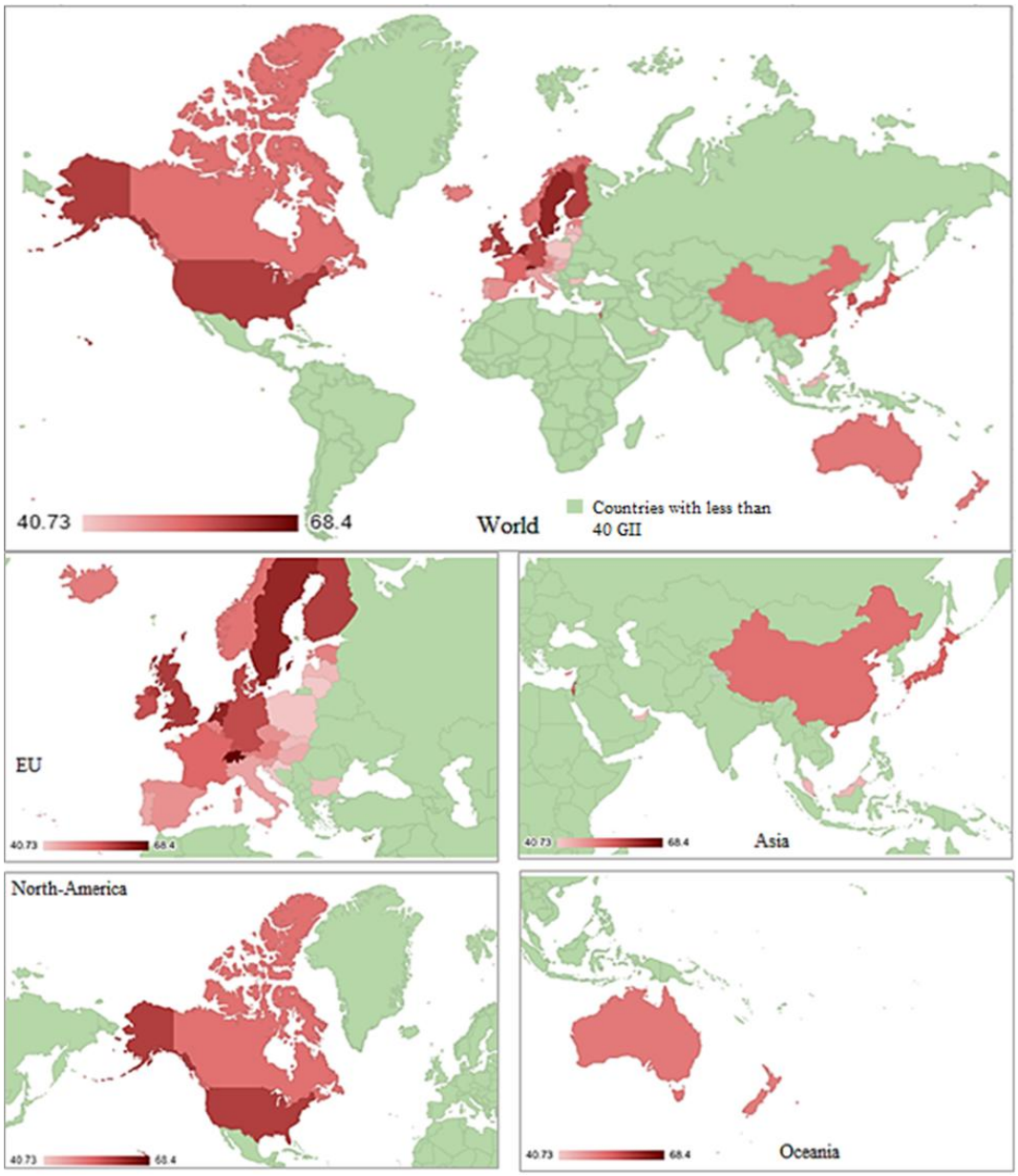


Figure 2: Spatial presentation of GII based innovating countries

4.3 Replicating countries (Advancing)

Figure 2. Contains spatial presentation of world countries according to their main export and comparative GII scores of low scoring countries i.e. GII scores of less than 40.

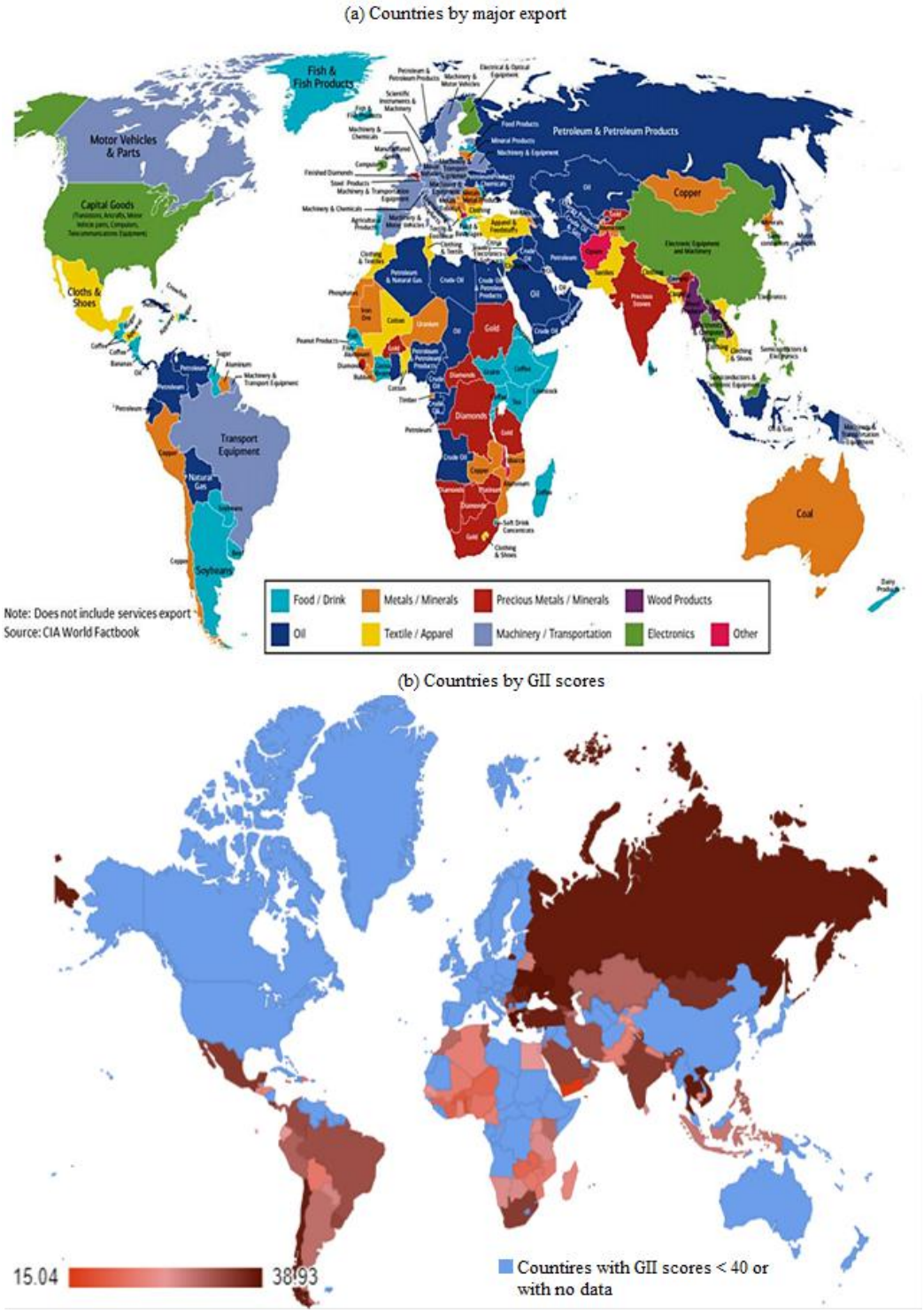


Figure 3: (a) Export wise world country classification based on CIA Factbook[11] retrieved from [12], (b) Classification for countries with less than 40 GII scores.

Countries who have low GII score and mainly sell (export) finished goods fall under this category. These countries mostly but no necessarily replicate to reduce cost of production and are reluctant to invest in costly R&D. In most of the cases these countries try to maximize their profits by achieving economies of scale. These countries prefer quantity our quality. Again their contribution to body of knowledge related to science and technology is quite limited. But with the passage of time they realize the importance of R&D and start focusing towards quality and innovation. China can be considered as one of the examples which for the last few decades was focused on maximizing profits via replicating while purposefully avoiding high costs research and development had recently realized that sustainable development is not possible without R&D and has diverted it attention. Which is evident by number of high quality innovations coming out of China. We can say that China from a replicating nation has just entered or entering in to group of innovating nations. They are different from the usual production based or secondary economies in the sense that countries with high GII score who even might have production based economies will not be included in this category[4]. The data is from [11] and the map is retrieved from [12].

4.4 Raw material dependent economies (Least advanced)

Countries whose economies are dependent upon natural resources and major portion of whose exports consists of raw material are categorized as least developed under our criteria. These countries should be considered least advanced irrespective of their per capita income, GDP growth rate and in rare cases high rate of education etc. One might question that if these countries have high per capita income and GDP growth rate why these countries should remain under this category. One logical answer to this question might be that natural resources diminish eventually so high level of these indicators will not be sufficient enough to bail these countries. The second rare but plausible situation might be that these countries have high rate of education but still have low GII score in this case the quality of education might be low hence not producing the desired results. Finally owing to the fact that these countries don't need or willing to invest in R&D there will be no or negligible contribution to the field of science and technology by these countries[5].

5 CONCLUSION& POLICY IMPLICATIONS:

5.1 Conclusion

Categorization of countries on the basis of their contribution to the field of science and technology will inspire countries in order to improve their ranking inevitablyto give more

attention towards R&D. And try to innovate and invent which will lead towards sustainable development and the betterment of mankind as a whole.

The current categorization system adopted by World Bank, IMF and UNDP although indirectly might encourage R&D but by no means has the capacity to directly encourage countries contributions in the field of science and technology. Countries abundant with high valued natural resources might attain high per capita income, GDP growth rate. Also they can use this money to increase the rate of education but unless or until their educational institutions in specific and countries in general are not contributing to the world in terms of innovations and inventions their education system lacks the quality.

As per our results nine countries including: USA, United Kingdom, Japan, Sweden, Switzerland, Canada, South Korea, Argentine and Philippines can be considered as the top inventing nations of the last half century. Whereby USA is the number one with astonishing thirty seven outstanding inventions, followed by United Kingdom with four major inventions and Japan with three. Sweden, Switzerland, Canada, South Korea, Argentine and Philippines each contributed one major invention during the last century.

The innovating countries were decided upon their relative GII scores and countries with scores of 40 were considered to be the innovating nations. A total of 41 countries out of 126 scored more than or equal to 40 were deemed as innovating nations. Here all Top three countries were from European Union, Switzerland with a GII score of 68.4 topped the list, followed by Netherlands with 63.32 and Sweden with 63.08. United States with a score of 59.81was at the sixth position. The last three countries were Poland with 41.67; Lithuania with 41.19 and Croatia with 40.73 respectively. When we look at regional contribution most of the European countries have GII scores of more than or equal to 40 hence are categorized as innovating countries. From Asia Israel topped with a score of 56.79 was regional leader followed by Republic of Korea 56.63, Japan 54.94, China 53.06, Cyprus 47.83, Malaysia 43.16 and United Arab Emirates with 42.58 respectively. From North America USA 59.81 and Canada with 52.98 GII scores plus Oceania with Australia 51.98 and New Zealand 51.29 GII scores respectively. No country from Africa and South-America scored a GII score $\geq$ 40.

All those countries whose scores were less than 40 were deemed as either replicating (Advancing) or primary (least advanced) countries. It should be kept in mind by replicating here we meant all those countries who scored < 40 on their respective GII score and whose major exports were finished goods. On other hand those countries whose major exports were raw

material and natural resources and scored < 40 should be treated as Primary (least-advanced) nations.

5.2 Policy Implications

Our suggested proposal by no means is a replacement for country categorization system currently used by World Bank, IMF and UNDP but can be used in conjunction with current methods to encourage those nations who are contributing to the field of science and technology. And discourage those countries who have based their economies on natural resources or replication.

Countries who are basically replicating and in some cases copying products would automatically be discouraged. Thus not really contributing to the field of science and technology and at the same time can indirectly demoralizing innovating and inventing countries who are spending huge sums on their research and development. In order to improve their ranking they have to invest more in R&D and start focusing towards innovations and branding. Financial assistance provided to these countries should be based upon moving towards the innovation phase.

Innovating countries contribution to the field of science and technology will be directly recognized under this method. And they will be distinguished from those countries who under current system of categorization by World Bank, IMF and UNDP benefited from natural resources and in some cases natural beauty, historical/religious significance and replication can score high. Which will not be possible under our suggested method of categorization.

Finally the world leaders, fore-runners, gurus in the field of science and technology whose inventions have changed the world and helped mankind hugely will hold the top most spot as the hyper-advanced countries. Whereby suggested categorization will not only show mankind gratitude to their tremendous service to them but also encourage other nations to contribute their bit to the betterment of mankind.

The main benefit be that while most of the nations under top two categories are developed countries but some nations who haven't focused towards their quality of educations in terms of outcome orientation might be distinguished from them. And this will encourage them to utilize huge money leverage due to their natural resources and location to betterment of mankind by innovating and inventing. At the same time discourage those nations who in order to maximize profits are avoiding high costs related to R&D and are just replicating products produced by top two nations. Which is discouraging to the nations who are working for the betterment of mankind.

Appendix:

Table 1A: Country ranking based on renowned inventions for the last 50 years.

Country	Inventions	Inventor/ Company	Date	Total
USA	TV REMOTE CONTROL	Zenith Eugene Polley	1955	37
	MICROWAVE OVEN	Raytheon Percy Spencer	1955	
	BIRTH-CONTROL PILL	ND	1957	
	JET AIRLINER	Boeing	1958	
	CORDLESS TOOLS	Black and Decker	1961	
	INDUSTRIAL ROBOT	George C. Devol Jr.	1961	
	COMMUNICATIONS SATELLITE	C. Clarke	1962	
	LED	Nick Holonyak	1962	
	UNMANNED AERIAL VEHICLES	ND	1964	
	Vedio Gaming	MIT	1962	
	Polio Vaccine	Jonas Salk	1955	
	INTEGRATED CIRCUIT	Jack Kilby	1959	
	MUSIC SYNTHESIZER	Robert Moog	1964	
	ARPANET	ND	1969	
	CHARGE-COUPLED DEVICE	Bell Labs' George Smith and Willard Boyle	1969	
	DIGITAL MUSIC	James Russell	1970	
	Apple II, TRS 80 (Personal computer)		1977	
	WAFFLE-SOLE RUNNING SHOES	Bill Bowerman	1971	
	Computer Mouse	Doug Engelbart	1962	
	Cellphone	Motorola	1973	
	SMOKE DETECTOR	Randolph Smith and Kenneth	1969	
	Automated Teller Machine	Chemical Bank	1969	
	KEVLAR	Stephanie Kwolek and Herbert Blades	1965	
	FIBEROPTIC	Corning	1970	
	ELECTRONIC IGNITION	Chrysler	1972	
	MRI	Raymond Damadian	1973	
	GPS	ND	1978	
	SCANNING TUNNELING MICROSCOPE	IBM	1981	
	GENETIC ENGINEERING	ND	1978	
	LASER BEAM	Theodore Maiman	1958	
	Pacemaker	Wilson Greatbatch	1960	
	HIV PROTEASE INHIBITORS	Hoffmann- La Roche Inc. (of Nutley, New Jersey), Abbott Laboratories and Merck & Co.	1995	
	SUPER GLUE	Eastman Kodak researchers Harry Coover and Fred Joyner	1958	
	PROZAC	ND	1987	
	GENETIC SEQUENCING	Craig Venter	1998	

	IEEE 802.16	Institute of Electrical and Electronics Engineers	2002	
	POLYMERASE CHAIN REACTION	Kary Mullis	1985	
United Kingdom	FLOAT GLASS	Alastair Pilkington	1959	4
	Hypertext markup language (HTML)	Sir Tim Berners-Lee	1989	
	DNA FINGERPRINTING	Alec Jeffreys	1984	
	In-Vitro Fertilization (Test tube baby)	ND	1978	
Japan	Sony Walkman	Sony	1979	3
	Hybrid Prius	Toyota	1997	
	CARBON-FIBER COMPOSITES	ND	1961	
Sweden	THREE-POINT SEATBELT	Nils Bohlin	1957	1
Switzerland	VELCRO	George de Mestral	1955	1
South Korea	MP3 PLAYER	Saehan	1998	1
Argentine	CORONARY BYPASS SURGERY	Rene Favaloro	1967	1
Canada	Zero-emissions fuel cell bus	Ballard Power Systems	1993	1
Philippines	HIGH-YIELD RICE	International Rice Research Institute	1966	1

[1] The above table by no means is the final authority on important inventions by country instead it's just a rough estimation for illustration purposes.
[2] ND here means that either the name of the inventor or inventing company is disputed or unknown.
[3] Inventions are assigned to the countries on the basis of inventing scientist or company.

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1. 'International innovation index'[13] is another famous measure for a country's global innovation standing, which can be used as an alternative to 'Global Innovation Index'. Alternatively if one is interested in a country's level of knowledge intensity, economic complexity ranking which as per [14] is based upon the knowledge intensity of a country's export can also be employed.

2. This is based upon our understanding it could be as strict as or may be lenient up to.

3. GII is defined as the simple average of Innovation input- sub index and innovation output sub-index. Innovation input sub-index is further divided in to Institutions, Human capital and research, Infrastructure, market sophistication and business sophistication. On other hand innovation output sub-index is based upon knowledge and technology outputs and creative outputs. It is one of the most comprehensive index for innovation based ranking of a nation. Innovation efficiency index is calculated as the ratio of innovation output sub-index to innovation input sub-index which eventually determines a country's GII[10].

4. This term 'Replicating' is considered for better comprehension, in reality there might be some cases that some countries under this category are not replicating products.

5. As the model is based upon innovations and inventions countries with poor GII scores whose economies are dependent upon tourism can be categorized under fourth category. Service oriented economies in most of the cases have good GII scores due to high quality of education and heavy R&D investments.

SOCIAL SCIENCE AND HUMANITIES

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FEATURES OF COSIO-POLITICAL IDEAS OF SAMARKAND JADIDS

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Abstract: This scientific article outlines the socio-political views and relations of the Samarkand Jadids. They have expressed their views on various incidents in society. In particular, it was highlighted that the development of the national language and the excessive erosion of the Russian language, as well as the freedom, independence of the people and the self-determination of every nation, raised the issue of rights. In the absence of funding for the national education system, the moral crisis and its socio-political causes have been disclosed.

Key words: newspapers and magazines, tyranny, national liberation, education and training, school, education, jadids.

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The end of the 19th and the beginning of the 20th century was a stormy period of socio-political, spiritual transformation and renewal in the history of the peoples of Turkestan, especially regarding the public activities of the Samarkand Jadids. The emergence of the ideas of the national awakening movement from the point of view of historical philosophy and the emergence of new socio-political views is one of the most important features of this period of socio-political and cultural life. In the writings of the Jadids, the fate and prospects for the development of the country and people occupied a special place. During this period, the public and political views of the Samarkand Jadids were literally decorated and substantially updated.

The study of the philosophical nature of the reflection of these

renewed socio-political views on a scientific and theoretical basis is one of the urgent tasks of modern social sciences.

That is why the study and solution of social and political issues in the writings of the Jadids is one of the urgent scientific tasks. Among them are the following:

- Disclosure of the essence of freedom issues and their socio-political idealization in the views of Samarkand Jadids in the early 20th century;
- A study of the socio-political and ideological ideas of the Jadids;

Studying the creative heritage of the Samarkand Jadids is an analysis of the works of the enlightened intelligentsia, which serve to enrich the morality and spiritual world of a person and the significance of their ideas for the development of the country. This is clearly evident in this scientific article. Dreams of a perfect society, in which science, education and justice will prevail, have been accompanying humanity since its inception. These progressive ideas and views were inherent in the world view of all Jadids, including their Samarkand representatives.

Therefore, before studying the socio-political views of this period, it is necessary to look at the European literature of enlightenment. This was the time when, on the one hand, the works of European enlighteners of the eighteenth century began to be translated into Arabic and Persian languages, and on the other hand, the result of the training of representatives of the Muslim population in educational institutions of Turkey, Russia and European countries was the penetration of the ideas of European Enlightenment into the territory of our region , which in turn had a certain influence on the formation of ideas of Jadidism. [2, p.10]

A similar picture emerges in the late 19th and early 20th centuries in the Muslim East. However, we must not ignore historical conditions. Consequently, a situation has arisen when the historical conditions have changed, and when the nation has experienced a socio-political, educational and cultural crisis.

To achieve independence and freedom, the issue of reforming all aspects of public life was included in the agenda. These changes in the development of society have become the subject of attention in the writings of the Jadids. Therefore, it is impossible to analyze the activity of Jadids outside the context of the social realities of that time.

At the beginning of the 20th century, based on the social and political ideas of the Jadids, Jadid literature arose, and every educator who considered himself responsible for the country's future was primarily concerned with describing social reality. Consequently, the traditional images were sharply criticized, and the Jadids themselves were persecuted by the dominant authorities.

When the issue of the progress of the country was included in the

agenda, fiction was aimed at accomplishing this task. "The humanistic concept ofNavoi, the anticlerical spirit of the poets Turdi and Mashrab, the ability of Agah to feel the power of the people, the inseparable connection between the realistic satire of Mukimi. For them it was important to consider this process as a differentiation of social ideals in literature. "[3, p. 69]

Jadid literature was holistic, although the ideas of enlightenment embodied the content of traditional poetry. Socio-political problems were originally reflected in poetry, and later in drama and prose

The socio-political views of the Samarkand Jadids are manifested in their writings. "Each work is based on the artistic purpose of the writer. The task is of exceptional importance in determining the form and content of the created work. One of the criteria that emphasize the perfection of art is the harmony of creative ideals, which may be incompatible with forms and content. [4, p.11]

The end of the XIX - the beginning of the XX century was marked by the activation of various ideas and ideologies of freedom and independence, a turning point of spiritual revival, in which the socio-political character was clearly manifested. "The decline of literature was clearly felt due to prolonged unrest, oppression of the people in social and political life. Never before in our history there has been such a period of economic and social decline, "- said in the writings of Wadud Mahmud. [5]

The views and thoughts of JadidWadud Mahmud prove the enormous influence of many social problems on the social life of that time. This period is a reflection of the existence of the urgent social and political problems of our people. Unlike past ideas, the ideas of national awakening have turned into a movement for the practical implementation of the ideas of enlightenment. Vadud Mahmud in the article "Turkic literature before Navoi" called the period of AlisherNavoi's creative work a "golden age" in the history of Central Asia. [6, p.30]

In the views of Samarkand Jadids, the relevance of socio-political problems was timely. In the works of that time, ignorance, immorality, and an alienated attitude toward the events were sharply criticized. In particular, Abdulla Avloni's poem "Family Discussion" is reflected in its ideal school concept, the concept of enlightenment and the contradictoriness of contemporary problems. The poem presents the ideal image of a man, informed about the latest news, the propagandist of school education. "What has literature published recently, with the exception of a few poems? Can we say that our literary works are ideal? Of course not, - says Vadud Mahmud in one of his articles. [6, p.102]

In the views of Wadud Mahmud, in which the concern for the destiny of the people and the role of the enlighteners is clearly traced,

reflected the idea that for the development of social ideas, as Fitrat said, "works that affect the souls and excite the blood" are needed.

In the work of the Jadids until 1917, the theme of ignorance and enlightenment was reflected, and closer to 1916-1917 we can feel a certain decadent mood created because of the numerous disorders in social life. In the writings of the Jadids, who once sang high moral ideals of the individual and a new social order, now the human factor was assigned the central place. The historical fact is that 1917 was a difficult and tragic one for the representatives of the national independence movement, which were the Jadids, and for the people themselves.

This situation was reflected in all activity, the phenomenon was specifically reflected in the entire work of the diagrams. It is obvious that patriotic feelings from enlightenment rose to the dream of national independence. This idea is inherent in the creativity of almost all representatives of the intelligentsia and the enlightenment of the Turkic peoples.

The Jadids, deeply aware of the great influence of the theater on the growth of national self-consciousness at that time, called it the "window of miracles". Bekhbudiy expressed the idea that theater is the first condition of development in his article "Nadur Theater?" ("What is theater?"). Under the influence of the subject's study of the object, by the level of significance, a positive or negative attitude to it is possible. Dissatisfaction with events, society and personality, hatred towards them, in the work can be expressed through tragedy or humor. That is the reason for the "non-stop laughter of the crowd" at the sight of a friend of the bi-rich man in the drama"Padarkush." The antipode of this image is the thoughts of the representative of the reactionary clergy Domulla and the Enlightened, who at some point find a point of contact through which the author expressed the idea of educating people and their duty to serve the prosperity of the nation

The image of Komilboi (HodzhiMoyin, "Old school, a new school"), who is a freethinker and a supporter of a new school, is closest to the ideal of the educator Behbudi. In the confrontation between the old and the new school, KhojaMuin's attitude to social problems was reflected. The ideal of the author is Komil, who is a supporter of the new. The teacher of the old school of Khoja is the complete opposite of the teacher Behbudiya, his attitude towards the new school is negative. This image clearly depicts the image of the ideal hero Comilboi. Comilbo, as well as Domollo and the Enlightened, seeks ways out of the crisis as an active member of society. "There is only a way to get rid of the crisis - this is the path of enlightenment. There is one more way to enlightenment and this is a new school. "[7, p.260]

Jadids attach great importance to the role of the family in the reform of society. Jadids paid special attention to the formation of morality in the family in the process of educating the youth. begin moral education in family education. Jadids wrote dozens of works on family issues. A vivid example of this is the work of the Samarkand educator KhojaMuin "Family Education". Another testimony to his view of this problem can be seen in the drama "MalumaHotun" ("The Promise Woman"), where in the images of the family "We and You" reflects the confrontation between the two beginnings of enlightenment and ignorance, which was an expression of the author's attitude to socio-political problems. In the description of heroes, the image of enlightened people is made with an exclusive love for the author. For example, HodzhiMuin showed the image of a "new-minded and truthful supporter of new-method schools" in the person of the Teacher's hero.

In 1911, the play "Padarkush" marked the beginning of a new kind of genre, but already the dramas of 1917 by their form and content raised them to a higher level. In these works, the most serious social and political problems of society were shown.

The dramatic works created in 1916-1929 reflected not ideas of enlightenment, but a call for political struggle. The uprising in Turkestan in 1916, the tragic suppression of the national liberation movement "Turkestan Autonomy", the growing threat to independence and freedom and the aggravation of social life were factors in the deterioration of living conditions. The works of this era reflected a new aesthetic ideal, which was a characteristic feature of the social spirit and ideology of national independence.

According to Vadud Mahmud: "The strongest play that was ever played on Uzbek scenes is the play Fitrat" Chin sevish "(" True Love "), written from life in India, I think no one will deny it" (Vadud Mahmoud. Chin sevish. "KisilByro?." 1921, September 17, 22) In fact, the drama philosophically describes the ideas of national liberation.)

The views of Wadud Mahmud, based on a deep analysis of social problems, reflect the ideas of independence and equality, which he calls the basic ideas of the so-called "Indian reformers." Vadud Mahmoud writes about the drama: "... is a work rich in images, metaphors, the essence that stands in the first place in our literature." [9]

The works of Samarkand Jadids, based on the reflection of various facets of life and human activity, excursions into the past and the future, are now analyzed in the context of philosophical development and in social, political, ethical, moral aspects.

The socio-political views of the Samarkand Jadids found their expression in the ideas of the independence of the Motherland,

the education of the enlightened generation, the achievement of equality, which were essential for achieving the tasks that were set by that era and which, nevertheless, we achieved.

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THE INFLUENCE OF IRANIAN ISLAMIC ARCHITECTURE ON THE HOUSE OF QAJAR PERIOD IN TABRIZ (STUDY CASE AMIR NEZAM HOUSE)

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Abstract: In this article, the authors study the influence of Iranian Islamic architecture on the house of qajar period in tabriz (study case amir nezam house) also Amir Nezam house, Iranian Islamic architecture.

Considering many old buildings around the world, it is noticeable that there are reasonable relationships between the human way of life and the architecture of the place. The internal form or structure is an organic combination into an integral whole - an architectural object - of the inner, enclosing and outer space. The interior space of the architectural object is its soul, is formed by a function, is evaluated by use. The space protecting the architectural object is its physical body, it is formed by the construction, it is evaluated durably The outer space of the architectural object determines its spirit, is formed by context, is estimated by beauty.

Keywords: Iranian history and culture,architecture, design, Amir Nezam House,Residential buildings.

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INTRODUCTION:

This essay is an attempt to discover the place of residential houses in Iranian history andculture. As a place where they spend a significant amount of time there, should be able tofulfill their needs physically and spiritually as well as satisfying their cultural and religiousaspects of their lifestyles.

By looking at many old buildings around the world, it is noticeable that there are reasonable relations between human lifestyle and the architecture of the place. As Alexander, who is the writer of architectural books about identity of places, has mentioned: The identity of old buildings come from each of their parts being united with their environment and, can recognize the forces around it and obeys the principle of environment and human nature. [1]

Eastern art is based on spirituality. It pays more attention to traditions,

which has been formed by the people of society.[2]Iranian traditional art can perform functionally in such a way that aims to console the human soul. [3]

While architecture attempts to create an environment that suits particular aspects of human life, which respects his believes and personal ambitions, his thoughts and high spiritedness [4]

In addition to the importance of spiritual issues in architecture, Islamic architects has considered climate and environment as one the most important factors that generates a correlation between the spiritual demands of the inhabitants, the environment and the climate, and applied these factors to create a formal form. [5]

Tabriz is one of the most significant historical cities of Iran with a history datingback to the pre-Islamic period.[6]

The ancient city of Tabriz is located at latitude 38?8? N and at longitude 46?17? E. The area of Tabriz is about 1650 square kilometers. It is 619 km from west of Tehran - the capital of Iran - in North- West of Iran [7]Cold weather is the main climatic problem in this city. Therefore, the major concerns for the traditional builders of these high latitudes were to create a warm and comfortable environment for human activities.At the beginning of the rule of the Qajar dynasty, Tabriz became the second capital of Iran and was established as the formal settlement for the crown princess of this dynastyIn order to create a harmony within this climate condition, the vernacular architect has implemented some strategies in response to such weather, while basing his designs on environmental concernsand the sustainable interaction between the human and the environment is observed.

The technique that Iranian architects have used in house construction has taken advantage of the climate and is in harmony with climate conditions in each region. Traditional Iranian houses in vernacular architecture show that the people have been developing their homes based on climatic comfort in a variety of climatic conditions. An appreciation of the architecture of in each region and period necessitates an awareness of its subtle correspondence with its respective climate. [8]

Amir Nezam House:

The construction date of the structure is Qajar period. It consists of an exterior and an interior courtyard. The interior courtyard is in the eastern front with a brick arch. The western part has two stories. It ground floor has several nested rooms. The central building has two floors and in its south facade is located a high veranda whose central ceiling has Santouriand plaster decorations.(Fig. 1)

The central part of this edifice also has two floors and a high ivan supported by sixteen columns with

stone capitals and a pediment decorated with stucco-work. Access to the ground floor is provided by means of two staircases located on both sides. A reception hall with lattice sash windows with stained glass is situated in the central part of this floor and two traverses located on its sides lead to lateral rooms Access to the basement is through two main stairways and a traverse. The vaulted basementhouses a large pool room in the middle with brickwork decoration and stone columns The restoration of this building is now complete. [9]

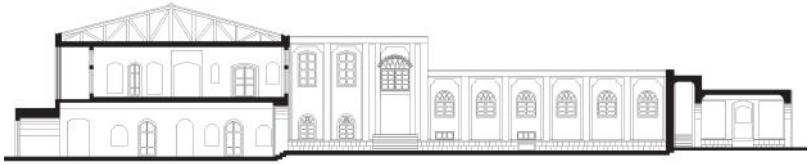
(Fig. 1), Amir Nezam House, Iran, Tabriz

1. Condensed Urban Fabric:

The urban fabric in Tabriz was compacted and spaces were enclosed. Because,

this compacted spaces was utilized for buildings to keep the heat in the winter time.(Fig. 2) Moreover, spaces would be protected against the winter winds. Buildings forms in this city were also designed according to the cold climatic conditions. Therefore, building form in Tabriz had the following characteristics:

1. Buildings were adjoined buildings
2. Buildings were inward oriented and had a central courtyard
3. Low ceiling
4. Flat roofs for houses
5. Small or no verandas
6. Thick masonry walls [8]



(Fig. 2) Section, Amir Nezam house, designed according to the cold climatic conditions

2. Intervention:

it from the moral point of view including meanings that have a tendency toinner feelings and avoid from showing them. Facades have been presented in Iranian Islamicarchitecture at very modest level? however the interior has been decorated in anelegance way. (Fig. 3) Here, this can be called as anintrovert architecture. [10]This types ofarchitecture has applied in many residential houses where there isn't any direct connectionor openings between interior and exterior spaces. By creating some openings in interiorspaces, it opens the spaces into a private environment that will be explained fully laterprivacy can be achieved by various external design interventions, such as the location and design of entrance doors, the placement and sizes of windows and openings, the control of building heights and balconies, and the incorporation of internal courtyards and gendered spaces

(Fig. 3), Amir Nezam house, Decorated interior facades

3.Vernacular materials:

In Tabriz they use the material with highquality thermal capacity. Moreover, residents in such a cool climate attempt to protect the buildings from cold winds and also keep the thermal heath inside of the buildings.

Walls absorb the heath form the sun radiation during a day and they preserve the heat till the night time. Consequently, thickness of the wall and fewer openingsprevent the exchanging of the heat bet ween inside and outside of the buildings.

Traditional builders in this region used the local materials, which were available and accessible. Therefore, most of the walls are made by stone and also they use wood and thatch for covering the ceiling and roofs. [11]

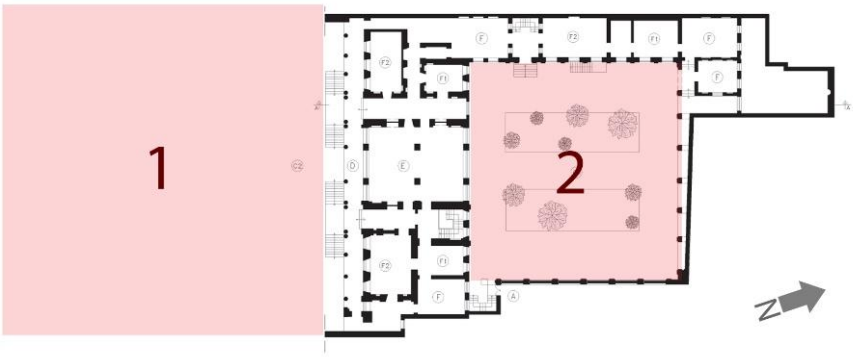
4.Courtyard:

In extroverted houses the courtyard runs all around the building on four sides. In general during this era, courtyards are four-sided in shape and lie vertical to the constructed parts of the building on

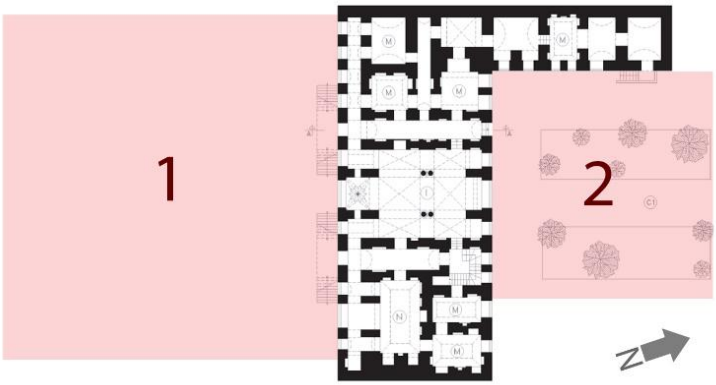
one or two sides.The other sides border plain walls or blind arcades. They lie at a lower level than the entrance and this level difference is bridged by a number of steps or through a platform and steps.A central pool is located in the middle of the courtyard around which flower beds are placed. [9]

Courtyards are the main core of social gathering in Iranian culture. It provides outdoor activity and privacy. A family can get together in the evenings and water the gardens and enjoy the small environment and beauty provided inside their house in a private and comfortable atmosphere. Courtyard gives life to buildings in a dry climate and few greenery. Water in the courtyard not only smooth the air but also creates a good perspective. [12]Sound of water coming from water work and the reflection of light on it can all add a dynamic quality to the space, while water and light are two aesthetical parameters in Islamic architecture.[13]

Amir Nezam house consists of two courtyards, private and public, of which the former is located to the north of the complex with its frontdoor opening to the alley on the eastern side. The eastern part of the private courtyard is decorated with brickwork blind arcades.(fig. 4,5)



(fig. 4), Ground floor plan,1- public courtyard 2-private courtyard



(fig. 5), Basement plan, 1- public courtyard 2-private courtyard

5.Orientation and Seasonal Function:

Generally in cold climates and high latitudes where the weather is usually cold, the building should be in a direction that receives maximum sunlight throughout the year. On the other hand, in warmer areas and in low latitudes, the building should be in a direction that is exposed to minimum sunlight throughout the year. To determine the most suitable direction for building in different geographic widths, Olgyay studied the intensity of sunlight on vertical surfaces in different geographical directions and different seasons and times. He measured the radiated energy on the vertical surface with difference of 30 degrees around a circle and recorded in the table. According to this test, the building optimum direction in the cold climate of mountainous areas is as shown in Figure 6. [14]

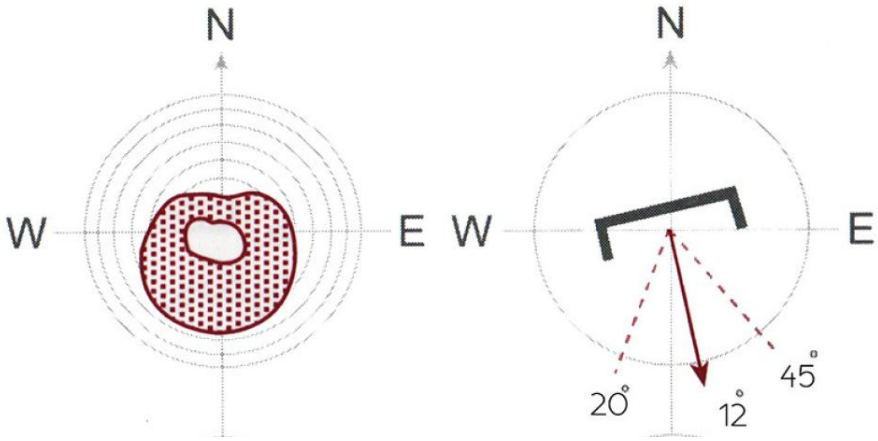
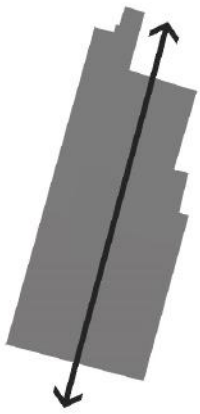


Figure 6. Building optimum direction in cold and mountainous climate of Tabriz

In Tabriz city, the main parts of the buildings were constructed on the north

direction of the courtyard. In so doing the rooms, which are located on the north canget a lot of benefit from sun radiation. Furthermore rooms, which are not

significant,situated on the east and west directions.[10]



(fig. 7), Amir Nezam house direction

6.Privacy and Hospitality:

The concepts of privacy and hospitality have had a great impact on home culture and house formation in Iranian Islamic architecture.[15]Theentrance and the main spaces of the houses were not directly vision because of the Islamic culture.

Iranian family both needs to have privacy as wellas social contact with neighbors'. In order to achieve this aim, the hierarchy of spaces starts with a public space and it continued with a semi-public space, semi-private and at last a private space. Spatial configuration to manage this divided the whole house into spaces withdifferent characteristics such as the entrance, the exterior (guest room) and the interior (private rooms). In Iranian houses the entrance were extremely important and sequences as well. The intention of the entrance was to block direct sight to the interior. Vestibule or "Hashti" was designed as a stopping point and could be used as a temporary reception room for those who did not need to enter the quest room.reception area or exteriorroom is a part of the house into which male guests can enter.[16] This room is a main space in house where has been well decorated.[17] at the same time marks the economic condition of the family. This room is situated in the main ax of the yard and has the best view to the courtyard with double height ceiling. Its interior is the most private part of the house where it has been designed in a way that should not be seen or accessible by guests. As walking from the entrance towards the interior spaces, there are usually two different corridors; first one is facing to the exterior part and the second one, which is usually longer curvy, facing to the interior part. This pattern of spatial configuration is by no means accidental, it is a carefully considered response to balance needed relation between hospitality and social contact as well as providing privacy throughout the house.

Conclusion:

Residential buildings in Iranian Islamic architecture have been designed based on culture, religion, traditions and in response to climate and environment of each region and lifestyle. This architecture could create forms which is able to generate a correlation between these parameters. Old residential houses in Iran despite of having a simple outer shell or facade, they were providing a complex inner shell in order to create an elegance and comfortable atmosphere for its residence. In spite of the rich history of Iranian Islamic architecture of traditional houses, today residential buildings are not designed as carefully as before. They are mostly designed by focusing more on its appearance or its outer shell rather thancreating a complex and comfortable interior. As lifestyle in Iran has been changed quite fast recently. this has evoked new demands. It is the responsibility of contemporary architects to realize

them and achieve a comprehensive understanding of these needs in order to be able to response to the new conditions. They can design spaces and create forms adapted to the new lifestyle and be able to satisfy these requirements. Studying of history of architecture in residential houses in Iran can introduce a new path to architects that how those traditional houses could find suitable responses to people's demands at that time and lead them to create a better architecture appropriate for this period of time.

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DIRECTOR DUTIES: UZBEKISTAN PERSPECTIVE

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Abstract: This article examines the main duties of directors. The author is concerned with the problematic aspects of the legislation of the Republic of Uzbekistan in which there are ambiguities that in the end cause difficulties in assessing the actions of the directors of companies and bringing them to justice.

Key words: Director duties, Good faith, Reasonableness, The interests of the company, Affiliates, Limited Liability Company, Joint stockcompany, Company directorship.

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The aim of this paper is to analyse the duties of the directors under Uzbekistan company law. This paper is unique in exploring this issue for the first time in English language. Traditionally, Uzbekistan company law is accessible to those scholars who can command in Russian or Uzbek languages only (which are the dominant languages of the laws and scholarly articles in the country). We hope that our analysis in English here will pave the way for future discussions from overseas scholars and thereby contribute to different points of view and experience sharing with regard to company directorship.

In Uzbekistan, the most common company types (in local legalese - 'organizational and legal forms') are (a) the limited liability companies (LLC) and (b) joint stock companies (JSC), and among the two forms, LLC prevails by quantity. There are several reasons for the popularity of these two forms, in particular, the separate legal personality of the company from its shareholders, the limited liability for shareholders, as well as separation of ownership and control (as

shareholders can delegate the company's management to professional directors). Therefore, our analysis in this paper primarily focuses on director duties in limited liability companies and joint-stock companies.

Before starting the discussion, it would be useful to briefly define the terms commonly used in the discussion. By 'duties of a director" here we mean a set of statutory obligations which a director owes to the company in which the person holds a directorship. We aim at analysing the two key aspects: (i) the existence of director duties and the extent to which they apply, and (ii) the director's liability for failure to comply with the duties. We believe that these two issues are important for efficient functioning of companies which enjoy limited liability by virtue of the law. We believe that it is in the interest of the general public to ensure that the limited liability granted to companies are not misused by persons who run the company (ie directors).

A company can be viewed as a vehicle for capital investment into a specific business activity. In order to ensure the success of the business activities, shareholders appoint professional managers into supervisory boards and executive boards of their companies. In this paper, we refer to those professionals as directors. Shareholders are interested in management of their investments by professionals, who would help to maximize the return on their investments. In return, shareholders are ready to trust their investments into the hands of directors, and expect from them due loyalty and care in managing their assets.

The issue of damages caused to company by their directors was earlier raised by other authors. In particular, in order to improve legislation, one of the Uzbek judges proposed to reveal the content of the principles "good faith" and "reasonableness" referred to in article 42 of the Law on Limited Liability Companies[1]. It must be noted that the principles of "good faith" and "reasonableness" are also provided under Article 45 of the Civil Code of Uzbekistan. It stipulates that a person who by virtue of law or constituent documents of a legal entity acts on its behalf must act in the interests of the legal person he represents in good faith and reasonably. A person is obliged at the request of the founders of the legal entity, since otherwise is not provided by law or by the contract, to compensate losses caused to them by the legal entity.

1 Statutory director duties

As Uzbekistan is a civil law country, one should primarily look for director duties in the legislation passed by the Parliament. Statutory director duties are established by Civil Code, the Law on LLC[2] and the Law on JSC[3].

Article 45 of the Civil Code provides that "A person who, by

virtue of the law or the constituent documents of a legal entity, acts on its behalf must act in the interest of the legal person in good faith and reasonably."

Article 81 of the Law on JSC provides as follows: "Members of the Supervisory Board, the Director and Board members of the company, as well as a trustee shall act in the company's interest and shall bear due liability in exercising their rights and fulfilling their duties."

Article 42 of the Law on LLC envisages that "Members of the Supervisory Board, the company's sole executive body, members of the company's collective executive body shall act in the interests of the company in good faith and reasonably in exercising their rights and fulfilling their duties."

These articles set out three main obligations of directors under Uzbek company law: (a) duty to act in the interest of the company, (b) duty to act in good faith and (c) duty to act reasonably. Below we look at each one by one.

1.1 A duty to act in the interest of the company

We understand the duty to "act in the interest of the company" as requiring directors (a) to consider the interests of the company in all their decisions and (b) to prioritize the company's interests whenever a conflict arises between the interests of the company and other persons.

There is no clear mechanism of how this duty should apply to director activities. However, some of the examples can be found in the corporate legislation.

1.1.1 Transactions with affiliates

A good example is the regulation of transactions with affiliates. The corporate legislation provides for detailed mechanisms for avoiding self-interest transactions or transactions with affiliates - an example where a conflict of interest may exist[4]. Below we look at the mechanism put in place for LLCs and JSCs.

1.1.1.1 Transactions with affiliates in LLCs

Definition of "an affiliate". The following persons are recognized as affiliated persons of the company:[5]

a) Members of the supervisory and executive board;

b) Shareholders holding 20 or more percent of the total number of votes in the company;

c) Spouses, parents, children, siblings and affiliates of the persons in (a) and (b) above. The law does not define what 'affiliates' mean in this statement;

d) A legal entity whose 20 or more percent of shares are owned (individually or jointly) by the persons in (a), (b) or (c) above;

e) A legal entity in whose governance bodies the persons in (a), (b) or (c) above hold an office.

Definition of "a transaction with affiliates". The following transactions are recognized as transactions with affiliates:[6]

a) where an affiliate is a party to the transaction or is representing a third person in the transactions;

b) other transactions prescribed in the company's articles of association.

Based on the above definitions, we can conclude that the Law on LLC uses the following two criteria in regulating transactions with affiliates: (i) control and (ii) representation. Control criterion, in its turn, is based on (a) ownership of at least 20 percent of company votes and (b) governance of the company.

1.1.1.2 Transactions with affiliates in JSC

Definition of "an affiliate". The following persons are recognized as affiliated persons of the company:[7]

a) corporate shareholder (including its trustee and representative) holding 20 percent or more of the shares in the company;

b) individual shareholder (including its trustee and representative) who individually or jointly with close relatives holds 20 percent or more of the shares in the company;

c) members of the supervisory and executive board;

d) a legal entity whose 20 percent or more of shares belongs to the company (including its trustee and representative);

e) a legal entity that is a subsidiary of the company or a subsidiary of the same company, which is a subsidiary of the company;

f) a legal entity, 20 or more percent of shares are owned by a person (including its trustee and representative) who also owns twenty percent or more of shares of the company;

g) a legal entity whose supervisory board's at least one-third of the members is made up of those same persons and their close relatives, who are not less than one third of the Supervisory Board of the company;

h) a legal entity whose executive body is headed by an individual or his close relatives who is a director or member of the board in the company;

i) a legal entity whose head or a member of the executive body holds together with his close relative constitutes not less than one-third of the supervisory board of the company;

j) the legal entity in which a person with his close relatives constitutes at least one-third of the members of the supervisory board and at the same time is a director or a member of board of directors of the company;

k) a legal entity in the same companies association with the company.

The following persons are recognized as affiliates of the individual shareholder who is an affiliated person of the company:

a) a legal person whose 20 or more percent of the authorized capital is owned by the individual shareholder (including its trustee and representative) and (or) his close relatives;

b) a legal entity in which the

individual shareholder or his close relatives are members of the Supervisory Board;

c) a legal entity in which the individual shareholder or his close relatives exercise the powers of the executive body members.

Compared to the definition of and 'affiliate' for LLCs, the scope of coverage for JSCs is much broader. We believe this could be explained by a number of factors, including the fact that JSC's shares can be publicly traded.

Similarly to the approach in LLCs, the Law on JSC uses the "control" criterion in regulating transactions with affiliate, but does not include "representation" as an assessment element. In the same manner, control criterion, in its turn, is based on (a) ownership of at least 20 percent shares and (b) governance.

Definition of "a transaction with affiliates". The transactions with affiliates are defined as a transaction where an affiliate is a party to it.

1.1.1.3 Conclusion on affiliated transactions

We suggest that this regulation of transactions with affiliates can be considered as the director's duty to disclose a conflict of interest. This duty an ex ante mechanism putting in place preventative measures. The duty requires directors to disclose the following information:

a) about companies where affiliates have control (in line with 'control test' suggested here);

b) about current or future transactions which might be recognized as 'transactions with affiliates'.

We believe that the legislator uses share ownership and governance as 'control' tests based on the authority to make decisions or at least influence such decision making in the company. Thus, we could suggest that a person who can make decisions or at least influence such decision making in the company is affiliated with the company and there is a need to put in place measures to prevent conflicts of interest by such affiliated persons. We propose that this need to prevent conflicts of interest is based on the general principle that directors should act 'in the interests of the company'.

1.1.2 To whom the director duties are owed?

At the same time, this duty clarifies to whom the directors owe their duties. The law requires director to act in the interest of the company, and not the interest of the company's shareholders per se. We suggest that directors are obliged to prioritize the interests of the company over the interests of shareholders. Unfortunately, the law does not clarify what would be in the interest of the company.

In order to clarify the essence of the interests of the company, it is recommended to consider the main purpose of the company which is the extraction of profit. It is also necessary to take into account the relevant provisions of the constituent documents and decisions of the

bodies of the company (for example, on determining priority areas of its activities, approving strategies and business plans, etc.). The director cannot be recognized acting in the interests of the company if he acted in the interests of one or more of its shareholders, but to the detriment of the company.

1.2 A duty to act reasonably

The law requires directors to act reasonably, and it is necessary to establish the meaning of 'reasonableness' in this context. Unfortunately, the law does not define what 'reasonableness' mean and we will need to seek for its interpretation from other sources.

In the absence of legal definition, we explore the literal meaning of the word 'reasonable' given in the dictionary of Uzbek language. Literally, 'reasonable' means 'as wise people do', 'with reasoning'[8]. These literal meanings suggest that a director should act as other 'wise people would do' 'with reasoning' in the similar circumstances, we believe this might refer to the need to assess director's actions against what other reasonable director would do. Such assessment, it seems to us, requires calling the skill, knowledge and experience into attention for the purposes of determining director's reasonableness. If our suggestion is correct, then it also means that there should be a minimum set of skill, knowledge and experience which would be required for directors to meet when exercising their powers. It is not clear whether this assessment should be objective (i.e. against an ordinary director) or subjective (i.e. against a director with similar/same skills and experience).

Principle of reasonableness in relation to directors should be understood as a duty of the Director to be sufficiently informed, skilled and experienced before making a decision that will allow the director to act "reasonably", "as wise people would do" in certain circumstances. At the same time, awareness may vary depending on the particular situation and this should be taken into account in the legal assessment of the "reasonableness" of director's action. For example, business decisions can be taken without sufficient information in case of emergency, in the event of delay in collecting information, or where the cost of collecting information may be high for the company. Therefore, some authors suggest to legislate that the failure to obtain the information necessary and sufficient, in the particular circumstances, for a decision-making as a criterion for breach of director's duty to act reasonably.

We caution that the assessment of director's reasonableness should not go into the assessment of directors business judgments. We believe that assessing the contents of director's decisions is overly burdensome and inefficient.

Commentary to the Civil Code suggests that "reasonableness" is the person's awareness of legality of his/

her conduct[9]. Unfortunately, the Commentary does not further elaborate on this interpretation and it is not clear why 'legality' is a decisive criterion for establishing 'reasonableness'.

In the absence of legislative clarification, judicial practice could prove a useful tool in understand the duty to act reasonably. Unfortunately, the number of judicial decisions publicly available is rather limited and we have been unable to further explore.

1.3 Duty to act in good faith

Similar to 'reasonableness', the law does not provide the definition of 'good faith' meaning.

Literally, 'good faith' means 'without deceiving someone", "righteous", "honest" in the dictionary of Uzbek language[10]. These literal meanings suggest that a director should act righteously, honestly and without deceiving others, i.e. refers to director's behaviour. Based on the moral nature of the term, the definition of "good faith" is very difficult.

On the other hand, some authors suggest establishing criteria for misconduct[11]. In their view, such a list must be open and leave the possibility for judicial discretion. We also support this approach, which would take into account the particularities of each situation and increase the flexibility of enforcement to the legitimate needs of business.

Having considered the experience of different countries (United Kingdom, United States, South Korea, etc.), some authors identified the following main breaches of the duty to act in good faith:[12]

- entering into a transaction with a direct or indirect conflict of interest without proper disclosure or approval;
- intentionally or knowingly (knowing) corporate violation (for example, the convening of the annual or extraordinary general meeting, denying the approval of the annual report of the company) or other legislation (e.g., violation of antitrust law or environmental law in the manufacturing), including cases in which such violation is aimed at obtaining a benefit for the company;
- intentional acts or omissions with the knowledge that they are against to the interests of the company;
- intentionally or knowingly gross dereliction of duty to society (e.g., repeated absences from the meetings of the Supervisory Board or of the Board without reasonable excuse; repeated refusal to accept decisions on issues that should address the Supervisory Board or the Management Board; intentional or deliberate breach of duties under the corporate laws, including the breach of the duty to act reasonably and in the public interest; breach of the duty of disclosure of information on transactions with interest);
- profit from use of business (commercial) capabilities, which

also could be profitably used by the company. Responsibility should occur in cases where there are reasonable grounds for believing that society itself was interested in this opportunity. However, no liability should be incurred when the commercial opportunity was disclosed to the company and members of the Supervisory Board, have no conflict of interest, gave consent to the use of specified features.

In the absence of legislative clarification, judicial practice could prove a useful tool in understand the duty to act in good faith. Unfortunately, the number of judicial decisions publicly available is rather limited and we have been unable to further explore.

2 Liability for breach of director duties

We suggest that failure to comply with at least one of the above three duties should be sufficient to justify recognition of director's action as unlawful and guilty[13]. Here we explore the liability of directors for breach of their duties. We believe that remedies should be efficient enough to restore the wrong done to the company (as directors owe their duties to the company).

We propose to group the remedies available to the followings:

a) Corporate remedies. This group includes the remedies available under corporate law. For example, the laws on LLC and JSC empower general meeting of shareholders to early terminate the authorities of a director. This is an efficient remedy for shareholders to

b) Contractual remedies. Under Uzbek law, directors are also generally regarded as employees and therefore every director has an employment agreement concluded with the company. These employment agreements may also, to a limited extent, provide for contractual remedies to the company in case breach of the director duties.

c) Civil remedies. This group includes the remedies available under Civil code and other civil legislation of Uzbekistan.

d) Public law remedies. This group includes the remedies available under administrative and criminal laws. We suggest that these remedies should be minimum enough to protect the interests of the general public. For example, directors may be disqualified for up two five years if they commit a criminal offence of hiding company's bankruptcy.[14]

We intend to analyse each group of remedies in forthcoming research articles.

3 Conclusion

Corporate laws of Uzbekistan establishes three main duties of a director of a company, namely, (i) a duty to act in the interests of the company, (ii) a duty to act in good faith and (iii) a duty to act reasonably.

The first duty requires director to prioritize the interests of the company over their personal,

shareholders, and of third persons. This duty also requires directors to avoid conflicts of interest. We suggest this duty has more legal certainty.

The other two duties are based on the principles of "good faith" and "reasonableness" and lack clear definitions. Literal interpretation suggest that "good faith" requires honesty in director's behaviour. "Reasonableness", by literal meaning, requires directors to act "based on reason", "as other wise people would do" and expects a director to have a minimum set of skill, knowledge and experience.

The authors here propose a need for legislative or judicial initiative for clarification for assessment of good faith and reasonableness expected from directors. Such clarification would increase the legal certainty of corporate legislation, allowing potential investors and owners to crystallize what the law allows them to expect from their directors, who will be managing for them their property invested into the company. For directors this clarification will also give legal certainty in terms of their liability for business decisions that they make.

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CONSTRUCTIVIST TEACHING STRATEGIES: PARADIGM SHIFT FOR EFFECTIVE TEACHING AND LEARNING IN SENIOR SECONDARY SCHOOLS IN NIGERIA

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Abstract: Over the years many teaching strategies have been proposed by various educators to improve learning of all students, but not any of these proposed teaching strategies meet the needs of all students at the same time. Constructivism represents one of the biggest ideas in education and its implications for how teachers teach, and learn to teach, to meet the need of all students. Constructivist teaching helps teachers to draw on new ideas as they make decisions about which teaching techniques are most appropriate for all students to learn. The theory suggests that humans construct knowledge and meaning from their experiences. If efforts in reforming education for all students are to succeed, then focus must be made on students. A focus on student-centered learning is the most important contribution of constructivism. This paper therefore, discussed constructivist teaching strategies for effective teaching and learning, and conceptual understanding of the theory, as well as teaching goals of constructivist learning environments and benefits of constructivism were outlined using descriptive design of naturalistic observation and both primary and secondary sources of information was used.Furthermore, principles of constructivism and several implications of constructivism for teaching and learning were reviewed. The study therefore, concluded that teachers need to reflect on their practice in order to apply these ideas to their work and that constructivist teachers encourage students to constantly assess how the activity is helping them gain understanding as higher achievement and interest could be achieved. The study therefore recommended that, teachers should adopt constructivist teaching method for effective teaching and learning in order to produce functional students who could effectively exploit their environment by adequate acquiring the necessary skills that will enable them fit into the society.

Keywords: Constructivism, Teaching strategies, Teaching and Learning

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INTRODUCTION

Teaching is a process of passing knowledge, skills and information from an authority to persons with little or no idea of the subject matter. Molagun & Taiwo (2004) see teaching as a systematic process of transmitting knowledge, attitude and skills in accordance with professional principles. Therefore, teaching is a process to cause or help the students/learner to learn about a subject. Teaching brings about learning on the path of the learner, so learning can be seen as a lifelong process of transferring information and experiences into knowledge, skills, behaviour and attitude. Teaching and learning is a cooperative effort, requiring engagement on the parts of both the students and the teachers. Therefore, the teaching and learning process can only be effective if all the factors that affect learning are given adequate attention. Factors such as student characteristics, the teacher characteristics and the learning environment need to be put into consideration during teaching and learning processes so as to enhance expected achievement form the students.

The teacher characteristics play a major role in the achievement of students in a particular subject area. The students' interest and subsequently their achievement are determined by the teacher's quality. The teachers' quality here includes; the knowledge of the subject matter, the organisation of learning experiences, personal characteristics and most importantly familiarity with different teaching methods. The knowledge of the subject matter is not enough for a teacher to be considered as being effective but the organisation of learning experience alongside the ability to employ the best and adequate teaching methods in delivering the learning experiences to the students. A growing body of research such a Center for Public Education (2014) has shown that students are more highly influenced by their teachers' quality. It indicated that the achievement gap between students taught by effective teachers and those taught with least effective teacher is very wide. This suggests that the most significant gain in student's achievement will likely be realised when students receive teaching from good teachers.

Recognizing individual differences of the learners is a basic concept a teacher needs to prepare to teach, it is a fundamental assumption of strategic teaching and learning that what we choose to teach in the classroom should be an interaction of what we know about the variables of instruction, learning, achievement, and contextual factors. This assumption drives the quest to develop an instructional framework. Rosenshine and Frust cited in Bada (2015) reported that students learn best when the following characteristics are present: variability in teaching methods and materials, interest, clarity, task-oriented behaviour, teacher use of structuring

comments, student opportunity to learn the material, multiple levels of questions, and enthusiasm. Yelon (1996) promoted the ten powerful instructional principles that he believed excellent teachers apply which are: meaningfulness, prerequisites, open communication, organized essential ideas, learning aids, novelty, modelling, active appropriate practice, pleasant conditions and consequences, and consistency.

Furthermore the learner's power to think and solve problems should be a component of a well designed instructional strategy and its effectiveness. According to Dyer and Osborne cited in Basil (2015), the learner's problem solving ability can be accelerated with the use of appropriate instructional approaches. Also Nwafor cited in Bada (2015) explained that the new wave of changes is changing the educational goals to not just equipping the learner with basic knowledge, skills and values but with higher cognitive skills such as problem solving and thinking, that will enable the learner to adapt freely in a rapidly changing world.

An important restriction of education is that teachers cannot simply transmit knowledge to students, but students need to actively construct knowledge in their own minds. That is, they need to discover and transform information, check new information against old, and revise rules when they do notlonger apply. This constructivist view of learning considers the learner as an active agent in the process of knowledge acquisition. Constructivism is a learning theory found in psychology which explains how people might acquire knowledge and learn. Constructivist teaching is based on constructivism learning theory and it has direct application to education. Therefore, the word constructivist and constructivism will be used interchangeably. The theory suggests that humans construct knowledge and meaning from their experiences.

Constructivism is a kind of learning strategy that lays emphasis on active role of learners in the process of constructing their own knowledge. Constructivism according to Fosnot (1996) is the concept that learners actively construct their own knowledge and meaning from their experiences. Students do not reinvent the wheel but, rather, attempt to understand how it turns, and how it functions, this is evident in different subject areas in which no subject is no exception.

Teachers constantly search for new strategies to help them understand and connect to their past or present experiences. Constructivism is a teaching model essentially, it is a model or metaphor of how people learn or how learning takes place (Glasersfeld, 1989; Cobern, 1995). It justifies the putting together of new ideas by interpreting new experiences in light of prior knowledge so that the new ideas come to make sense to the learner

(Cobern, 1995). The strengths of constructivism lie in the construction of knowledge and what that means for students and teachers. Since knowledge cannot be transferred from one individual to another like a commodity, the role of the teacher as knowledge giver in the classroom becomes moot. Constructivist teaching is based on constructivist learning theory. This theoretical framework holds that learning is always built upon knowledge that a student already has; this prior knowledge is called a schema, all learning is filtered through pre-existing schemata, constructivists suggest that learning is more effective when a student is actively engaged in the learning process rather than attempting to receive knowledge passively

One of the primary goals of using constructivist teaching method in teaching financial accounting is that students learn how to learn by giving them the training to take initiative for their own learning experiences.

In the constructivist classroom, the teacher's role is to prompt and facilitate discussion. Thus, the teacher's main focus should be on guiding students by asking questions that will lead them to develop their own conclusions on the subject.

The lecture method on the other hand, is a method of teaching in which the teacher delivers the lesson to student with little or no active participation of the students. It is a teacher-centred approach involving largely a one-way form of communication from the teacher to the students. For this reason, it is termed instructive approach because most of the talking is carried out by the teacher while the students remain passive listeners, taking down notes. At secondary school level, there is strong objection to the exclusive use of the lecture method in teaching some subjects including Financial Accounting.

Difference between a Non-Constructivist Classroom and Constructivist Classroom

In the constructivist classroom, the teaching and learning focus shift from the teacher to the students. The classroom is no longer a place where the teacher ("expert") pours knowledge into passive students, who wait just to be receivers of knowledge. In the constructivist model, the students are urged to be actively involved in their own process of learning. The teacher functions more as a guide who coaches, mediates, prompts, and helps students develop and have access to their understanding, and thereby their learning. In the constructivist classroom, both teacher and students think of knowledge not as inert factoids to be memorized, but as a dynamic, ever-changing view of the world we live in and the ability to successfully stretch and explore that view. The chart in table 1 compares the non-constructivist classroom with the constructivist classroom. One can see significant differences in basic assumptions about knowledge, students, and learning.

Table 1: Difference between Non-constructivist classroom and Constructivist classroom

Non-Constructivist Classroom	Constructivist Classroom
Curriculum begins with the parts of the whole. Emphasizes basic skills.	Curriculum emphasizes big concepts, from the whole and expanding to include the parts.
Strict adherence to fixed curriculum is highly valued.	Pursuit of student questions and interests is valued.
Materials are primarily textbooks and workbooks.	Materials include primary sources of material and manipulative materials.
Teacher's role is directive, rooted in authority.	Teacher's role is interactive, instructor, rooted in negotiation and focus on student.
Learning is based on repetition.	Learning is interactive, building on what the student already knows.
Teachers disseminate information to students; students are recipients of knowledge.	Teachers have a dialogue with students, helping students construct their own knowledge.
Assessment is through testing, correct answers.	Assessment includes student works, observations, and points of view, as well as tests. Process is as important as product.
Instructor evaluate student learning.	Student evaluates their own learning; instructor also evaluates.
Knowledge is seen as inert.	Knowledge is seen as dynamic, ever changing with our experiences.
Students work primarily alone.	Students work primarily in groups, pair or alone depending on the purpose of the activity.

Source: Adopted from Brooks and Brooks (1993)

The student is always active if the central focus of learning is that knowledge is constructed by individual learners; therefore, instruction must be student-centred.

Basic characteristics of Constructivist Learning Environments

One of the primary goals of using constructivist teaching is that students learn how to learn by giving them the training to take initiative for their own learning experiences. According to Audrey Gray cited in Basil (2015) the characteristics of a constructivist classroom include:

1. the learners are actively involved
2. the environment is democratic
3. the activities are interactive and student-centered
4. the teacher facilitates a process of learning in which students are encouraged to be responsible and autonomous .

Tam (2000) lists four basic characteristics of constructivist learning environments, which must be considered when implementing constructivist instructional strategies:

1) Knowledge will be shared between teachers and students.

2) Teachers and students will share authority.

3) The teacher's role is one of a facilitator or guide.

4) Learning groups will consist of small numbers of heterogeneous students.

Goals of Constructivist Learning Environments

Honebein (1996) summarizes what he describes as the seven pedagogical goals of constructivist learning environments as:

1) To provide experience with the knowledge construction process (students determine how they will learn).

2) To provide experience in and appreciation for multiple perspectives (evaluation of alternative solutions).

3) To embed learning in realistic contexts (authentic tasks).

4) To encourage ownership and a voice in the learning process (student-centered learning).

5) To embed learning in social experience (collaboration).

6) To encourage the use of multiple modes of representation, (video, audio text, etc.)

7) To encourage awareness of the knowledge construction process (reflection, meta-cognition).

Furthermore, in the constructivist classroom, students work primarily in groups, therefore, learning is interactive and dynamic. There is great focus and emphasis on social and communication skills, as well as collaboration and exchange of ideas. This is contrary to the traditional classroom in which students work primarily alone. Learning is achieved through repetition, and the subjects are strictly adhered to and are guided by a textbook. Some activities encouraged in constructivist classrooms are:

- Experimentation: students individually perform an experiment and then come together as a class to discuss the results.

- Research projects: students research a topic and can present their findings to the class member.

- Field trips. This allows students to put the concepts and ideas discussed in class in a real-world context. Field trips would often be followed by class discussions.

- Class discussions. This technique is used in all of the methods described above. It is one of the most important distinctions of constructivist teaching methods.

Benefits of Constructivism to teaching and learning

1. Students learn more, and enjoy learning when they are actively involved, rather than passive listeners.

2. Education works best when it concentrates on thinking and understanding, rather than on rote memorization. Constructivism concentrates on learning how to think and understand.

3. Constructivist learning is transferable. In constructivist classrooms, students create organizing principles that they can take with them to other learning settings.

4. Constructivism gives students ownership of what they learn, since learning is based on students' questions and explorations, and often the students have a hand in designing the assessments as well (Natalie, 2012). Constructivist assessment engages the students' initiatives and personal investments

in their journals, research reports, physical models, and artistic representations. Engaging the creative instincts develops students' abilities to express knowledge through a variety of ways. The students are also more likely to retain and transfer the new knowledge to real life.

5. By grounding learning activities in an authentic, real-world context, constructivism stimulates and engages students. Students in constructivist classrooms learn to question things and to apply their natural curiosity to the world.

6. Constructivism promotes social and communication skills by creating a classroom environment that emphasizes collaboration and exchange of ideas. Students must learn how to articulate their ideas clearly as well as to collaborate on tasks effectively by sharing in group projects. Students must therefore exchange ideas and so must learn to "negotiate" with others and to evaluate their contributions in a socially acceptable manner. This is essential to success in the real world, since they will always be exposed to a variety of experiences in which they will have to cooperate and navigate among the ideas of others.

7. Acknowledge the social nature of learning by encouraging the interaction of the teacher with students and students with one another. (Ekpenyong and Edokpoler, 2016)

Implications of constructivism theory in teaching and learning

Constructivism is that learning which is an active process. Information may be imposed, but understanding cannot be, for it must come from within. Constructivism requires a financial accounting teacher to act as a facilitator whose main function is to help students become active participants in their learning and make meaningful connections between prior knowledge, new knowledge, and the processes involved in learning. Brooks and Brooks (1993) summarize a large segment of the literature on descriptions of "constructivist teachers". They conceive a constructivist teacher as someone who will:

- encourage and accept student autonomy and initiative; Kato and Kmaoi (2001), child becomes very autonomous refusing to be govern by reward and punishment.
- use a wide variety of materials, including raw data, primary sources, and interactive materials and encourage students to use them;
- inquire about students' understanding of concepts before sharing his/her own understanding of those concepts;
- encourage students to engage in dialogue with the teacher and with one another;
- encourage student inquiry by asking thoughtful, open-ended questions and encourage students to ask questions to each other and seek elaboration of students' initial responses;
- engage students in experiences that show contradictions to initial understandings and then encourage discussion;

- provide time for students to construct relationships and create metaphors;

- Assess students' understanding through application and performance of open-structured tasks.

Hence, from a constructivist perspective, the primary responsibility of the financial accounting teacher is to create and maintain a collaborative problem-solving environment, where students are allowed to construct their own knowledge, and the teacher acts as a facilitator and guide.

Strategies of Using Constructivist Method of Teaching and Learning

Learning through real world experiences with others allow students to grow and understand things more easily. The following are different strategies of applying constructivist teaching strategies in the classroom in order to enhance effective teaching and learning discussed by Gray Kerry (2018).

1. One of these strategies is activating prior knowledge before beginning a lesson to help prepare students to connect new information. Prior knowledge can be activated using a KWL charts; document what students 'know', 'want' to know, and have 'learned' in a learning segment. The construction of knowledge is the intentional learning process where the student links new information with prior knowledge (American Psychology Association, 2008). For effective content retention, new learning must be linked to a student's prior knowledge. (Hawley & Rollie, 2007; Vosniadou, 2007). Piaget's schema theory states activating prior knowledge before reading is essential; because according to his research when we can connect something "old" to something new it helps us better understand the new. Prior knowledge should be activated before students begin new content (Bransford et al., 2000, Gaddy et al., 2002). The following researchers have showed the importance of prior knowledge to student learning:

- Prior knowledge accounts for the largest variable in student achievement (Marzano, 2000; Wilson et al., 2006).

- Prior knowledge is the basis for all future knowledge (Marzano et al., 2000b).

- Prior knowledge "constitutes a starting point for the construction of new knowledge" (Garrison, 2004, p. 378).

- Prior knowledge can be a significant and accurate predictor of performance and facilitates new learning (Thompson & Zamboanga, 2004).

- Prior knowledge is a fundamental factor for learning new material (Myhill & Brackley, 2004).

2. Anticipation guide: Ask students questions about what they are getting ready to learn, giving them the opportunity to guess the correct answer, which engages them and helps them prepare for a new learning experience.An anticipation guide is used before reading to

activate students' prior knowledge and get students excited and curious about a new topic. Before reading, students listen to the teacher or another student state key ideas about the concepts in the text. They can also read several statements about the key concepts presented in the text. The statements are usually put in a form where student say they agree or disagree (Reading, 2015). Teacher's can assist children in developing background knowledge by: Including techniques in lessons such as chapter previews or anticipation guides.As students begin to develop a conceptual framework for their own learning and understanding, they build a repertoire of background experiences from which to draw" (Echevarri?a, Vogt, & Short, 2013). Teachers in the lesson are scaffolding and students are actively involved in discussion about each of the statements in the guide. When a teachers scaffolds for his/her students it provides them with the necessary skills and understanding to correctly complete, read, or do the lesson/activity. In this activity the teacher can model or scaffold the material at first, but remove when students start to understand (Gunning, 2012).

3. Using Mind Maps: a way of graphically organising thought. Mind maps begin with a general idea from which related information branches out, becoming increasingly more specific. The mind map as a research method was first applied in late 1970s by Novak (1998). In his concept mind maps are understood as diagrams expressing significant relations between terms in the form of statements. These are represented by links between terms which describe their mutual relations. This concept was later adapted by Ahlberg (2004). Buzan (2010) says the mind maps thus can be understood as external expressions of knowledge integrated in individual's mind. He emphasizes the mind map is not either "correct", or "incorrect", but it is always accepted in a certain context, while it could be rejected in another one. The mind maps can be used in different phases of instruction, e.g. for revising, practising and fixing the knowledge, and as a means of feedback. Novak (1998) distinguishes four ways how the mind maps can be used, i.e. as learning strategies, teaching strategies, means to forming concept and content of single subjects and the instruction as the whole, and a means of collecting information about learner's understanding of the learning content

4. Using classification strategy: Here the student begins with something specific and increasingly put into broader categories. E.g, a teacher may show students a chart of solved trading, profit and loss accounting and allow the students to figure out what are the items that makes up trading, profit and loss account. The same process is used when a student sorts objects, words

and concepts. Sorting is putting specific things or items into a broader category.

5. Compare and contrast strategy: these allow students to make connection by identifying similarities and differences. Example, the similarities and difference between subsidiary books of account and final account.

CONCLUSION

If the efforts in reforming education for all students are to succeed, then the teacher must focus on students. Educators must accept the fact that knowledge is constructed in action and must be constructed by individual knower's; instruction must be student-dominated where teachers function as facilitators. Baker & Piburn (1997) further claim that knowledge is built in social contexts; pedagogy must encourage student-to-student interactions and collaboration. It is a well-known fact that knowledge construction is strongly influenced by prior experience and learners make sense of the world by synthesizing new experiences into what they have previously come to understand in their daily life (Ultanir, 2012). What children learn is not a copy of what they observe in their immediate environments but comes from the result of their own thinking, reflection and processing information (Steele, 2005). In addition, knowledge is built in social contexts; teaching and learning processes must encourage student-to-student interactions. Furthermore, knowledge construction is strongly influenced by prior experience; students must be treated as individuals. Learning is more effective when a student is actively engaged in the learning process rather than attempting to receive knowledge passively. In a constructivist classroom environment, students work primarily in groups and learning is interactive and dynamic. There is a great focus and emphasis on social and communication skills, as well as collaboration and exchange of ideas. This is contrary to the non-constructivist classroom in which students work individually, learning is achieved through repetition, and the constructivist methods is strictly adhered to and are guided by a text book. A constructivist teacher would have his or her classroom focus on real life problem solving, problem-based learning (PBL), independent investigation, and the pursuit of personal interests, simulation, discussion collaborative learning, think-pair share, and the utilization of higher-order thinking skills. Research studies in cognition, authentic learning, and student engagement support claims that student-centered teaching is a beneficial teaching strategy for all students, including students with special needs (Brooks & Brooks, 1993; Larson & Keiper, 2007).

The constructivist method has shown to be an effective teaching method because it involves the use of the eyes, ears and the hands. It is

generally believed that what you hear, you tend to forget; what you see tends to last long in one's memory; while what you see, hear and do remains in the memory. This correlates the quote from Confucius a Chinese philosopher and reformer "What I hear and I forget. I see and I remember. I do and I understand". Researchers have shown that, if these three senses come to play in the teaching and learning process, they help the learners' retention and as such enhance academic performance. Financial accounting teachers need to reflect on their practice in order to apply these ideas to their work. This gives the student tools to keep learning and learning. With a well-planned classroom environment, the students learn how to learn and make them an expert of the subject.

RECOMMENDATIONS

The following recommendations are outlined:

1. Students, parents and teachers are part of the Every Student Succeeds Act. All teachers must be trained on the constructivist teaching methods in order to make Every Student Success Act a success. A balanced approach to these recommendations is to put the student first.

2. Constructivist teaching method should be adopted by teachers in order to produce functional students who could effectively exploit their environment by adequately acquiring the necessary vocational skills that will enable them fit into the society.

3. The government/curriculum planners should incorporate the constructivist instructional approach into the financial accounting curriculum, and the government/ school authorities should adequately train financial accounting teachers on how to use the constructivist technique by exposing them to constructivist method of teaching through workshops and seminars.

4. Administrators must equally make funding available to train teachers across all school districts and encourage the support of non-teaching staff to make constructivist teaching a reality. And comprehensive research should be carried out locally and nationally on constructivist method of teaching in secondary education in Nigeria.

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INTERNATIONAL LEGAL BASIS ON NATIONAL MACHINERIES ON WOMEN'S PROMOTION

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Abstract. The article is devoted to the national gender machineries, the history of their development, their roles and functions of national mechanisms. The author provides a brief overview of the relevant legal basis (both legally binding and soft law sources) and defines main problems the national gender machineries face worldwide such as a lack of resources and understanding of the gender issues as well as a lack of interaction with state bodies and CSO of relevance. Special attention is drawn to strengthening Women's Committee of Uzbekistan. The author proposes a number of specific measures to improve the activity of the Women's Committee of Uzbekistan.

Key words: national gender machinery, 1995 Beijing Declaration and Platform for Action, CEDAW, Women's Committee of Uzbekistan, gender, women's advancement (promotion)

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National gender machineries emerged as instruments of advancing women's interests after the World Conference of the International Women's Year in Mexico City (1975). Since then, the subject of national machineries has been taken up systematically by the subsequent world conferences on women in 1980 (Copenhagen), 1985 (Nairobi)[1] and 1995 (Beijing), as well as the various sessions of the Commission on the Status of Women.

The 1995 Beijing Declaration and Platform for Action (PFA) played a significant role in this regard. PFA adopted three strategic objectives such as:

- Create or strengthen national machineries and other governmental bodies;
- Integrate gender perspectives in legislation, public policies, programmes and projects; and
- Generate and disseminate gender-disaggregated data and information for planning and evaluation[2].

The Beijing PFA identifed institutional mechanisms for the advancement of women, including

national machineries, as one of the twelve critical areas of concern. By that time it was agreed that the gender machinery should act as a catalyst rather than an implementer[3]. The Platform provides a mandate for the national machinery for the advancement of women which includes, inter alia, "to design, promote the implementation of, execute, monitor, evaluate, advocate and mobilize support for policies that promote the advancement of women" (paragraph 196). It was noted that the necessary conditions for an effective functioning of such national machineries include:

a. Location at the highest possible level in the Government, falling under the responsibility of a Cabinet minister;

b. Institutional mechanisms or processes that facilitate, as appropriate, decentralised planning, implementation and monitoring with a view to involving non-governmental organisations and community organisations from grass-roots upwards;

c. Sufficient resources in terms of budget and professional capacity;

d. Opportunity to influence development of all government policies[4].

Other UN bodies also made a contribution to the development of the issue. In particular, in July 1997, ECOSOC adopted agreed conclusions (1997/2), which emphasized the need to enhance interaction among UN entities and national machineries for the advancement of women. It also adopted resolution E/2004/L. which reinforced the role of national machineries as key actors in the promotion of gender mainstreaming.

In 1999 **the Commission on the Status of Women (CSW)** adopted conclusions (1999/2) on the institutional mechanisms for the advancement of women. The Commission recommended that national machineries be placed at the highest possible level of government and be invested with the authority and resources needed to ful?l their mandates.

In June 2000 **a special session of the United Nations General Assembly (UNGASS)** adopted an outcome document which showed that, in many countries, 'national machineries have been instituted or strengthened and recognized as the institutional base acting as "catalysts" for promoting gender equality, gender mainstreaming and monitoring of the implementation of the Platform for Action'. However, the outcome document also revealed the existence of factors which still hindered the activities of the national machineries in many countries, including 'inadequate ?nancial and human resources, lack of political will and commitment (at the highest level), insuf?cient understanding of gender equality and mainstreaming among government structures, unclear mandates, and structural and

communication problems within and among government agencies'[5].

CEDAW Committee also reiterates in its General Recommendation No. 28 on the Core Obligations of States Parties under CEDAW that "The policy should also ensure that independent monitoring institutions, such as national human rights institutes or independent women's commissions, will be established, or that existing national institutes will receive a mandate with respect to the promotion and protection of the rights guaranteed under the Convention."

It is noteworthy to mention the contribution of the UN **Division for the Advancement of Women (DAW)**. In 1996 DAW **conducted a research on** National Mechanisms for Gender Equality in South East and Eastern Europe, Caucasus and Central Asia[6]. In the same year, the United Nations Economic and Social Commission for Asia and the Pacifc held a Regional Meeting on Strengthening National Machineries for the Advancement of Women which drafted recommendations **for Asia and the Pacifc[7]**. One of the technical cooperation activities undertaken by DAW was a project on 'Capacity Building of National Machineries for Gender Equality' in the African region[8].

Development of national gender machineries worldwide

The role, structure and functions of a national machinery have evolved over the years. Initially the machineries tended to be isolated structures within the government bureaucracy focusing on the implementation of discreet projects to promote women's advancement in different sectors. The machineries were often under-staffed and under-funded, with unclear mandates, frequent shifts in structural location and weak capacity to perform the myriad functions assigned to them.

After Beijing, national machineries were created in many countries as an integral part of the government. In countries that already had such machineries, measures have been taken to strengthen them. Many countries upgraded the status of the national machinery by making it either a full-fledged Ministry or giving it status just below a Ministry such as Vice-Ministry. Some countries created posts of deputy or full ministers in charge of women or gender affairs. An upgrade in status also occurred in several countries as a result of a strategic shift in location of the machinery to more central or powerful offices such as in the President's Office, the Prime Minister's Office or the Planning Ministry. Some countries reported making the machinery autonomous so that it could independently assess the performance of the government. A few countries continued with the NGO status of the machinery with increased function and activities.

In addition to national machineries, the majority of countries established gender focal

points in various ministries, government departments, and agencies such as those related to agriculture, education, health, but also to law, security, justice, interior, police, prisons, foreign affairs, trade and many other sectors. In some countries, parliamentary caucuses - of women parliamentarians or of male and female parliamentarians - were established which focused on gender equality in the work of parliaments. Other countries established separate gender equality or women's commissions, and a few have appointed Ombudspersons for gender equality[9]. Equal Employment Opportunity Offices were established in many countries[10]. To coordinate the activities of these different sectors and levels, many governments created special mechanisms such as an interagency commission or committee[11].

In a survey conducted by the UN Division for the Advancement of Women in 1996 it was noted that two-thirds of all national machineries are located in government, and one-third are either non-governmental or have a mixed structure. Of those within the government, more than half of the national machineries are part of a ministry, one-third are located in the of?ce of the head of state and the rest are free-standing ministries. Of those within ministries, half are situated in Ministries of Social Affairs and one-third in that of Labour[12]. Location at the top levels of government would provide the machineries with increased credibility at these forums, as well as the negotiating power to make contacts, strategic cross-border contacts and projects[13]. However, in some contexts, location at the highest level within the governmental structure that is not accountable to the citizenry can lead to the alienation of the national machinery from civil society groups[14].

Thus, examining these structures in many countries around the world shows that in practice the machineries take a wide variety of forms, from formal ministries to temporary councils and committees.

They may be established by formal statute, executive decree, or bureaucratic rules, or there may be machineries in political parties that have a widespread influence. The mandates, responsibilities and resources of these machineries vary as well[15].

However, there is no one single form that is consistently more effective generally than others. In addition, it is the variety of possible agency forms that allows machinery to adapt to blowing political winds and changing demands of gender policy and politics. At times a centrally located executive commission may be required; later, it may be a ministry or bureaucratic office; at still other times all three may coexist. In some countries, a range of single issue agencies-for labor, health, and education

matters-can be more effective than a large Ministry expected to cover all issues. In other situations, machineries may be more active at regional and local government levels[16]. The Committee of Ministers Recommendation (2007)17 also highlights the fact that there are no ideal or fixed models of institutional mechanisms within government structures valid for all countries. Economic, social, cultural and political realities differ and institutional mechanisms must fit into the national context[17].

To sum up, recent developments in the evolution of national machineries include the following organizational changes:

enhancement of mandates;

upgrading of focal points within the government structure to high levels of power;

establishment of women's bureaus/divisions in various line ministries and the creation of inter-ministerial committees and task forces;

and collaboration with non-governmental organizations (ESCAP, 13 December 2003)[18].

Roles and functions of national mechanisms

National machineries are thus 'catalysts' for promoting gender equality and justice[19]. Until the late 1980s, many NWMs had a welfarist approach focusing on women as mothers and wives[20]. In the course of time, the mandate of these national institutions has evolved from promoting women-speci?c projects to ensuring that equality concerns are integrated into all government legislation, policy, programmes and budgetary processes.

The mandate given to NWMs is crucial in defining the scope of the activities and influence and their general orientation. An important choice is whether the NWM will try to implement its own projects (and whether in doing so it will seek collaboration with other technical ministries) or whether it will simply try to influence or advise other ministries or agencies undertaking major projects[21].

A majority of the national women's machineries serve as coordinating mechanisms that formulate and recommend policy proposals and plans on women and gender concerns to their respective Governments. Their roles include the following: lead agency for initiating and coordinating governmental efforts in gender mainstreaming; planning and overall coordination of various matters related to the promotion of gender equality; formulation of policies for women's welfare and empowerment; and preparation of gender equality and women and development plans.

Several machineries serve as advisers or consultative bodies on women and gender equality.

Some machineries (such as in Brunei, Cambodia, Cook Islands, Indonesia, Nepal, Maldives, Myanmar, the Republic of Korea

and Viet Nam), act as monitoring mechanisms for harmonizing local initiatives with national development objectives.

Other machineries assist in harmonizing their Government's policies with international programmes on women (Australia, the Lao People's Democratic Republic, New Zealand, Pakistan and Singapore), or in harmonizing their Government's commitments and policies on gender and development (the Philippines and New Zealand). Some national machineries also assist in harmonizing their human rights system with international standards (Australia, the Democratic People's Republic of Korea and Pakistan).

Almost all of the machineries and mechanisms are responsible for the implementation and monitoring of programmes and services that are related to the welfare of women. These services include the following: providing financial assistance; emergency relief; protection, counselling, welfare assistance, temporary shelter, entrepreneurial assistance to victims of gender based violence and other victimized women; providing educational guidance, training and temporary shelter to women who are destitute, elderly, widowed, divorced, disabled or victims of natural disasters; and promoting legal protection for women from gender based violence, exploitation and discriminatory practices.

Some machineries engage in active partnerships and networking with civil society and nongovernmental organizations for planning and implementing programmes and policies[22]. Almost all mechanisms are responsible for the dissemination of information on existing laws, on various United Nations conventions and on agreements related to rights and gender equality.

Main problems

The outcome document adopted at the 23rd special session of the General Assembly on Beijing +5 identified a number of obstacles in this regard: in a number of countries, inadequate financial and human resources and a lack of political will and commitment are the main obstacles confronting national machineries.

This is further exacerbated by insufficient understanding of gender equality and gender mainstreaming among government structures, as well as prevailing gender stereotypes, discriminatory attitudes, competing government priorities and, in some countries, unclear mandates, a marginalized location within the national government structures, lack of data disaggregated by sex and age in many areas and insufficient applied methods for assessing progress, in addition to paucity of authority and insufficient links to civil society. The activities of the national machineries were also hindered by structural and

communication problems within and among government agencies.

Other obstacles included weak capacities of the national machineries; political instability as well as instability in the staffing of national machineries; lack of coordination between different ministries, departments and planning systems at different levels of government; lack of statistics, data and tools; shortage of specialized permanent staff in different sectors; gaps between policy and plan formulation and implementation; negative impacts of macroeconomic policies such as trade liberalization; weak monitoring and accountability structures to enforce compliance with gender equality mandates, polices and programmes; lack of public awareness about the work of various institutional mechanisms; weak support from women parliamentarians; and lack of support from civil society, particularly women's' movements.

Vaguely formulated mandates minimize the role the national mechanisms can take in policy?making and reduce the influence they may exert within the government to achieve a more profound impact.

Indicators of progress and tools for tracking these indicators were relatively

undeveloped. Lack of statistics and data was a major constraint. As discussed earlier, many of the previously established monitoring indicators need to be revisited. Some of these indicators tracked progress of various actions but not results. If outcomes are to be monitored there needs to be a better understanding of the causality between policy/ action and outcome and design of appropriate monitoring indicators.

Measures to be taken

An enabling environment for the national machineries for women is of great importance. Broadly, these include the role of the state, civil society organizations and the work of the national machineries themselves. An enabling environment, however, is also a contextualized environment.

Five elements that are critical in this regard:

1. Location [at a high level] within the decision-making hierarchy [and authority] to in?uence government policy.

2. Clarity of mandate and functional responsibility.

3. Links with civil society groups supportive of the advancement of women's rights and enhancement of women's status.

4. Human and ?nancial resources' (United Nations, 1999b). 5 Accountability of the national machinery itself[23].

The responsibility for promoting gender equality is a matter of the whole government. In terms of political level, Gender equality mechanisms should be under direct responsibility of the President, Prime Minister or Cabinet Minister and units or focal points should be

set up within ministries or other government departments or within regional and local power structures, at the highest level of those departments and structures. The international community becomes an important source of strength in some political contexts, but poses dif?cult issues of independence of machineries in others, especially where nationalist rhetoric is available to, and deployed by, the major political players.

If the NWM is to be effective, a solid constitutional and legal status is crucial, as is a policy which specifies goals and clear lines of organisational responsibility and accountability. These need to be backed by planning procedures and management support structures which can transform policy into practice[24].

In order to ensure local level implementation of gender policies and to increase accountability of service provision to women, gender units or women's committees within local goverment are required. Just as at national level, however, there is a danger of ghettoisation and under-resourcing[25].

The economic strength of the state is also important to the strength of the machinery - under-resourcing and vulnerability due to restructuring of state bodies often depend on the state of a particular economy. Gender equality institutional mechanisms should have the necessary funding and human resources. Adequate resources are a basic element for progress in gender equality. Increasing financial allocation from the national budget, earmarking a portion of the budget and increasing resource flow from international agencies is required.

The ways in which gender mainstreaming is understood and accepted as a frame of reference within particular political contexts are also critical.

Another important condition for effective functioning is the existence of adequate mandate of the institutional mechanisms both at central and at decentralised level. The mandate of institutional mechanisms should have a clear legal basis with well-defined functions and responsibilities. There is a growing evidence of decentralisation of gender equality policy, both horizontally and vertically. Involvement of the different sectors and levels of government in gender equality work has been manifested either as a reinforcement of responsibilities of the central executive power or as a creation of new structures operating at regional and local level. Gender equality units or focal points have been set up within ministries or other government departments or within regional and local power structures.

The involvement civil society, namely of women's NGOs, NGOs dealing with women's rights or human rights, and social partners tends to gain more and more importance. They are recognized as essential partners in the social

change that is the ultimate objective of gender equality policies. Civil society groups and the media can also play a significant role in mobilizing and sustaining political will. In future, greater effort needs to be made to mobilize widespread citizen support which is necessary to overcome the deeply held social and cultural obstacles to achieving gender equality and women's empowerment[26]. The pre-Beijing accountability models, which emphasized accountability of the public sector, need to be supplemented by the design of accountability measures for the private sector, civil society and transnational actors[27]. Women parliamentarians can play an important role in supporting the women's movements by piloting legislation, advocating policy reforms facilitating and sustaining the political will needed for the promotion of gender equality and women's empowerment[28].

The CEDAW Committee has often expressed its appreciation where there is a system of reporting regularly to the national/federal legislative bodies on the progress of gender equality efforts, such as an annual/biannual reporting process in some countries.

There is the need to improve the capacity of staff. The suggested areas of action included recruitment of qualified and gender sensitive staff from within government bureaucracy and infusion of outside qualified consultants; training of existing staff and gender focal points as well as training of senior management to be sensitive to gender concerns;

Supporting research, which will illuminate the gender dimensions of macro policy changes, will be an important step for the future[29].

It is of importance to improve co-ordination and collaboration among different national mechanisms. The national machineries need to improve co-ordination and collaboration with other mechanisms to improve implementation of their goals and reinforce synergies[30].

Two issues are central to the establishment and functioning of a national machinery to promote gender equality: accountability and autonomy.

Accountability is essential for national machineries. A real and permanent dialogue has to be established between the national machinery on the one hand and the various interest groups, especially women's groups, from the civil society on the other hand. If a national machinery is unwilling or unable to keep alive this dialogue with the civil society, the purpose for which it was created is no longer valid.

At the same time, the actors in charge of the national machinery have to be liberated from the stricter forms of political accountability to be able to freely intervene in discussions. Here, the second principle, autonomy, plays its role. Without autonomy there is no

flexibility and, as a consequence, practical policy -making becomes impossible.

Accountability and autonomy go hand in hand. The crucial point is to find a balance between these two principles so that the national machinery can be effective[31].

Thus, a set of potential ingredients, or "factors," for the successful operation of the NGMG includes: the legal framework (the existence of provisions on gender equality in the Constitution, special laws of gender equality, national plans and / or gender equality programs); institutional conditions (the presence of political and administrative structures in government and government responsible for the implementation of gender equality, the existence of a specialized network of gender equality bodies at the federal, regional and local levels); mechanisms to promote women in government structures (quotas, positive discrimination); a developed network of feminist organizations and open channels for the entry of feminists into power (for example, women's cocoons in parties); positive attitude to the issues of gender equality on the part of civil society structures[32].

Strengthening Women's Committee of Uzbekistan

The **Women's Committee of Uzbekistan** provides consulting services to the government on matters of policy affecting women. The Committee was created in 1991 and is a budget organization funded with State monies. The uniqueness of the national mechanism consists in the fact that the chairperson of the Women's Committee is at the same time a deputy prime minister, which gives the organization the right to coordinate the social partnership between governmental organizations and public and non-governmental organizations.

The Women's Committee of Uzbekistan initiates, coordinates, and implements governmental policy, programmes, and projects geared to improving women's status; advises the government on matters pertaining to women; and disseminates pertinent information among women and on the problems women face.

In order to maintain the rate of advancement of women, the Women's Committee of Uzbekistan focuses special attention on five priority programme areas: employment and the economic well-being of women; the safeguarding of the reproductive rights and reproductive health of women; women and their participation in the life of the society, with an especial focus on the participation of women in leadership and decision making; women and the law, with an especial focus on the elimination of discrimination against women; and women and education, with a focus on the development of professionalism and competency.

The Women's Committee of Uzbekistan also bears primary responsibility for the participation of the Republic of Uzbekistan in the conduct of international events involving the problems women face.

The Women's Committee is the largest women's organization of the Republic of Uzbekistan and has its own chambers in all regions of the republic[33].

Nevertheless, in its Concluding observations of the result of the consideration of the Fifth report of Uzbekistan in 2015 The Committee recommends that the State party:

(a) Strengthen the Women's Committee by transforming it into an effective and genuine part of the State machinery for the advancement of women with the status, authority and human, technical and financial resources necessary to effectively promote the implementation of the Convention and enhance coordination between the Women's Committee and government agencies;

(b) Use the Convention as the legal framework for the design of a comprehensive national plan of action to promote gender equality and put in place monitoring mechanisms to regularly assess the progress made towards the achievement of the goals established in the plan[34].

In this regard a number of specific measures can be proposed.

As to financial resources, not only a state shall provide them, the Committee itself take active efforts to mobilize financial resources through the cooperation with national and international partners. It will also provide engagement of a wide range of specialists and promote the strengthening human resources. In this regard, it shall continue the practice of concluding Memoranda of cooperation with a wide range of partners.

The status of the Committee will be strengthened if its competence is extended. It shall receive new functions which in its turn will require the establishment of new departments within the Committee. In particular, it can be offered to create a Commission for gender expertise of legislation which will provide in-depth analysis of the legislation and its compliance with international women's rights standards and country's obligations in this regard.

In addition, in each ministry and agency there shall be established gender focal points or advisors on gender issues. Such kind of practice exists in many countries. WCU shall not the only body to deal with women's rights in the country. One person in each agency shall be responsible for gender mainstreaming dealing with relevant data collection, conducting trainings, etc. These gender focal points will promote women's advancement at their own levels .

It can be also recommended to organize forum of women parliamentarians to assist to the WCO in increasing the role of women in political life of the country.

Special attention of the Women's Committee of Uzbekistan shall be drawn to the development of international cooperation. In this regard, it is noteworthy that the Asia-Pacific economies and their national machineries are represented in the Asia-Pacific Economic Cooperation Gender Focal Point Network, which is tasked to provide expert advice and technical support to both Asia-Pacific Economic Cooperation committees and economies for the implementation of the Framework for the Integration of Women in Asia-Pacific Economic Cooperation. The Gender Focal Point Network meets annually, implements a three-year work plan to promote the framework, and provides training on gender analysis for members of Asia-Pacific Economic Cooperation[35]. Similar network could be developed within the CIS or Central Asian counties.

To sum up, efforts with the end to improve women's status shall be continued with an active involvement of international partners and civil society institutions.

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DESIGN OF LABORATORY SPACE FOR NEW DESIGN ACTIVITIES

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Abstract: Flexibility is a concept that can provide constructive and cost-effective interaction between the building, the environment and users, Existence of conditions such as mobility and accountability in our architecture helps to confront people and buildingsIn addition to the functional dimension, the structure also has the beauty and the sense of desirabilityConsidering the theme of the design, which is the design of laboratory space for modern design activitiesThe need for designing flexible, dynamic and dynamic spaces was felt, and the overall routine was based on mobility and spatial diversity.

Kinetic architecture is a concept in which buildings or part of their structures can be moved through kinetic energy without the overall integrity of the problem.

The combination of the Scissors of the Sun with the Origami shells was a good mix of structures for achieving the goal of space dynamics that was considered in the plan.

Recommended citation: Mohammadjavad Mahdavinejad, Hadi Javanshir. Design of laboratory space for New design activities. 7-8 American Journal of Research P. 101-111 (2018).

INTRODUCTION:

Algorithmic design, a design method with a distinction between the design process and the step-by-step stages, eliminates the problem-solving process from ambiguousAnd it brings a clear path to the designer. Algorithms are step-by-step and finite instructions that lead to solving a problem. (MahdaviNejad, 185: 1393)

Aesthetics is an architecture that is desirable architecture that, in the first place, has the ability to induce sense of space in terms of performance.For example, what is expected from a home is to create a sense of tranquility and vitality away from boredom and monotony.In the functional dimension, the optimal architecture is responsive to the

needs of the user, and there are no disturbances and functional uncertainties.

So in general, the optimal architecture can be said to balance the right balance between beauty, performance and structure. Undesirable architecture, in addition to creating a negative sense of audience, has inadequate functional definitions and unsolved ambiguities.Or not paid. Architects like Richard meier and Ren.

Case Studies:

1. Resonant Chamber, an interior envelope system that deploys the principles of rigid origami, transforms the acoustic environment through dynamic spatial, material and electro-acoustic technologies. The aim is to develop a soundsphere able to adjust its properties in response to changing sonic conditions, altering the sound of a space during performance and creating an instrument at the scale of architecture, flexible enough that it might be capable of being played. The project is funded through the 2011 Research through Making Grant, U-M Office of the Vice President for Research, 2011 Small Projects Grant, U-M Center for Wireless Integrated Microsystems, Social Science and Humanities Research Council of Canada Research Creation Grant. More images and architects' description after the break.

The project is developed through three streams of iterative research and development in both computational testing and full-scale prototype installation: Dynamic Surface Geometries; Performative Material Systems; and Variable Actuation and Response. The faceted acoustic surface is comprised of the composite assembly of reflective, absorbtive and electroacoutsic panels, clustered around an electronics panel that contains circuit controls for linear actuation, electro-acoustic amplification of the distributed mode loudspeaker (DML) embedded speakers and a set of sensing inputs.

Resonant Chamber in interior space (archdaily.com)

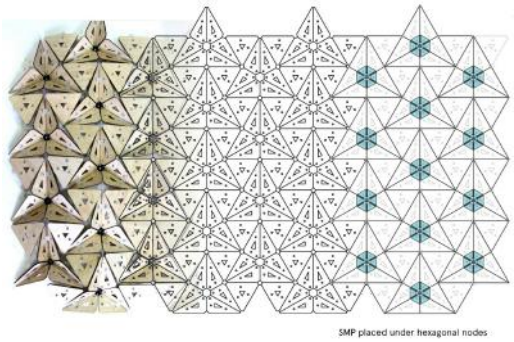
A single electronics panel may contain enough processing to control four DML speakers, local sensing of acoustic pressure and three sets of linear actuators which in turn controls three flat-folding cells.

2. IaaC Students Develop Material System with Responsive Structural Joints

Despite architecture's continued evolution over the course of history, our use of structural materials has remained largely the same since the advent of modern building materials. This reality may be changing thanks to the development of new materials seeking the same kinds of adaptability often found in nature.

These transformable structures have the potential to open further possibilities in the realms of responsive environments. A similar system might be designed to respond to a given environment and improve the experience of occupants, such as providing increased shade if it is sunny, or folding open if it is cloudy. The adaptability of the structure also allow for various spatial configurations to fit different programmatic needs. These foldable structures coupled with the material advantages of Shape Memory Polymers have the potential to create transportable structures and architecture that immediately responds to our changing needs.

The resulting structure can be deformed by heating theses joints and inflating balloons underneath the structure, a technique which is already used in the creation of full-scale buildings such as binishell domes, and has proven to be a viable process for efficient construction. If these structural joints could be developed at the scale of a building, they would be particularly useful for modular structures that need to be transported in a completed state and rapidly constructed on site.



SMP placed under hexagonal nodes (archdaily.com)

Original position and after deformation

3. TU Lisbon - IST, Portugal 2010Master Thesis Project & eCAADe 2011 Publication Supervisors: Jose P. Duarte & Joaquim Jorge

3This research work was developed with the aim of enquiring into the concepts of adaptability, transformation, and interactivity between the built space, its users and the surrounding environment to find appropriate responses to variations in spatial and functional needs, prompted by different uses and activities.

TU Lisbonproject (pinterest.com)

After a look into the roots of kinetic architecture and a brief survey of the state of art, it presents the prototype of a responsive kinetic structure for a multi-purpose pavilion, concluding that by the integration of existing and emergent technologies, we now have the basic means to design and implement such structures.

4. Flexible Stick Structures

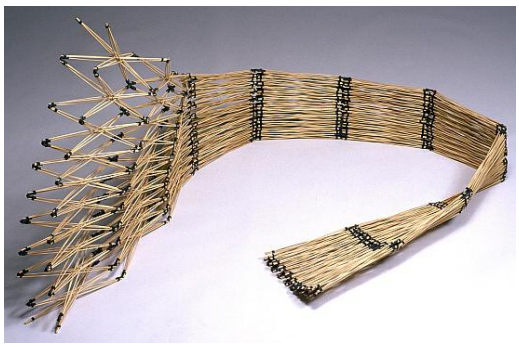
Bradford Hansen-Smith has been experimenting with structures made from a great many 10-inch bamboo skewers held together with short pieces of rubber tubing. He calls the technique stickweaving and presents a gallery of interesting examples. Modular units connect to neighboring units with tubing and the entire structure is flexible enough to be collapsed or morphed into various surfaces.

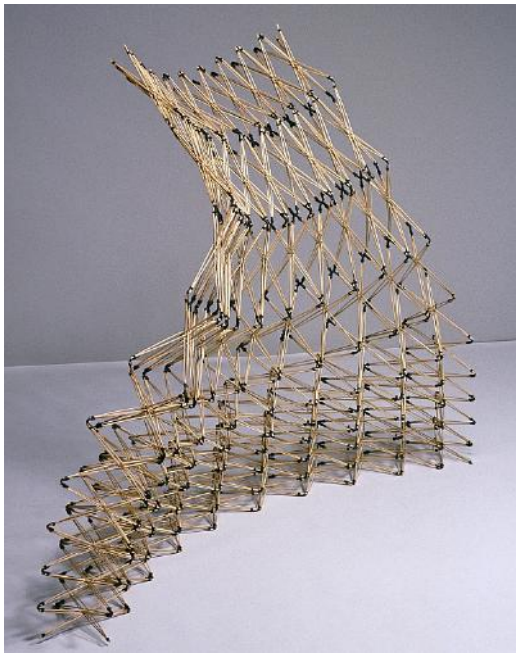
The basic module above is a 3-dimensional cross of twelve sticks arranged with three sticks along each of the long diagonals of a cube. The sticks are joined with tubing at the corners of the cube, so the joint in the center where all the sticks cross is flexible.

Deployable structures refer to any type of structure that has at least two sizes and/or configurations. Any tent qualifies, as does an umbrella. These object transform radically from their stored state, as compact as can be to facilitate their transport, and full expanded to provide (in both of these cases) shelter from the elements. As part of a semester long investigation into types forms of deployable structures, a basic "scissors" hinge was constructed to explore how manipulating points of connection can drastically change how these hinges deploy.

By changing where the center connection is located, these 'extension arms' go from a straight extension to curved to folding in on itself. This transformation, as explored here, required the reassembly of the pieces and thus provided a cumbersome process for adjustment

By incorporating length adjustment into the strut component, larger structures can transform from a uniform deployment, flattening all the way out, to an asymmetrical deployment which results in a partial dome structure.





Example for Flexible Stick Structures (pinterest.com)

METHODOLOGY:

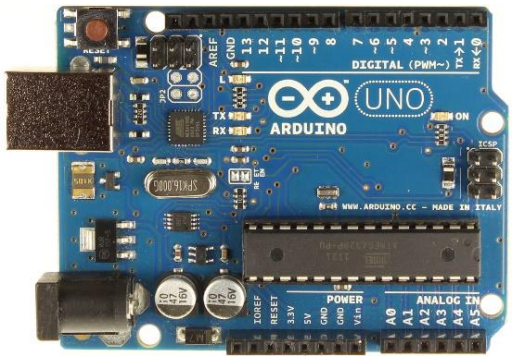
FIREFLY:

FIREFLY is a set of comprehensive software tools dedicated to bridging the gap between Grasshopper - (a free plug-in for Rhino) - the Arduino microcontroller and other input/ output devices like web cams, mobile phones, game controllers and more. It allows near real-time data flow between the digital and physical worlds - enabling the possibility to explore virtual and physical prototypes with unprecedented fluidity.

Ray Activision Plug-in:

Ray Activision is a program that includes identifiable video codes detectable by camera or other sensors. The program introduces video codes as pages in the grass Hopper program, so that with Moving each of the video codes in front of the camera, the page specified in the grass hopper will interchange.

The type of arduino used is the suggestion to rotate the arduinouno array, which has the ability to move the servo motors, the type of servo motor tested for this tower pro micro project that has the ability to rotate at different angles.



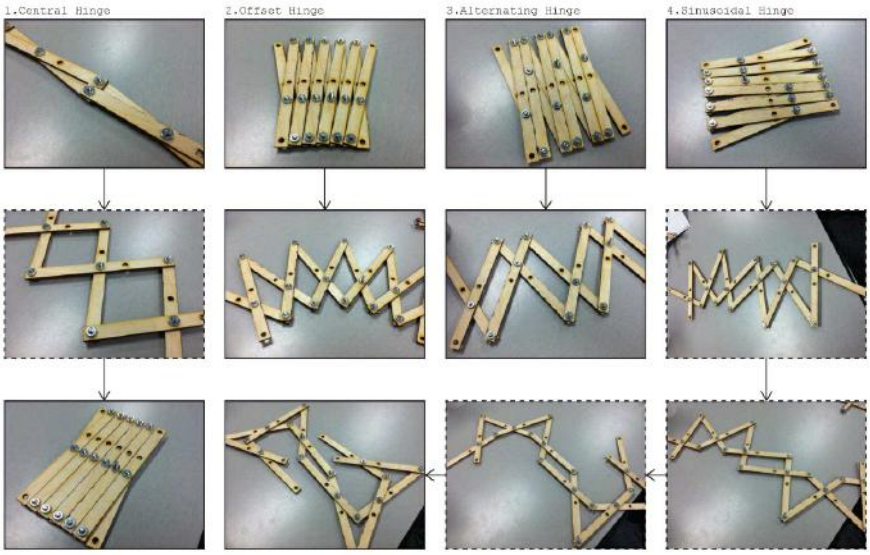
Arduino uno

Tower pro motor

design process:

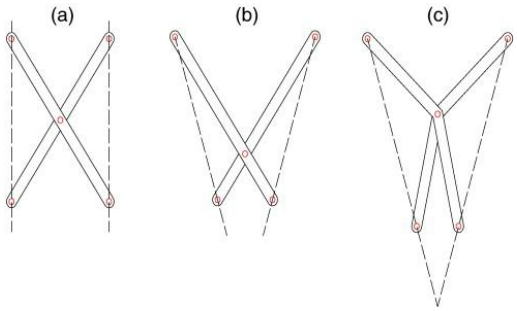
The San Scissors are structured according to the structure of at least two rods of equal or unequal size. Each rod has at least one joint and a junction, and each part acts as an umbrella structure. The movement of one side of the rod is transferred due to the transfer of force by the joints to the other side, and the two to the two affect the rest of the structure.

By transferring the location of the force, as well as the location of the joints and the point of attachment of the rods, we can constrict what kind of force we can have, what kind of movement we can have,Also, the location of the arm joints in the set of sanitary scissors can determine whether the movement of the set is linear or curved. The integration of sanitary scissors with different joints in two different directions can provide a more coherent 3D structure for open and closed ceilings.



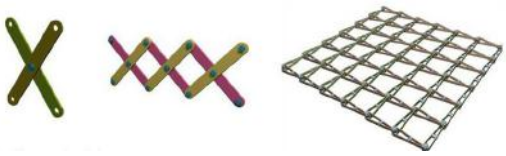
Sample Joints and Arm of San Scissors (Source: pinterest.com)

Scissor structures have a special ability to open and close and reduce volume. Using mid-armed arms accelerates and balances the process and works in two directions: (a) other examples that are joint Examples include cases like (b) and (c)



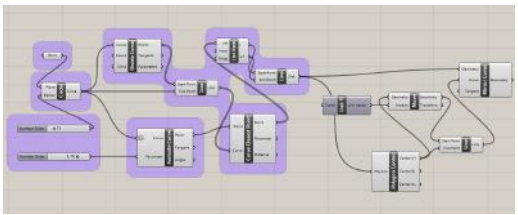
Sample Joints and Arm of San Scissors (Source: pinterest.com)

The evolution of the motor mechanism of the San Scissor structures is a combination of one axis to two main axesTo connect the two vertical axes, each other requires vertical fasteners to create the connection with the bolts between the fasteners and the ends of the arms.

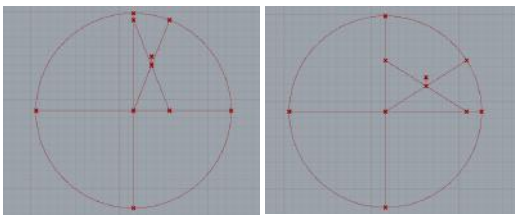


Vertical joints connecting the arms perpendicular to each other

Design and write algorithm in grass hopper and rhino:



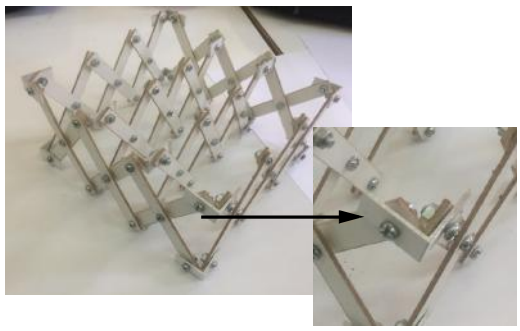
grass hopper for one module of scissors structure



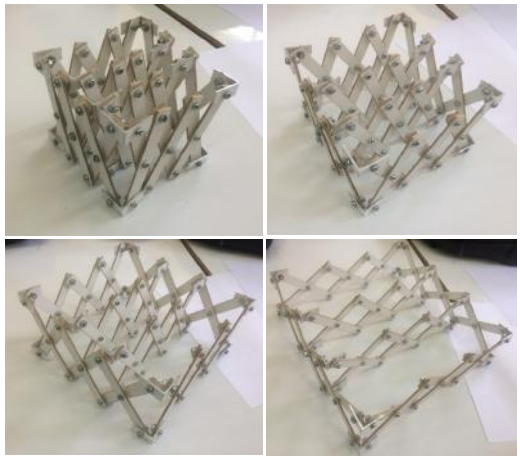
right: scissor model in open form, left: scissor model in close form (rhino)

Structural system of San Scissors due to functional flexibility and the presence of joints and modular bars in the entire open and open assemblyAnd it's a lot to reduce, combining and integrating this structure with the roof structure and the original Origami coating that is plentiful,In sum, the system creates a complete and complete set of components, the different parts of the structure and the various stages of the implementation of the changes, in accordance with the methods described in the following sections, are as follows.

The use of four axles in one direction and two perpendicular axes facilitates the movement of the mechanism on the plate and open and easy closing.



Vertical joints in structure



Steps to open and close the mechanism

To accelerate the process of opening and closing the system, several solutions were proposed and implemented:

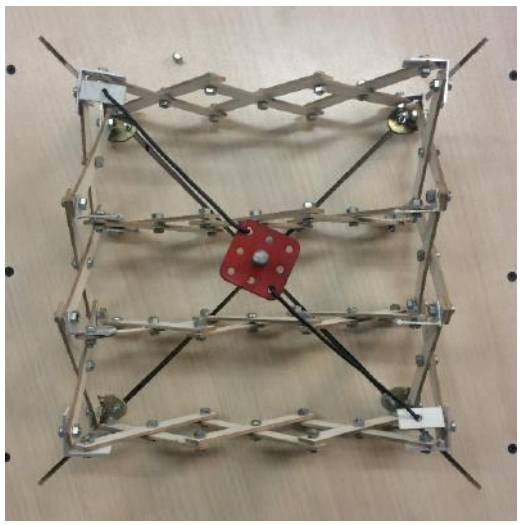
1. The design of a wooden pedestal for the assembly and creation of rails to control the diameter of the vertices to open and close the structure, which is also used as a general structure holder.

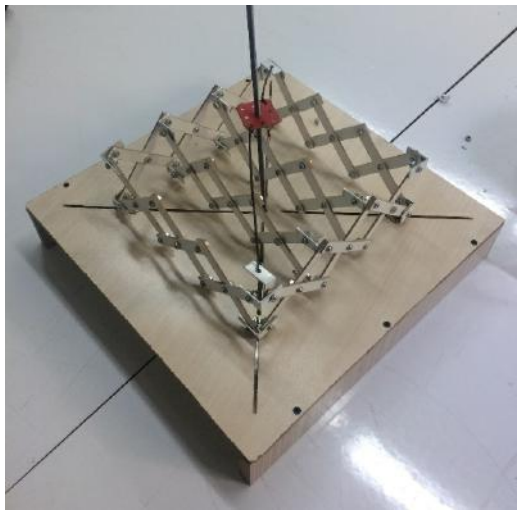
2. The use of the central turning axis and the rods attached to the vertebrae that open and close the structure axis up and down and in effect translate the vertical movement mechanism to the angle of 45 degrees to the diameter movement mechanism

The central axis is screwed

Structural system with central bar mechanism

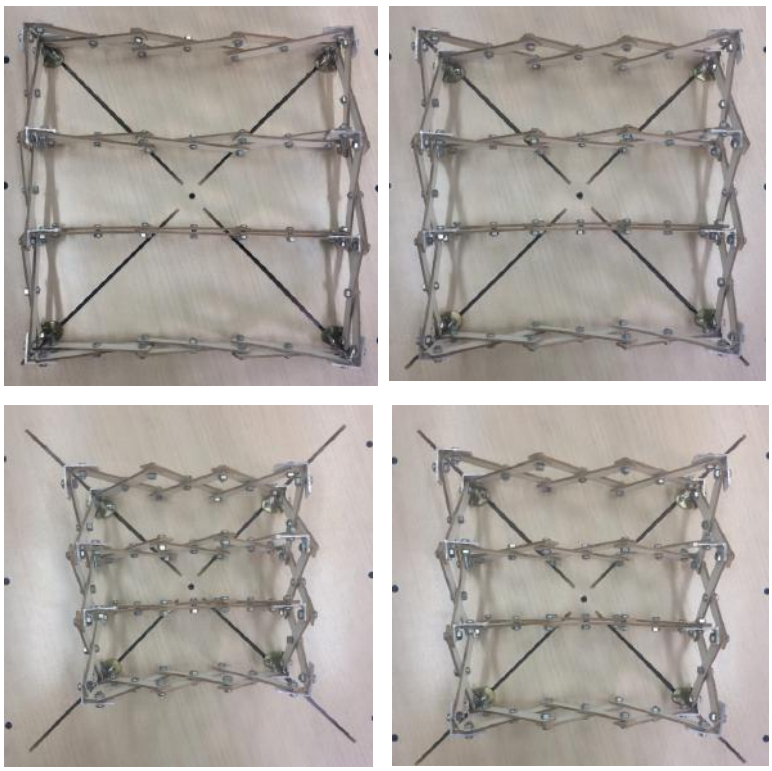
Connecting the plate to the central spindle rod and the central rod rotary bearings



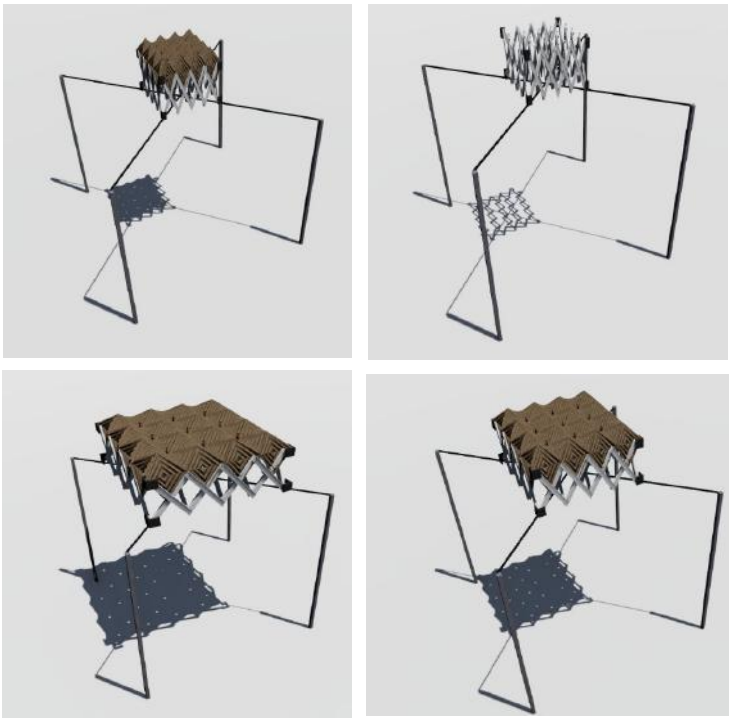


Structure ofsystem withcentral bar mechanism

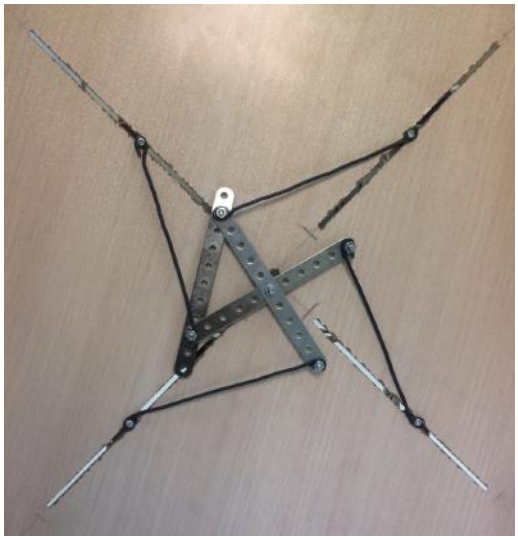
3. Design of screw and rotary structure under the base so that it can be controlled by the rotation of the whole assembly by means of a connection to the four ends and the stabilization of the center of the assembly.



Steps to open and close the structure with the bottom rotation system



Model of Steps to open and close the structure with the bottom rotation system



Swivel structure under the replica for opening and closing

Presentation of the design and description of the structural mechanism

Construction and operation:

The project of building enclosed space as a pavilion pavilion in the area opposite the Faculty of Art of TarbiatModarres University, using an origami canopy in the upper part of the completed system and ready to be exploited.

The design of the canopy of the complex is origami

The canopy mechanism is open and closed to control the amount of light input to the booth, and when closed, it enters the light into the space and the ventilation inside the booth,

The lighting of the pavilion at night under the canopy is used to create an appropriate space at night and on the canopy to create an indicator element in the environment. The dynamic and active form of the set creates a sense of mobility and vivacity in space and according to the theme of the interior design response.

To further interact with the environment, photovoltaic panels and solar energy can be used to control the opening and closing of the structure of the scissor roof.

Implementation of the project at the Faculty of Art and Architecture of Tarbiat Modares University

Conclusion:

The two-dimensional use of the San Scissors makes it possible to maximize the efficiency and maximum utilization of the structural form factors as a canopy in a small volume of space, In a closed state, the structure has only 5% of the space occupancy of the open and open space, which can be a positive factor for optimal use of space. A variety of proposed mechanisms for the movement of structures and the existence of different strategies have made it possible to work in different ways, taking into account the space requirements and conditions of the use of the structure, and choose the most optimal method.

In terms of execution cost, due to the modularity of the components and the lack of specific implementation details, the project can be considered an affordable and cost-effective project.

In general, color coordination, form coordination, minimum occupancy of space, the existence of various solutions for moving the structure system, the use of modular components and easy construction are the most important features of the project.

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SOCIAL SCIENCE AND HUMANITIES

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REFLECTION OF TEMURIDS RENAISSANCE IN TOPONYMS

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PhD historical science

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Abstract: This article is devoted to the definition of the significance of toponyms given in written sources of the Temurids epoch in the study of the Temurid Renaissance.
Keywords: Toponym, Central Asia, Temurids renaissance, Amir Temur, Hafiz-i Abru, Zafar-name.

Recommended citation: Amanulla Buriev. Reflection of Temurids Renaissance in toponyms. 7-8 American Journal of Research P. 112-116 (2018).

Amir Temur, having created a great power, carried out a huge creative activity, which was reflected in the toponyms. Information on the historical toponymy of Central Asia in the XIV-XV centuries is found in historical, geographical, and other works, in the vakf documents, letters, etc., which are compiled during the reign of Amir Temur and the Temurids.

For example, the works of Nizam ad-din Shami "Zafar-name", Hafiz-i Abru "Geography", "Zubdat at-tavarikh-i Baysunguri", Sharaf-ad-din Ali Yazdi "Zafar-name", Fasikh Ahmad Khawafi "Mujmal and Fasihi, Ibn Arabshah, "Ajaib al-Makdur fi Nawab Taymur", Abd al-Razzaq Samarkandi, "Matla as-sa'dine", Mirhonda "Rauzat As-Safa", Zahir ad-din Babur "Babur-name", Hondamir "Habib "As-Siyar", Mirza Muhammad Haydar "Tarih-i Rashidi", Rui Gonzalez de Claviho's "Diary" also contains valuable geographic materials, supplementing sources of this period.

To study the toponymy of Central Asia during this period, each of these sources has an important scientific value. For example, "Geography" by Hafiz-i Abru, accordingly contains a large number of toponyms as a geographical composition. But territorially they are limited and refer mainly to the regions of Khorasan (in more detail) and to Maverannahr (in brief).

In historical works the exposition of events is repeated and, accordingly, the toponyms in them

too. In such cases, it is expedient to take as a basis one work and, by comparative study, indicate differences. Thus, among topical works in the "Zafar-name" of Sharaf-ad-Din Ali Yazdi, toponyms are given more exactly.

In written sources on the history of the state of Amir Temur chronologically two types of place names are given: 1) geographical names directly related to the XIV-XV centuries; 2) Toponyms, borrowed from the work compiled in previous centuries. In general, only a certain part of the toponyms in the Temurid springs really reflects the toponymic position of Central Asia in the XIV-XV centuries.

The formation of some toponyms is connected with the town-planning activity of Amir Temur such as the construction of new settlements - cities, castles and large settlements. The famous Arab historian Ibn Arabshah (full name: Shahab ad-din Ahmad b. Muhammad b. Abdallah b. Ibrahim, 1389 - 1450) reports on the construction of several castles according to the order of Amir Temur regions of Samarkand and gives their names: Misr (meaning the capital of Egypt, Cairo), Damascus, Baghdad, Sultaniyya, Shiraz [1. (II), p.83].

Of these, the castle Shiraz was located in the north of Samarkand, approximately 4 km away. In the "Geography" of the historian Temurid's epoch Hafiz-e Abra "tuman" (region), in which this castle was located, is called the region Shiraz. This fortress has not survived until our time, its place is known under the name "Kurgan-Tepa", which is located in the Bulungur region in the village of Balgali [3. p.133-136].

The toponym of "Shahrukhia" the name of the city, built by the order of Amir Temur. In the Tashkent region at the confluence of the Akhangaran River into the main water artery - the Seikhun river (Syr-darya), in the place completely destroyed by the troops of Chenghis Khan of the old Benaket, Amir Temur built a new heavily encouraged city-fortress Shakhrukhia in 794 (1391-1392), named after the name of his son Shahrukh. From the written sources of the Temurids epoch, only in the "Zafar-name" of Sharafad-din Ali Yazdi there is information about the construction of this city-fortress and the resettlement of the population there from the surrounding areas. [5. P l., 466 p- 467 a]

One branch of the Great Silk Road, which follows from China through the Fergana valley to Samarkand, passed through Shahrukhia. Respectively, this city and its name existed until the XVIII century.

One group of toponyms is reflected in the topography of cities. In Samarkand: the palace of Amir Temur Koksaray, the main administrative building; The Jami Mosque (also known as the Bibi-khanum Mosque); Madrassah Khanum is an educational institution

built in due time by the wife of Amir Temur Saray Malik-Khanum (also known as Bibi-khanum), now it is not preserved; a number of buildings - mausoleums and khanakahs, established over the graves of members of the family of Amir Temur in the architectural ensemble Shakhi-zinda (mausoleums Kutlug Turkan-aga, Shirinbek-aga, Uljai Turkan-aga, Khanaka Tuman-aga), the architectural complex of the mausoleum of Amir Temur, near the madrasah and Khanakash's grandson Muhammad Sultan, built by him as a tombstone over his grave.

Some of the toponyms were formed as a result of Amir Temur's activity by the creation of new gardens in the area of Samarkand. The names of more than ten such gardens are listed in the Temurid sources: Bag-i Shimal, Bag-i Dilkusha, Bag-i Behisht, Bag-i Chinar, Bag-i Nakshi Jahan, Bag-i Amir-zade Shakhrukh, Bag-i Baland, Bag-i Nav, Bag-i Davlatabad, Bag-i Takhti Karacha, Bag-i Karatuba with the castle Koshk-i Jahan-Namai in it.

In Shakhrisabz: Aksaray architectural complex is a masterpiece of Amir Temur's creative activity. According to the historian Hafiz-i Abru this was a high-arch building, designed personally for Amir Temur and given to it the name "Aksaray" [4. p.170]; this name has survived to our time. Other architectural monuments in this city are the Dar At-tilavat complex (a tomb with a cupola above the grave built over the grave of Sheikh Shams al-Din Kulal, the teacher of Amir Temur's father, the tomb of Gumbaz-i Sayidan, built by Mirza Ulugbek) the architectural complex "Hazrat Imam" in which the mausoleum built by Amir Temur is located above the grave of Mirza Jahangir, his eldest son, who died early.

According to the historian Muhammad Salihodzha Tashkandi (XIX century), in his work "Tarih-i Jadida-i Tashkand" ("The New History of Tashkent"), at the order of Amir Temur, Tashkent city was surrounded by a high wall and twelve gates were installed there. According to the author, these gates were called under the names of the Turkic tribes (Kiyat, Turk, Uzbek, Karasaray, Chigatai, Kokcha, Kamandaron, Kangli, Beshagach).

The origin of the name "Mausoleum of Khoja Ahmad Yassavi" is connected with the creative activity of Amir Temur in the lower reaches of the river Seyhun (Syr-darya). According to the information of Sharaf-ad-Din Ali Yazdi in "Zafar-name", Amir Temur in the month of the rabbi of I 800 (November, 1397), wintered in the Tashkent region. From there, he went to the bow to the grave of the famous Sufi sheikh, the founder of the Order of Yassaviy, Khoja Ahmad Yassaviy, located in the village of Yassi in the lower reaches of the Seyhun. Here he gave the order to build a mausoleum with a huge cupola above the grave of this saint.

Sharaf ad-Din Ali Yazdi gives exact information about this: the circle of the cupola in the inner part is one hundred and thirty gas (78 m), the height corresponded to this; diameter - forty gas (25 m); its walls and dome were decorated with various ornaments; the door was lined with a metal lining created from an blend of seven metals (haft jush); The same metal was covered by a pool built in the middle; the grave itself was lined with special marble of high quality, brought from Tabriz; The mausoleum was completely decorated with beautiful colorful oriental patterns.

Observation of all construction work was entrusted to Ubaidullah Sadr. The construction of the mausoleum, according to the order of Amir Temur, was completed within one year, in 1398. [5. P.294 b]

In the written sources of the Temurids epoch, the names of the canals, which were deduced by order of Amir Temur of the Murgab River by its nobles, were preserved for irrigation of new sowing lands. Their names are given in the "Geography" of Hafiz-i Abru: Dilkusha, Ganjhravan, Darband, Ganjhana, Umar Taban, Akbuga, Kutlug Temur, Shaykh Abu Sa'd, Shaykh Ali, Davlatshah Jandar, Gulbagan, Kutlug-hatun, Hasan Jandar, Amir Alauddin, Sanjidak, Navruz, Kebekchi, Mengli-Hodjha.

The toponym "Jui-i Mahigir", given in Temurid's written sources, is the result of Amir Temur's creative activity in the territory of present-day Afghanistan. Amir Temur, during the campaign to India, after the transition of the Hindu Kush ridge, stopped in the Baran valley, located in five farsahs (about 35 km) from Kabul. Here he gave order to his nobles and troops to build a canal and withdraw water from the river flowing in the valley of Baran towards Kabul. As soon as possible, a canal was built in five farsahs, called "Jui-i Mahigir" ("Fishing Channel"), as well as "Juyi Nav" ("New Channel") [5. P.344 ab].

The name "Channel Barlas" affirms to the creative activity of Amir Temur in the territory of Azerbaijan. According to Sharaf-ad-Din Ali Yazdi's "Zafar-name", Amir Temur, during his seven-year campaign, while in the winter in Karabakh on the coasts of the Aras (Araks) River, in 804 (1401-1402), ordered his nobles to build a channel that takes water from the Araks River, for irrigation and improvement of nearby lands and settlements. A canal with a length of more than ten farsakhs (about 70 km) was constructed in a short time, within one month, directly by the forces of Amir Temur. [5. P.401 ab].

According to the historian Nizam ad-din Shami, the remains of the waters of the canal fell into the sea of Mazandaran (the Caspian Sea). Amir Temur, in order to maintain the name of the tribe barlas, to which he belonged, this water object named "Canal Barlas" [2. P.244]. Similarly, according to the order of Amir Temur, the city of Bailakan and the eponymous channel providing water to this city were built in Azerbaijan. [5. Pp. 4242a-443a]

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CHALLENGES AND PRACTICE OF PLASTIC BOTTLES, PAPER AND CARTON GENERATION AND COLLECTION IN ADDIS ABABA CITY, ETHIOPIA

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Abstract: High urbanization rates and changes in the life styles and steady rise in living standards have resulted in the increase of solid waste both in type and volume. The rapid growth of spring water industry, trade and services has accelerated the generation of plastic bottles. Plastic recycling is the process of recovering scrap of waste plastic and reprocessing the material into useful products. Since the vast majority of plastic is non-biodegradable, recycling is a part of global efforts to reduce plastic in the waste stream. 2, 983 ton of waste plastic have collected and recycled in 2010 E.C half year. Those organizations have a major impact on solid waste management of the city basically they have a capacity to reduce the recyclable waste not to dispose at landfill. 42,705 ton plastic is generated annually and 43,526 ton paper was generated. Regardless, this study has also quantified the amount of waste plastic and paper and card board collection in Addis Ababa. Thus, the cleansing association replied that an average of 16,888.55 ton of plastic and 2,701 ton of paper were collected per annum.

Key words: plastic, urbanization, lifestyle, standard, spring water industry

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1. INTRODUCTION

In many developing countries solid waste management has become a serious challenge. High urbanization rates and changes in the life styles and steady rise in living standards have resulted in the increase of solid waste both in type and volume. Some studies, for example, Palcyzynski (2002)p;2, estimated that with the existing level of urbanization in developing countries, there would be two fold increase of solid waste generation in the current decade.

More serious threat is the disposal of this waste. According to the report by UNIDO (2006), i.e. United Nations Environmental Program

Division of Industry, Technology and Economics, in most African cities on average only 50% of the total generated solid waste is collected. Nevertheless, 95% of the collected waste is indiscriminately thrown away at land fill sites without proper measures to control silts or hazardous gas emission. The open damping sites are excellent breeding places for rodents and insects which can cause or transmit some deadly diseases. Moreover, as the existing damping sites are filled quickly, finding other new sites becomes more and more difficult. Hence, the cost of disposing solid waste increases. This in turn brings about additional strain on the already marginal budgets of local authorities (UNIDO, 2006)

Basically, waste management is the responsibility of government or municipalities. Nevertheless, small private groups/individuals are seen involved in the work. Municipalities carry out the solid waste management service under legally established local authorities, but it is costly and relatively unaffordable for the majority of the citizens in the overcrowded slums. On the other hand, the small private groups and individuals that operate informally base their livelihoods on city Addis Ababa, whose population grew from about 2.1 million in the year 1994 to 2.7 million in 2007, is one of the fastest growing cities in Africa. Its current population is estimated to be exceeding 3 million and, apart from its sheer population size, the city is playing significant economic, social and cultural roles both at the national and international levels. Accordingly, the City has significant contribution to the national GDP growing to the concentration of various urban-based service orientated and manufacturing activities. The city, which is the Federal Capital, accounts for almost a quarter of the national urban population that is a mosaic of Ethiopia's multi ethnic and multicultural identities. On the other hand, being the home of the African Union, the Economic Commission for Africa, several specialized UN agencies and other international organizations and more than one hundred diplomatic missions, it is among the few most culturally and ethnically diverse cities in the world.

The city's rapid population and economic growth, coupled with discernible changes in lifestyles and consumption patterns of its residents and visitors that are associated with globalization and improved information and communication technology, contribute to dynamic changes in both the quantity and composition of solid waste to be generated in the city. In particular, the rapid growth of spring water industry, trade and services has accelerated the generation of plastic bottles. Yet, the city does not have a comprehensive, integrated and sustainable solid waste management plan to effectively respond to the complexities associated with such dynamics.

The recycled plastic wastes can be reused alone or regenerated by mixing with fresh raw material in suitable ratio. Products made with simple regenerated plastics alone belong to low-grade products, acceptable only in developing countries while the latter can be accepted by advanced countries. Some of the products made from simple regenerated plastics alone include disposable products, such as, dish, knife and fork, and plastic bags. Hence, a study has been conducted to assess the quantifications and collections and prevailing management practice of recyclable plastic bottles and paper waste in Addis Ababa.

The raw materials required by the local plastic products manufacturing sub sector i.e. plastic resins are entirely imported. During the period 2009 - 2011, the local plastic manufacturing sub sector has imported on average 67,235 tons of various type plastic polymers of which the largest share (40.58%) is accounted by polyethylene and related polymers followed by polypropylene and related polymers (19.48%) and polyvinyl chloride and related polymers (see Table 3.1).

Table 3.1 import of plastic resins (tons)

Type/ Year	2009	2010	2011	Average	% share
Polyethylene and related	27,006.1	27,006.1	27,839.1	27,283.8	40.58
Polypropylene and related	9,270.3	13,071.0	16,955.7	13,099.0	19.48
Polyvinyl chloride and related	14,836.3	9,251.2	8,928.2	11,005.2	16.37
Ethylene-vinyl acetate and related	5,484.7	5,647.7	7,990.2	6,374.2	9.48
Other polyether's	3,042.2	2,454.9	2,447.8	2,648.3	3.94
POLY(ETHYLENE TEREPHTHALATE)	1,215.0	1,971.3	4,081.5	2,422.6	3.60
polyesters	828.7	1,152.7	1,143.9	1,041.7	1.55
Polymers of halogenated olefins	935.3	491.4	944.6	790.4	1.18
Alkyd resins	446.1	555.5	1,154.5	718.7	1.07
Polystyrene and related polymers	29.0	1,152.7	349.2	510.3	0.76
Acrylic	1,011.7	156.8	292.6	487.1	0.72
Polyamides	167.0	980.4	130.3	425.9	0.63
Epoxide resins	343.2	12.6	887.5	414.4	0.62
Polycarbonates	5.5	0.3	16.7	7.5	0.01
POLY(METHYL METHACRYLATE)	0.6	5.9	10.7	5.8	0.01
Total	64,622	63,911	73,172	67,235	**100**

Source: - Ethiopian Revenues & Customs Authority.

Global plastic consumption is accelerating in an exponential manner and it indicates how the role of plastic in everyday life of society could be significantly important .In this connection, the graph below indicates how consumption increased significantly between 1050- 2013.As the world around us changes, our lives will be affected both directly and indirectly. Plastics will not just be a tool to respond to the major challenges facing the global community; they will also be an intrinsic part of our everyday lives. The key driver of change here will be the acceleration of technology: the combination of technology and

plastics will change the way we live work and relax (Ray Hamond, 2007)

2. METHODOLOGY

2.1. Description of the study Area

The study area; Addis Ababa was established in 1886 and with four million populations; Addis Ababa is one of the oldest and largest cities in Africa. At an average altitude of 2400 meters, it is also one of the highest. Being the capital of a non-colonized country in Africa, it has been playing a historic role in hosting the regional organizations such as the Organisation of African Unity African Union, and the Economic Commission for Africa, which contributed to the decolonization of African countries, and later bringing Africa together.

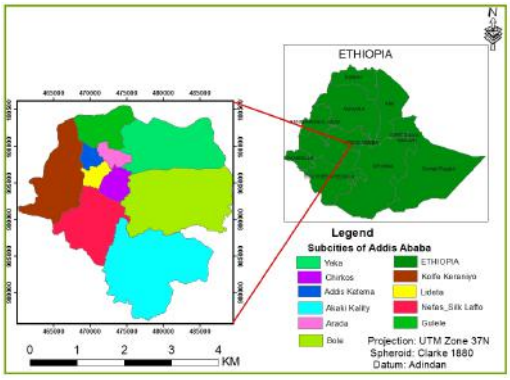


Figure 1. Map of Addis Ababa
Source of Location Map (From ARC GIS 10.2, 2016)

2.2 Location

The study area, Addis Ababa lies at an elevation of 2,300 meters (7,500 ft) and is a grassland biome, located at 9°1‘48‘‘N 38°44‘24‘‘ ECoordinates: 9°1‘48‘‘N 38°44‘24‘‘. The city lies at the foot of Mount Entoto and forms part of the watershed for the Awash. From its lowest point, around Bole International Airport, at 2,326 meters (7,631 ft) above sea level in the southern periphery, the city rises to over 3,000 meters (9,800 ft) in the Entoto Mountains to the north. The city is divided into 10 sub-cities.

2.3. Climate

The city has a complex mix of highland climate zones, with temperature differences of up to 10 °C (18 °F), depending on elevation and prevailing wind patterns. The high elevation moderates temperatures year-round, and the city's position near the equator means that temperatures are very constant from month to month

2.4. Demographics

Based on the 2007 census conducted by the Ethiopian national statistics authorities the population of Addis Ababa is 3,384,569 million; all of the population are urban inhabitants. For the capital city, 662,728 households were counted living in 628,984 housing units, which results in an average of 5.3 persons to a household.

2.5. Economy

The economic activities in Addis Ababa are diverse. According to official statistics from the federal government, some 119,197 people in the city are engaged in trade and commerce; 113,977 in manufacturing and industry; 80,391 homemakers of different variety; 71,186 in civil administration; 50,538 in transport and

communication; 42,514 in education, health and social services; 32,685 in hotel and catering services; and 16,602 in agriculture.

The city has recently been in a construction boom with tall buildings rising in many places. Its geographic location is in the center of Ethiopia that has combined with a lack of development policies in other urban centers have given the capital the majority of social and economic infrastructure in the country. As a result, it has been a melting pot to hundreds of thousands of people, coming from all corners of the country in search of better employment opportunities and services. This high rate of rural-urban migration accounts for about 40 percent of the growth. Coupled with rapid natural population growth, Addis Ababa one of the fast growing cities in Africa, posing critical challenges, including a high rate of unemployment, housing shortage, and environmental deterioration.

2.6. Research Approach

This study was conducted on the assessing the generation and collection of plastics and paper waste. Therefore, it intended to look the quantity of plastics and paper generated and collected and income generation by the quantitative research approach. Thus, both qualitative and quantitative research approaches were employed to collect, analyze and interpret the collected data.

2.6.1. Research Type

In this study, descriptive research type was employed because it is more appropriate to describe what actually exists or current condition which means the generation and collection of plastics and paper waste at Addis Ababa.

2.6.2. Time Dimension

The researcher conducted the research only once and the data was gathered from the selected sample size at one point in time from September -March/2018.Thus, cross-sectional time dimension was used to undertake the research.

2.7. Research Techniques

Following topic selection and its approval, a literature review was compiled. Appropriate and relevant literature were selected and reviewed. Following the preparation of research proposal and identification of data sources, the researcher prepared the appropriate instrument for data collection was developed. Each instrument was tested at pilot scale before it was employed to full data collection campaign. The data collection task has been undertaken. Primary data was collected using observation and interview. Secondary information was then compiled from internets, government, reports and research articles. The collected primary and secondary data were fed into SPSS. Then, the result was summarized using SPSS and presented in tables, figures and chart.

2.8. Methods of Data collection

Different data gathering tools were used to collect data during the study. Interview and direct non participant observation and document review

were used to collect primary and secondary data.

2.9. Sampling Design

According to Kothari (2004), sample design is a definite plan for obtaining a sample from a given population. Accordingly, the first population of the study, sampling frame, sampling unit and sampling techniques to be described as followed.

2.9.1. Population of the study

Population refers to the total items about which information is desired (Kothari, 2004). In this study, the population of the study which the sampling frame was taken is 856 employees working in government and private organization who are engage at collection and recycling have been responsible for solid waste recycling and reusing activities.

2.9.2. Sampling Frame

The sampling frame is the list from which the sample was drawn. Thus, the sample frames was from 74 Share enterprise 617 members, 7 private recycling companies, 116 worda cleansing expert, 10 subcity cleansing managers and 10 subcity expert.

2.9.3. Sampling Unit and Unit of Analysis

Unit of analysis is a population to be studied or individual member of the sample that are identified for analysis. The unit of analysis for this study was governmental and private organization found in Addis Ababa and who are engaged in plastics and paper waste collection and recycling activities.

2.9.4. Sampling Technique

Random sampling techniques were used to select an individual respondent from each strata. The collector and recycler were first identified then the target samples were calculated according to its number of total population.. A purposive method of sampling was applied to select samples from organization which their total population was very small and their ratio of sample proportion was less than one

2.9.5. Sample Size Determination

According to Singh and Masuku (2013), there are many approaches to determine the sample size of the study. These include using a census for a small population, limiting a sample size of similar studies, using published tables, and also applying formulas to calculate a sample size. The sample size in this study was determined by using scientific formula; a method which was explained by Yemane (1967).

The total number of the population was 8456. Yemane scientific formula was used to determine the sample size of this study. The representative number of samples that was determined by Yamane scientific formula considering 90% margin of error.

$$n = \frac{N}{1+N(e2)}$$ Equation 1

Where,

n= the required sample size

N=the total number of population

e= allowable error (90%= 0.1)

$$\text{Hence, } n = \frac{856}{1+856\,(0.1)^2} = 90$$

Accordingly, 90 governmental and non-governmental organizations were selected. However, some organizations which have lower sample ration. The original number of their population was taken as a sample. Hence, a total number of 90 samples were selected and contacted.

2.10. Sources of Data

Both primary and secondary data were collected from different sources.

2.10.1. The primary Data Source

To obtain Primary information about to assess the generation and collection of plastics and paper waste in Addis Ababa, interview and direct observation were used. Then, the questionnaire was tested and reviewed before it was fully implemented for data collected. This was done to avoid ambiguity, and redundancy of words, in turn, to improve clarity and understanding.

2.10.2. Secondary Data Source

Secondary data were gathered from relevant documents like books, previous works, the annual report of the organization, and other published and unpublished material were used.

2.11. Method of Data Analysis

The collected data were organized according to the variables. Simple quantitative statistical tools including frequency, percentage, chart and tables were used. SPSS (Statically package for Social Science), and Excel program were employed to analyze the data.

2.12. Data presentation

Data obtained by using different data collection method were analyzed and presented differently. The analyzed and interpreted data were presented in the form of tables,figures, chart, plates and narration and included in the report.

3. RESULT AND DISCUSSION

3.2. Response Rate

As it is described in the methodology part, primary data are used for this study were gathered from the organization that are responsible for generation, collection and recycling of Addis Ababa solid waste. The following table summarized the respondent's total response rate along with the returned.

Table 1. Response rate of the interview

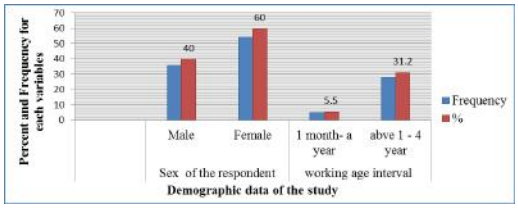
Respondent	interviewer	Response for interview	Response rate %
94	94	94	100

Source: Field survey (2018)

The above Table 3.1 summarised that from the total 90 respondents, 100% of respondent were found during the interview period, this indicates that the interviews are sufficient enough to carry out the analysis

3.2. Demographic Data

Knowing sex and duration of the respondent that how long they are engaged at this work and age help to set their composition and flexibility and their inclination to change. As it was shown in Figure 4.3, 60% of the respondents were females & 40 % were males. Regarding the age intervals of the respondents staying at this work were 5.5% of the respondent were engaged on this work for less than a year, 31.2% were between 1-4 year and 63.3% of the respondent was above 4 years.



Source, Field survey, (2018)
Figure 2. Sex and working age interval characteristics of the respondent (n=90)

3.3. Result of the Study

In this section, the analysis of the primary and secondary data which were gathered during the fieldwork is presented based on the objectives of the study.

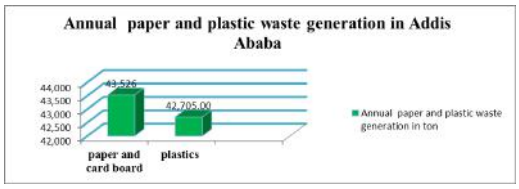
3.3.1. Quantification of plastic bottles and paper waste generation in Addis Ababa

Solid waste is generated from different activities such as anthropogenic sources of activities (industrial, household, commercials, street and soon) secondly from natural activities such as deciduous tree /falling of tree by wind and volcanic eruption, flooding and soon. Therefore from there are two type of solid waste are generated in Addis Ababa city biodegradable and non-bio degradable and hazardous and nonhazardous solid waste.

To observe the waste composition in Addis Ababa, two research data are not added, one from a research from Nor consult in 1982 and the second from the IGNIS project between 2008 and 2014 which surveyed only households. However, IGNIS project neither is more preferable than nor consult.

According to (IGNIS project study, 2013), waste composition of Addis Ababa is 64% organic, 5.3 paper and carde board, 5.2 % plastic and other waste has generated respectively. Therefore from the data that we can understood that paper and plastics waste are the highest generation followed by organic wastes.

Thus, this study would like to quantify the amount of plastic bottles and paper and card board waste regarding the data organized and extracted from IGNIS Project study. Based on the secondary data , the estimated population of Addis Ababa is 5 million where these people has intended to generate 0.45 kg /cap/household waste from this 5.3% is paper and card board where 43,526.25 ton of paper are generated annually and 5.2% of waste is plastics where 42,705 ton of plastic waste is generated annually.



Source, field survey, 2018 Figure3. Annual paper and plastic waste generation in Addis Ababa

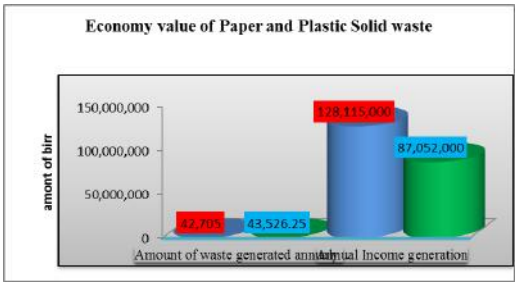
As it seen in figure 1.3., the generation amount of plastic and paper is very high and this materials are very useful to recycle and it can protect natural resource by converting these solid waste materials as a raw material and also the figure show that paper and card board waste is generate higher than plastic bottles.

3.3.1.1. The economic value of plastic and paper and card board waste to Addis Ababa city

Solid waste management has a far-reaching impact on the urban development and overall economy. As urban economy grows so do industries of different sizes and other business grow. Increase in volume and types of waste (including toxic and other hazardous waste) demands fast removal, treatment and safe disposition. This costs a lot. However, failure to deliver the service would adversely affect citizens' health, which leads to an increase in the health service expense as well as a decrease in the people's productivity. High solid waste management cost, in the other side, is again a burden on the economy (Cointreau, 2004:3).

Waste is resources that can substitute the raw material and it can help to conserve and preserve the natural resource of the city by enhancing recycling and reusing activities. In Addis Ababa, there are places where waste is recovered. The key role in the informal waste recycling process is played by a market place named Minalesh Tera. Minalesh Tera is located in Merkato in Addis Ababa; one of the biggest open markets in Africa. In Merkato, the same kinds of materials are sold on the same block called 'tera' in Amharic; which translates to queue in English. Thus, people would go to the block of the material they are looking for and find different types of that material.

Therefore, the annual paper and plastic waste generation has major role to create an income also created foreign currency to the country. According to SWRDPO, in 2009 about 36 million birr were found from the recyclable waste.



Source, field survey, 2018 Figure 4. Economy value of paper and plastic waste

As depicted in figure1.4., paper and plastic waste have high amount of economic value which means if the cleansing association collect the generated paper and plastic waste annually they can earn about

128,115,000 birr from plastic and 87,052,000 birr from paper and card board and these also have an opportunities to recycling company who sold these waste to abroad and the country would have get millions dollars foreign currency. Therefore, paper and plastic waste is not waste it is possibly resources.

3.3.2. Quantifications of paper and plastics waste collection in Addis Ababa

Collection and transportation of solid waste contains the process of gathering of waste from place of generation, taking it to nearby public solid waste containers or transfer stations and lastly dumping it to disposal site (UNEP, 1996). As to Tchobanoglous et al., (1993) the term collection includes not only the gathering or picking up of solid wastes from the various sources, but also the hauling of these wastes to the location where the contents of the collection vehicles are emptied. According to the author, this location may be a material processing facility, a transfer station or landfill disposal sites. In many developing countries waste can be collected from, either by door to door or by using communal containers. Communal containers are placed in a place where the residents of the area are required to bring their refuse and dump into it. According to (Meaza cheru,2016) In each Kebele, containers are placed at common place near the main roads. The distance to these containers may be different for different households. For some it may be next door and for others a kilometre or more away. On the basis of schedules from the Kebele, employees carry bags of waste to the containers with a trolley. This is the primary stage of collection. Those who can't afford to pay the waste collection fees and those who live far away from the containers have to then carry their waste to the common place by themselves. The containers are yellow and have sizes of 8 m 3 . There are only 512 containers for the whole city of Addis Ababa; most of these containers are in a very bad condition. Push-carts used to collect waste from households in Addis Ababa and the formal waste management process respectively.

Inorder to know the amount of plastic and paper waste collection in Addis Ababa, both an interview and annual report were used. Thereby, there are 60 interviewer were randomly selected from the population to respond the amount of paper and plastic waste which collected per day by themselves.

There are about 617 cleansing association but recently they are merging to union and become 74 union who are engaging on collection, transportation, sorting and selling of solid waste. SWRDPO, 2019)

As shown in below figure1.4. , 50 respondent respond that average amount of plastic waste collected per day were 75 kilogram and 10 of the respondent respond that 65 kilogram plastic waste were collected.

Therefore, as mentioned on the above there about 617 cleansing association who are daily working in collection of solid waste from household? So, multiplying the average amount of collected waste with whole number of association or union or union 46.27 ton of plastic were daily collected and annually 16,888.55 ton of waste plastic were collected.

Source, field survey, 2018

Figure 1.4. Daily waste plastic collection

As shown in the below figure 1.5, 21 respondent were respond that 10 kilogram of paper waste were collected and 39 of the respondent respond that 12 kilogram of paper waste were collected per day, this indicated that most of the respondent are collected high amount of paper waste from other and this also show that 617 cleansing association could collect 7.4 ton of paper waste per day and 2,701 ton paper per year.

As result, a lot of paper and card boards are dump and disposed into open dump site and other open spaces.

Source, field servey, 2018.

Figure 1.5. Daily waste paper and card board collection

3.3.3. Performances of plastic and paper waste recycling company

Municipal solid waste management concerns individuals, community groups, government and NGOs government organizations and institutions as service users, service providers, intermediaries, regulators and partners. Accordingly, the group of service users includes households, small and big business organizations (e.g. hotels, restaurants, and supermarkets), industries and other service providers (e.g. hospitals and schools). Local governments are classified as service providers while the national government is the body that embraces institutions and organizations responsible for formulating institutional and legal framework of municipal solid waste management services. It is also responsible for the provision of assistance in case of cross-jurisdictional problems. Both formal and informal private sector actors are also considered as actual or potential service suppliers.

The NGOs governmental organizations are described as bodies that are operating between the private and the governmental realms. External supporting agencies are bilateral and multilateral international agencies involved in solid waste management issues as part of urban management or related programmers (Sch?beler and et al, 1996).

Plastic recycling is the process of recovering scrap of waste plastic and reprocessing the material into useful products. Since the vast majority of plastic is non-biodegradable, recycling is a part of global efforts to reduce plastic in the waste stream, especially the approximately 8 million tons of waste plastic that enter the earth's ocean every year. (Jambeck et al . 2015). This helps to reduce the high rates of plastic pollution.

According to SWRDPO report , there are about seven recycling companies participate on paper and waste plastic collection from the cleansing association and returning those materials for recycling purpose and sold it to foreign market.

In order to examine the performances of waste paper and plastic recycler companies, direct observation and interview were used. Therefore,

3.3.3.1. Performances of waste plastic collection of the recycling companies

Sixcompanies are participating on waste plastic collection and converting the collected materials for the stage of recycling purpose and three of them are exporting the materials and the rest are sold it to other companies.

According to the data obtained from the organizations expert, the capacity of the machine daily demand of waste plastic to be recycled were more than a million. However, only 2, 983 ton of waste plastic have collected and recycled in 2010 E.C half year report. (SWRDPO, 2010). Those organizations have a major impact on solid waste management of the city basically they have a capacity to reduce the recyclable waste not to dispose at landfill.

3.3.3.2. Job Creation and Foreign Currency

According to the data obtained from interview, waste plastics and papers recycling companies have created income for those who had not any work. Thus, there are 452 worker were employed in recycling companies and regarding foreign currency, three recycling companies were exported crushed plastic material for outside market. Thereby, the companies have found 1,064,389.8million dollar million dollars (SWRDPO report ,2018).

3.3.4. Identification of challenges on waste paper and plastic collection and recycling

In order to identify the major challenges on waste collection for reusing and recycling activities on this study an interview were used. Thus ,there are 90 respondent were randomly selected to respond about

the major challenges for collection ,reusing and recycling solid waste in Addis Ababa. Thereby the challenges were identified as followed .major challenge for reusing and recycling activities

3.3.4.1. Sorting of waste plastic and paper

Sorting is major activities that have to be done during disposing of solid waste at household level. In Addis Ababa it is usual to see mixed waste from the source which does not sorted in different collection bags. As shown in the below figure , most of the study respondent were responding that sorting is one of the challenges that discourage the collection of recyclable waste basically plastic botlles and paper and card board. Because of these, high amount of waste plastic and paper and cardboard are disposed to the river and other open spaces and impact on environment media and human health.

Source, field survey, 2018 Figure 1.6. , challenge of improper sorting of plastic and paper waste for collection of recyclable waste

3.3.4.2. Work place

The respondent for this study were cleansing association, recycler companies, and worda expert and sub city manager. Therefore during the interview, majority of the respondent responding that insufficient work place become a major challenge for collection of recycling and reusing activities. Whereas the rest of respondent respond that inadequate infrastructure such as water and electic power) were respectively challenges for collection of recyclable materials such as plastics and paper and card board.

As shown in the figure below, from the interview, work places for those who are engaged at collection and recycling activities was very significant issue that need to be addressed by concerned body to improve the city solid waste management especially recycling activities.

Source, field servey, 2018. Figure 1.7. Insufficient work place for collection of recyclable materials.

3. CONCLUSION AND RECOMMENDATION

4.1. Conclusion

Due to the flooding population's

growth, expansion of the urban area and increasing of economic activities in Addis Ababa, the amount of waste plastic and paper have increased drastically. Based on that in Addis Ababa, 42,705 ton plastic is generated annually and 43,526 ton paper was generated. Regardless, this study has also quantified the amount of waste plastic and paper and card board collection in Addis Ababa. Thus, the cleansing association replied that an average of 16,888.55 ton of plastic and 2,701 ton of paper were collected per annum. Therefore , the generation and collection rate of waste plastics and papers have quietly varied which mean high amount of the generated solid waste did not collected which simply disposed to open dump site and disposed to other open space.

In Addis Ababa solid waste become a source of income and foreign currency. There are about seven companies were participated on solid waste reusing and recycling business. These companies have undertaken their business starting from collection of the recyclable waste and converting into the recyclable stage like crushing the plastic bottles and shredding the paper and card board. Thus, 452 employee have got an opportunities to work in solid waste recycling activities which means even though job creation activity from this sector become less, few inhabitants could get job and has increased their income.

Related with income, three companies have exported their material to abroad and could have got 1,064,389.8million dollar foreign currency for the country. However, if the companies working very well, more than 10 million dollar will get from recycling waste plastic.

Regarding challenges on collection, reusing and recycling activities, work place for accumulation of recyclable waste and sorting of waste plastic and paper at household level were mentioned as major obstacle amongst other. Sorting solid waste at house hold level is very critical activities which can highly support the improvement of solid waste management in Addis Ababa. Therefore most of the respondent such as cleaning association, worda and sub city expert and recycler companies assured that sorting solid waste was very challenging activities which cannot be easily avoided with single participation of the government.

Secondly, working please determined the effectiveness of reusing and recycling activities. Solid waste were collected and transfer to temporary transfer station but depend on the composition of the collected waste temporary transfer station is vital for reusing and recycling purpose

Finally, plastic and paper waste can be seen easily in different part places of in Addis Ababa , the generation rate elevate than collection rate and also millions of birr are dumping to landfill due to inadequate recycling and reusing

activities because of the existing of low attention to this field without providing appropriate work places for those recycling companies.

4.2. Recommendation

While conducting this research, varioues gaps were identified in the generation and collection of waste plastic and paper and their economic value in Addis Ababa. Thus, the following recommendation forwarded with respect to the objectives of the research for further improvement of the collection , recycling of waste plastic and paper and card board by different actor who are responsible for these issues. As mentioned earlier, there are efficient studies regarding on solid waste characterization and composition of Addis Ababa city. Therefore, solid waste characterization and composition study should be undertaking. Sorting of solid waste is vital activity for waste plastic and paper collection and recycling purpose. Therefore the concerned body should formulate different laws and regulation regarding sorting activity, collecting the recyclable material and recycling waste plastic and paper activities has major function for environment, social and economic growth. Therefore, city administration shall encourage the recycling companies with providing efficient work place or should established one recycling center to those who are participated on recycling activities. Incentives for those who are good enough on collection, sorting and recycling activity shall be introduced. Evaluation and monitoring system should be improve and strength

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THE IMAGE OF 'THE MIRROR OF ISKANDAR' IN THE POETRY OF ALISHER NAVAI AND ITS COMPARATIVE ANALYSIS

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Abstract: Alisher Navai is one of the most famous and prominent figures in the Turkic speaking world. His literary heritage can be compared to that of any poet in the world. Of course, he did not have the power to do so. Navai mastered the best literary masterpieces created in his time as a representative of the literary environment of the 15th century, mastered the experience and traditions of artistic creativity, and as a result, developed them successfully, and most importantly, he had a natural talent for artistic creativity. In addition, the historical period required the appearance of a great Turkish writer in Khurasan and Movarounnakhr. These factors united in the creation of a great artist, such as Alisher Navai, who made an invaluable contribution to the spiritual world of mankind. For the scholars of the Oriental classical literature, 'Khamsa' was considered the greatest work, and dozens of writers tried to do it, but only Navai was able to create this masterpiece of 'Khamsa' among the Turkic poets. He studied very thouroughly the experience of his pious ancestors (mentors) in the field of khamsawriting, which can be seen in the example of 'Saddi Iskandari' (The wall of Iskandar). Navai introduced a story of Iskandar into his own 'Khamsa', just as Nizami, Khusraw and Jami did. It, first of all, describes Iskandar as a king, and then, contemplates on his wisdom. Navai imagined Iskandar as a knowledgeable person, and in this epic poem he provided details about his scientific research and fiction with a group of wise men. One of these scientific discoveries is Ainayi Iskandari - the Iskandar's Mirror, which is widely depicted and presents significance not only in Saddi Iskandari, but also in Navai's entire creation. This article deals with the history of the emergence of Ainayi Iskandari, the relationship between Nizami and Khusraw, comparison of the views of Navai with the views of his pious ancestors, as well as, new interpretation of Navai's ideas.

Key words: Nizami, Khusraw, Navai, Iskandar (Alexander), khamsa, interpretation, mirror, symbol.

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STRUCTURED ABSTRACT

Alisher Navai (1441 - 1503) lived and worked in the late Timurid's era. He is a Turkic philosopher who can easily be compared with such Persian classics as Sa'di, Firdavsi, Nizami, Khusraw, and Jami. One of his greatest missions in the world of artistic creativity was to protect the pure language, the interests of the Turkic peoples. He lived for the sake of this noble and universal goal all his life and created his works in Turkish in all the genres and types of artistic creativity. In his 'Risale' Temurid prince, Hussein Boyqaro states, 'the dead body of the Turkic language was exalted by the prophet-like life inspiring breath of Navai'.

Navai created 'Khamsa' (1483 - 1485) in response to Nizami and Khusraw texts for the purpose of manifesting his artistic talent, resolving global problems of all times, calling humanity for good deeds, and demonstrating possibilities of the Turkic language. The reason for that was the fact that the creation of 'Khamsa' in the end of the XII and later, in Persian and Turkic literature was considered the highest art for the creative potential and artistic talent of a poet. Navai strictly adhered to the tradition of the shapes of khamsanavvis - khamsa writing, which he had inherited from his teachers, but was specific in the content and interpretation. The above mentioned can be traced in 'Saddi Iskandari', the fifth and greatest poem of Navai's 'Khamsa'.

The theme of the Iskandar in the works by Navai was depicted quite widely. This can be observed in the variety of Navai's poems of different genres. The components of this thematics is quite expanded and it includes the followings and the issues related to their literary, historical interpretation: the biography of the Iskandar, Iskandar and bicornous, personality of the Iskandar, faith of the Iskandar, the Iskandar and the elixir of life, the wall of the Iskandar, the Iskandar and Greek scholars, the mirror of the Iskandar, and others. Therefore, we focused more on the works created by Navai in order to research how this theme was perceived and interpreted in the XVth century in Khurasan, how it influenced the indeology of the people of those times. Considering the fact that the topic under research is too wide, we decided to imit with the imagery of the 'Ainayi Iskandari' - the mirror of the Iskandar. It should be noted that Navai's creative work has been influenced by centuries-old Turkic and Persian literary experience, so to study the issue of Iskandar and the Mirror more comprehensively, and to have a full understanding of it, the works of such founders of khamsa writing as Nizami Ganjavi and Khusraw Dekhlavi, historical sources Navai studied were researched, their opinions were compared and the conclusions were drawn.

At the end of the XII century, in the XIII century, according to the canons of 'hamsa' writing, the last poem of the five had to be devoted to the subject of Iskandar this tradition was established by the first Khamsa written by Nizami (1141 - 1209), in his last episode, he described the story of Iskandar in detail. The Nizami's 'Iskandarnama' was written in 1197-1204, it consists of two parts, 'Sharafnama' and 'Iqbalnama', its size is over 10,000 bytes (verses or lines). Nizami describes the image of Iskandar in three aspects, primarily as a conqueror, a wise man and the saint. In the 'Sharafnama', the story of Iskandar's dignity is told, as for Iqbolnama - the story of his wisdom and prophecy. The first mirror reflecting the qualities of Iskandar is described by Nizami in Sharafnama, and the second mirror in Iqbolnama.

Khusraw Dekhlavi (1253 - 1325) established the tradition of 'Khamsa' writing by replying to Nizami (1299 - 1302). He used the experience of Nizami, but he made all effort not to repeat him by working within the traditional style. For instance, in Khusraw's 'Khamsa' the dastan of 'Ainayi Iskandari' comes the forth. His wish to be original can be felt in the fact that he changed the name of the dastan about Iskandar. In general, there are many works in oriental literature named 'Iskandarnoma'. The author of the first Khamsa, Nizami, also named his dastan in the same manner. But we can observe the

signs which prove the fact that he wanted to be original. They are traced in individual names given to each part of the dastan. In particular, Khusraw called his dastan 'Ainayi Iskandari', Navai 'Saddi Iskandari', Jami 'Khiradnamai Iskandari', Abdibek Sherazi 'Ayini Iskandari'. It is natural that these names are directly related to the content, and they hint at the points the author paid a particular attention to and novelties. Among such prominent khamsa writers as Nizami Ganjavi, Khusraw Dekhlavi, Abdurakhman Jami and Alisher Navai only Khusraw Dekhlavi specifically researched the term 'Iskandar's mirror' , and promoted the idea that oriental people had the magical mirrors much earlier than westerners.

Navai's viewpoints and information on Iskandars' mirror differ from those of Khusraw. Although his ideas related to Iskandar are reflected mainly in 'Saddi Iskandari', this theme is also discussed in 'Farhad and Shirin', 'Sab'ai sayyar' (Seven planets), and in such historical pamphlets as 'Tarikhi anbiya and hukama', 'Tarikhi muluki Ajam', and Persian lyrics. Navai returned to the topic of the Iskandar's mirror again and again during his life. In addition to approaching to the image of mirrors describing Iskandar just as Nizami and Khusraw not only as a historical image, but more as to the symbolic-imaginary hero, the image of Iskandar's mirror in Navais poetry is connected with Sufism - related viewpoint. In order to understand his ideas, one should be familiar with the ideas of tasavvuf (sufism) education.

In the article, the above-mentioned literary source was streamlined as much as possible, and the author attempted to unite them under certain common themes. The article is made up of two major parts, the first part is about Iskandar's mirror, and the second is about the second mirror of the Iskandar. The first chapter deals with the views of the first mirror on the comparison of Saddi Iskandari, Iskandarnoma and Ainayi Iskandari, commentaries on the interpretation of Navai's 'Farhad and Shirin', the Turkic and Persian lyrics are presented.

In the second part, Navais viewpoints on the second mirror reflected in his Layli and 'Tarikhi muluki Ajam' are compared to those of Nizami and Khusraw; this part also presents a brief literary and historical genesis of the information provided by Navai in 'Tarikhi Muluki Ajam' (History of persian kings). The author brings forward evidence to prove the fact that Iskandar's mirror is related to Alexandrian beacon, one of the seven wonders of the world

Key words: Nizami, Khusraw, Navai, Iskandar (Alexander), khamsa, interpretation, mirror, symbol.

INTRODUCTION.

The mirror is one of the most important images of Iskandarnama created in the Orient. It has also drawn artists' attention as a motive for Iskandar's wisdom and subtlety. In order to fully understand the image of Iskandar's mirror in Navai's works, it must be studied in a comparative aspect, as this phenomenon in the poet's creativity is not spontaneous, and necessitates the study of the individuality of Navai's creativity and the need to determine his poetic talents. This can be explained by the followings words about comparative literature studies 'Finding differences and similarities in the literature and specialists on comparative literature studies, as well as defining the history of ideas, themes, feelings, genres and places.' (?ztekin, 2007: 671). One of the most important components of stories about Iskandar is the image of the mirror , and so is in Alisher Navai's. He left some information about the mirror qualifying Iskandar's

personality. In contrast to his pious ancestors (pious ancestors, usually used to describe mentors or scholars in sufism), Navai narrates on two mirrors of Iskandar. Their interpretation, history, peculiarities are presented in the poet's 'Saddi Iskandari', 'Layli and Majnun', 'Sab'ai Sayyar', 'Tarikhi anbiya and hukama', Turkic and Persian lyrics.

I. FIRST MIRROR.

1. In Navai's 'Saddi Iskandari' (Iskandar's wall).

Navai gives the information about the first mirror in 'Saddi Iskandari'. There, he describes Iskandar's campaign to China. Among the gifts from the khan, he mentions a 'Mirror of China'. One of its wonderful qualities was the fact that both of its sides always shined as the sun and the moon. Two sides of the mirror had two symbolic functions, according to them, when the king was listening to the complains of the people, and if the second party rejects the claim of the first party, the king did not have to address the witness, it was enough to look at the mirror: if the words were true, his face appeared in the mirror, if not, then it was not reflected in the mirror . The second side of the mirror had such a function, according to which when king was at a party, the people present there could look into the mirror, and if they were moderately drunk, their faces were reflected as they are, but if they were heavily drunk, their reflections looked abnormally prolonged and flat. As a result, they had to escape this situation. It should be pointed out that the quality of truthfulness of the Chinese mirror given by Navai is characterized by sources, especially in folklore, by means of various living and lifeless objects. For example, in Firdavsi's 'Iskandarnama' it is a 'tree', in other words, a speaking tree with a similar feature.

Iskandar is surprised at this unique gift and decides to spend winter in China. He wants to create two objects - a mirror and astrolabe. The four hundred scientists under Iskandar were divided into two groups, for one of them, Iskandar appointed Plato and Socrat as the heads, and for the other Aristotle and Buccane. One group dealt with the world, and the other with the galaxies. They created two round objects, from the mixture of ores, the first group made an astrolabe from lead and copper, and the second, a glossy steel mirror.The astrolabe reflected the sky objects, their secrets, and the mirror reflected the world we live in, the seven climates of the earth (Navai, 1993: 315 - 344). This was the first mirror made in China which characterized Iskandar. Navai provides a typical interpretation of this image in 'Farhad and Shirin'.

2. In Nizami's 'Iskandarnama'.

There are special notes about the first mirror in Nizami's and Dekhlavi's Iskandarnamas. According to Nizami, after Iskandar defeats Zangiys he was able to become

powerful and started to prepare for the war against Darius. And then he needed a clear mirror. The mirror had not been invented before Iskandar. To do it they first heated gold and silver in a mold; but the reflection in it was not correct, each metal separately reflected the objects. Then, using the iron, he places the gems to the iron and makes the shape of a rectangle, a hexagon, but when the target is not formed, they form a circle and, only then, regardless of whatever side you look into it from, the image is correctly displayed. Whoever looks at the mirror, the window shows a smoothness from the roughness. Iskandar is the first to look at this mirror, and when he looks, the reflections in both gems come together, and the happy king kisses the mirror. This is, according to Nizami, what the bride's custom of kissing the window originates from (Ganjavi, 2012: 80-81).

3. 'Iskandar's mirror' by Khusraw Dekhlavi.

Khusraw takes a different approach to it, he not only descried the mirror in his book, but made it the title of the book. By doing it he aimed at making this book original and different from others, and to emphasize the new ideas about 'Iskandar's mirror'. He does not speak about the mirrors depicted by Nizami and Navai, he suggests that the mirror made by Chinese masters in the contest with roman masters was the mirror qualifying Iskandar; and thus expresses the most extraordinary idea according to which, this mirror belongs not to Iskandar, but to the Khaqan (Dekhlavi,1977: 162). As an evidence for that he uses the legend which describes the argument between the chinese and romans. According to this story create a mirror reflecting the ornaments as real. As a result, it reflected the beautiful paintings the romans drew. But Iskandar gets amazed at the mirror made by the Chinese:

Chu kam dide bud oina pesh az on,
Badidan on va shud dasti hayratgazon.

(He saw very few mirrors before,
and having seen this he was
amazed)
(Dekhlavi,1977: 141)

COMPARISON.

This legend in Khusraw's story was used from the 'Iskandarnama' by Nizami, but Nizami had used it in a completely different point and for a completely different purpose. He named the object made by the Chinese not 'mirror' but 'suffa' which means stage, wall. In other words, he does not stick to the idea of the object created by the Chinese being the mirror. He uses this legend not to compare the degree of the intelligence between peoples, but only to tell a story related to the Iskandar (Ganjavi, 2012: 225-227). One can call an object reflecting a picture as a mirror. Therefore, he interprets as the first mirror reflecting (qualifying) the Iskandar.

Navai was not influenced by Nizami and Khusraw relating the

first mirror, but his views are fundamentally different even though Amir came close to Khusraw. According to Navai, the mirror was invented by the peoples of the east earlier than Europeans. Iskandar was surprised by the invention of the Chinese, who were surprised by the strangeness of Iskandar, but he refers to the mirror of Nizami as the mirror of Iskandar for the first time in the world. Probably other sources interpret the mirror as Iskandar's mirror, Khusraw argued that attributing it to Iskandar was a mistake. Both Nizami nor Navai when giving information about two mirrors meant the mirror belonging to Khusraw Khan. One of the new things in Navais descriptions is that he refers to the mirror not as an ordinary mirror, but a mirror with a secret or mysterious power. Because eastern people thought that Iskandar had a magic mirror before he made his campaign to Chin. It is this supposition that brings to conclusion that the mirror created by Iskandar in China was not ordinary but with a magic power. Therefore, in his descriptions Navai paid a lot of attention to magic. As a result, without this quality, it became difficult to understand the author's aim. It is also worth attention that majority of cases events described in 'Iskandarnama's by Nizami, Khusraw, and Navai are related to Chin.

4. Interpretation of the image of the Mirror of Iskandar.

'Iskandarnama', 'Iskandar's mirror', and 'Saddi Iskandari' are historical books; therefore, they contain some information about the reason, history, and some characteristics of the mirror. In these books the mirror is a hero that shows the attitude to the wisdom of Iskandar, science and people of science. It is can be said that it reaches the level of a real hero in ghazeles of the east, in Navais lyrics and in such masnaviys as 'Farhad and Shirin', 'Sab'ai sayar'. In Navais lyrics it had a symbolic character and mainly expressed the truth of wisdom. This is as true concerning Navais Persian lyrics as that of Turkic.

Although Tasavvuf teachings do not relate on Iskandar's mirror, there are educational notes concerning the mirror. The mirror is a specifically refined object, in the language of people of tasavvuf it is the heart of a perfect man. As names, ancestry, and qualities are called mirrors and they usually fully reflect the soul of a person and they are always together with them. (Sajjadi, 1370: 45). So, in other words, the heart of a human was called the mirror based on the fact that it reflected the personality, qualities, and names of the God. If based on this point of view, the characteristics of the Iskandar connected to the mirro described by Navai can be properly discovered.

4.1. The interpretation of the image of Iskandar's mirror in 'Farhad and Shirin'.

A typical example of the interpretation of this image can be found in 'Farhad and Shirin'by Navai.

Just as in 'Hayrat al-abrar', in 'Farhad and Shirin' too, the image connected to the theme of Iskandar plays an important role. After Farhad grows up, his father offers him the throne and the crown. Farhad did not want this, so, he refuses and apologizes for this. But as his father the shakh insisted he agreed on one condition. Farhad wanted some time to learn the issues related to the development of the country, its reign, and only then to accept the throne.

As Farhad gained experience in ruling he entered one of the secret treasuries of the sultanat. The prince did not value gold more than black stone, but at the end of his visit he sees a crystal chest. The chest was made from pure crystal and it was difficult to believe that it was made by a human. No one knew how it was made, but it was closed by a lock decorated with precious stones. When Farhad tried opening it, the khan told that no one knew the secret of the chest, and he himself was not able to open it. In addition, they did not have the key. This increased the interest of Farhad. No matter how much they tried to distract him from the chest, they were unable. Therefore, they had to reveal the truth and open the chest. When they opened the chest they found 'rakhshanda mirat" a bright mirror inside it. The mirror was made by scientists and all its secrets were written on its back: "this mirror can image the world; it is as bright as the sun; its creator is Iskandar from Rome; the mirror is the memory from him to the people of the world. Iskandar made this mirror with four hundred scholars as wise as Plato, aware of the fate, secrets of the sky and stars. They worked hard for some years on it. This mirror was the world of wisdom, a rare thing. Anyone trying to open it if can, when picks it up and looks into it, will see in it everything that is predicted for him by fate. By the will of the God, the mystery of the God can be seen in it. But it is very hard to open this secret. To do it one must suffer both physically and spiritually. The one who tries to do it must go to the mount in the north of Greece and kill three monsters there. On one of them there is a dragon made by the anger of the god, on the second was Ahraman who gained ill-fame for his evil deeds, and on the third mount, there was a mysterious temirpeyker-steel mirror (this mysterious object was also related to Iskandar). After this place, the person had to go to the forth one, which was even more difficult. The one who reaches the forth mount will see a cave, inside which Socrates lived. The one who reaches this cave would see Socrates who could help to solve all his problems if alive. If Socrates died, the person who prayed to him can get rid of all his problems.

When Farhad met Suhayla, the salaf for the first time, Suhayla told Farhad that he had been waiting for him for several hundred years and that he had read from 'Jamaspnama'

(the book about Persian healer Jomosp, it described the events which were to happen in the following three thousand years): "A thousand years after me, a prince named Farhad will come from Chin, and he will his life to risk and open the secret of the Roman Iskandar. But before that, Farhad will have to kill the dragon, he will defeat the treasure, Ahraman and get the ring of Solomon. When he opens its secret, he will get Jamshid's cup. Farhad must handed all the gains to Hakan, he saw Socrates and Iskandar's mirror. Socrates keeps his word and turns to Chin and looks at the mirror, all of a sudden. But before that, Farhad has to kill the dragon and get the treasure, defeat Ahraman and get the ring of Solomon. But when he opens the secret, he should devote everything to the khan, the fact that he has seen Socrates and got the mirror of Iskandar was enough for Farhad. He should remember the words of Socrates very well, and everything that he saw in the mirror will happen to him after he returns to Chin". While Suhayla was teaching Farhad about the catastrophes he will encounter on his way, she also mentioned the magical instrument of Iskandar. She also told that he would find Jami Jam (Jamshed's Cup in Sufism describes the source of wine as the source of wisdom) there, on its sides Iskandar had left some notes which could help Farhad in finding Socrates. Farhad meets with Socrates. During their talk Socrates told Farhad that this world was temporary and the people seeking divine truth always had many difficulties.:

Agar topsa Sikandar mulki zoting,
Gar o'lsa Nuh umricha hayoting,
Chu ketmoqlik keraktur bot, agar kech,
Hamul davlat bila bu umr erur hech.
(Navai, 1992;150)

(Even though you gain the wealth of Iskandar,
And your life lasts for as long as Noah's days,
Still your time will come early or late,
Because all the wealth can never change any fate)

In other words, even if you have the wealth of Iskandar, and your life is as long as Noah's, still you will have to leave, early or late. Then, all the wealth is nothing in your life. With these words the poet did not mean that Iskandar spent his life in vain by collecting all the wealth he had or that it was too long to live as Noah did. By mentioning Noah as the person who lived the longest , and Iskandar as the richest man ever, Navai wanted to express his most important point of view: no one can live forever, the wealth is not the most important as it is temporary, i.s. the world is temporary. Socrates taught Farhad that the main aim of living is obeying the God, finding the way towards meeting with Him.

When Socrates was solving the problems, Farhad shot an arrow at the mirror fixed on its stand, this arrow also revealed its mystery. He stated that when someone looked into the mirror, everything he saw there was sure to happen to him. In

other words, that person would fall in love, and gradually grow mad from love. He would not have another chance to see the same thing again. After Farhad reached Chine, he saw his destiny in the mirror, as well as Shirin. He became unconscious from the beauty of Shirin. Here, his adventures related to the mirror ended and he went to Armenia.

In order to understand the interpretation of the image of Iskandar's mirror in dastan one should be familiar with dogmatic views. In the book, the mirror symbolizes the soul of a person longing for gaining the Devine truth; so the views related to the magic power of the mirror had a similar symbolic character. Understanding the image of the mirror in 'Farhad and Shirin'as the symbol of a person searching for the divine truth, the literary interpretation of the mirror; so one should presume the ideas related to the mystery of the mirror and the ways to understand it as symbolic means. The views on the mystery of the Iskandar's mirror and its understanding are actually the discovery of the heart of the learner (divine truth seeler) on the road of love; discovery of one's own heart; or the discovery of one's self. They are not related to the historical Mirror of the Iskandar described in 'Saddi Iskandari'. In 'Saddi Iskandari', there is only information about the fact that it had a secret power and could reflect view of the whole world. It does not have any word about it being similar to the one in 'Farhad and Shirin'or about the ways to reveal its secret. This is also confirmed by the fact that the adventures of Farhad connected to the mirror come under the problem of perfect manners. It is true that facts regarding the Mirror of Iskandar from 'Farhad and Shirin' and the information in 'Saddi Iskandari' are generally similar: the mirror in 'Farhad and Shirin'was told to be made by four hundred scientists, while in 'Saddi Iskandari', it was written that Iskandar had totally four hundred scientists and two hundred of them worked on creating the mirror; the poet also mentioned that the mirror was made in China, and it was shown to the khan. But there is no information about it being given to the khan as a gift. As for 'Farhad and Shirin', there the poet wrote that it was found in the treasury of the khan.

'Saddi Isakandari' does not provide information about the scientist who was in the head of the group; but in 'Farhad and Shirin', it is stated that only Socrates (not Aristotle) knew the secret power of the mirror. So one can conclude that the mirror was made by such scientists as Plato and Socrates with a group of other scientists; or if we take into consideration the fact that Socrates was one of the four hundred scientists, no objection may be left as regards the person who knew the secret of the mirror. This demonstrates not only the fact that Navai strictly followed the law of

proportionality when creating the artistic imagery of Iskandar's Mirror just as in other cases throught his all life, but also bears evidence to the fact that chronologically he used the same sources for writing 'Saddi Iskandari' as those he used for 'Farhad and Shirin'.

4.2. Interpretations in Navais lyric poetry

There are a number of various interpretations of the image of the mirror regarding its essence function, characteristics, and shape in Navais lyric poetry. The image of the mirror in the poet's ghazel writing was applied identically in his love poems, poems containing sufistical viewpoints, and rindona (telling the story of dervishes)poems, and in many cases, the images of Jamshed and a cup come together in them.

4.2.1. In Turkish lyrics.

The mirror in Navais love ghazeles written in Turkic plays as important role as all other traditional images. Navai in one ghazel bespeaks the cruelty of the beloved, travails of being parted and weakness of the person in love; in the last two lines, he concludes his views and positively evaluates all torture that the beloved woman causes to the lover, even he considers it to be necessary because:

Ma'shuq qilur jilva, har kimki aning ko'nglin
Dard o'ti kuli birla ishq oyinafom etmish.
(Navai, 1987: 244)
(The image of beloved will mirror in the heart
Which polished was with the ash from the fire of love)

In other words, the one whose soul glistened as a mirror polished with ash, then his soul will reflect the beloved. Navai used the process of such a household routine as cleaning dishes with ash to depict the image of ideas related to love. But this was not ordinary ash it was "ash of pain"; and in order to reflect the face of the beloved one should only use 'ash of pain'. The requirement of love to be imbued with pain - is one of the main features distinguishing Navais love concept from that of pious ancestors' (scholars). The poet concludes his ideas connected to this with the following words:

Iskandaru Jamliqdur ishqingda Navoiyg'a,
Kim raxshing izu na'lin ko'zgu bila jom etmish.
(Navai, 1987: 238)
(Your love makes Navai as great as Iskandar or Jamshed,
He can turn the print of the horse foot into a cup and its shoe into mirror)

In other words, (hey, beloved), Navai in his love to you is as great as Iskandar and Jamshed, because he turned the print of the horse foot into a mirro, and its shoe he used as a cup. In the history of literature, Iskandar was famous for his mirror, and Jamshed for his cup. In the above verse, the person in love is proud of being as superior in love as kings, even great as Iskandar and Jamshed because he had the print of the horseshoe which could replace Iskandar's mirror and Jamshed's cup. The lyric hero when saying: "Iskandaru Jamliqdur ishqinda

Navoig'a" does not mean he is equal in love to Iskandar and Jamshed, but he means that he reached the same majesty in love affairs as did Iskandar and Jamshid in kinghood. To prove that he states that in order to see what is happening in the world, Iskandar needs a mirror, and Jamshed needs a cup, but for him to understand the truth he has his fair one's horse trace and horseshoe. The way the lyric hero thinks - from a part to the whole, from the event to the essence - is based on the theory of beatific vision. In other words, he holds forth on his beloved seeing the trace and the horseshoe of the horse she rides.

The mirror in Navais lyrics is also compared to the face of the beloved, bu doing this, the poet achieves the harmony of both inner and outer features.

Labingdur Jomi Jamshidu yuzung
mir'oti Iskandar,
Musallamdur sanga husnu jamol
ahlig'a sultonliq.
(Navai, 1999: 190)
(Your lips are like the cup of Jamshed,
and your face is as Iskandar's mirror,
Indisputable is queenhood for you
among the beauties of the world)

In other words, your lips are the cup of Jamshed, your face is the mirror of Iskandar, therefore you have the features peculiar to the queen among the people of beauty. In these lines, the poet draws out logical conclusion which states that as long as you have your lips and your face, just as Jamshed has a cup, and Iskandar has a mirror, you can be the queen in the world of beauties. The ghazel expresses divine ideas; each image is reposed with symbolic characteristic. In particular, due to the fact that the mirror is used to express the heart of an accomplished person which can be the home for the personality, quality, name and acts of Allah. In fact, as we have already mentioned above, an accomplished and faultless person is called 'mir'ot' (mirror/reflection) (Mir'oti Haq, Aynai Rakhman (names given to Allah)) (Uludap, 1995: 72). It is well-known that in classic oriental literature the cup and the mirror have a symbolic meaning; but this cannot be always applied to the cup of Jamshed and the mirror of Iskandar. While studying the heritage of Navai, we often come across the the cases when these two images are used to express symbols of a divine knowledge. For example, it is very well known what an important role they play when Farhad from 'Farhad and Shirin'was gaining knowledge. In this ghazel. There is also a hint at the fact that Iskandar's mirror was the mirror which showed the sight of God. Because the face of a human was considered to be the reflection of the divinity.

In Navais lyrics, there are also ideas related to the Iskandar's mirror which tell that it is impossible to change the fate, all is done according to the will of Allah, about people who denied to require to accomplish the worldly deeds, but attempted to leave them. In such cases, one can see the the reflection

of the poet's conception about temporality, and Iskandar and his mirror are repeated in such discriptions as undeniable evidence. For example, in ghazel number 107 from 'Navadir an-nihaya', the poet states the followings about the destructive power of titles and wealth on humans:

Bo'lur tiyra ko'zgung, to'lar zahri Joming
Tutaykim, bo'l Skandaru Jamg'a solis.
(Navai, 1987: 81)
(Will turn your mirror dim, and fill
the cup beheld by you with poison,
Wealth. Though you are the third
man after Iskandar and Jamshed)

Which means, even if you are the third after Iskandar and Jamshed, wealth will make your mirror dim and fill your cup with poison. In these verses the images of the mirror, cup, Iskandar and Jamshed shape a kind of system, which served as a kind of proof to the fact that the world is ruthless, there is no eternity in it; therefore you must not get attached to it. In ghazel number 396 from 'Badae' al-vasat', you can also see similar views:

Soqiyo, oynagun jom bila
Bir dam etgil meni Iskandaru Jam
Ki, na Jam qoldiyu ne Iskandar,
Itti ul jom ila ko'zgu ham.
Shod bo'lkim, ikki olam komi
Arzimaskim, yegasen bir dam g'am.
(Navai, 1999: 235)
(Come, cup-bearer, with the
mirror-like cup
Turn me into Iskandar and Jam
for a moment,
As both Jam and Iskander,
And their cup and mirror are gone.
Be happy, as the aims of both worlds
Are not worth of a moment of grief)

Which means: "Hey, cup-bearer, give me a mirror-like cup (here, a cup full of wine able to reflect) and turn me into Iskandar and Jamshed, as both Iskandar, Jamshed, and their mirror and cup are gone. Therefore, it is better to entertain as all the aims of the two worlds are not worth a moment of grief. As Navai stated earlier, he wanted to get rid of himself, to make his self foreign to him. And he mentions wine as the best instrument of achieving this. He considers that when he gets the wine and drinks it, he will be able to forget about himself for moment and sink into a real love. It is noteworthy that he compares getting wine from cup-bearer to becoming equal to Iskandar and Jamshed. One can also understand it as the desire to be as happy as these rulers even for a moment, or to turn into a person who found divine wisdom, the lover who achieved his love just as Iskandar, become the slave of love. In the following line, the poet while telling that the world is temporary, states that the aims of both worlds are not worth being sad. Instead, he states, it is better to sip from the mirror-like cup of the cup-bearer and for a moment become the people who realize the essence of this world. These viewpoints of Navai expand our notion of Iskandar. It should be mentioned, that the tradition of depicting Iskandar as the representative of the divine love in oriental literature existed before Navai. For example, in the fourteenth century, in 'Iskandarnama' by Ahmadi, there is

a similar hero. Literature speasialist Melike Gukchan describes this as follows: "Dьnya, devletler ve hьkьmdarlar tarihine уцneltilmis bu dikkat iзerisinde efsanevi kahraman Iskender, Kur'an'daki Zьlkarneyn kэssasэyla iliskilendirildipi iзin sadece gьз ve iktidarэn depil, aynэ zamanda yeryьzьnde adaletin, hakkaniyetin ve tevhid mucadelesinin temsilcisi gibi gorunmektedir" (Tьrkdopan, 2009: 761).

The images in the verse form a certain system and create a linked character: the verse starts with the address to the cup-bearer which introduces the image of the cup, the cup is linked to Jamshed, the quality of the cup - mirror-like relates the image of Jamshed to one of Iskandar, and they come side by side. In the following line, the image of Iskandar is used in the light of the mostly used by Navai connotation - temporality of the world although in the previous line he is described as the symbol of an educated person. It should be mentioned that the Iskandar in Navais poetry is a hero with syncretic qualities uniting various content and shades of meanings. Sometimes this hero even has inner oppositions as regards certain qualities.

There are also in the poet's lyrics words that are related to the description of the shape of Ainayi Iskandari. For example here, Navai writes:

Xush ko'rarmen dahrni sovug'
su birlakim, bu yoz
Bo'ldi issig'din quyosh ko'zlarga
chatri sanjari.
Bir ayoq muzluq su Jomi Jamdurur,
nevchunki bor
Bir ayog' og'zicha muz oyinayi
Skandariy.
(Navai, 1999: 416)

In other words, I like the cool water of the sea, because this summer the sun rays are like sharp knives to eyes, in this heat a bowl (cup) with ice is like Jamshed's cup, because inside it, there is a piece of ice like Iskandar's mirror in the shape of the bowl (kosa a round shaped bowl). The reason why in the second two-lines the bowl of icy water is compared to the cup of Jamshed is that, according to the poet's statement, it contains a piece of ice which looks like Iskandar's mirror. It is known that Jamshed's cup is called "Jami getinamo, oynagun jom" in classic literature. Jami getinamo is the cup showing the world, and oynagun jom means the cup as clear as the mirror. The relationship between the comparison of the ice piece to Iskandar's mirror and comparing the cup to Jamshed's cup because there was a round piece of ice in it is seen in the fact that the wine poured into Jamshed's cup was so clear and pure that it could reflect events in the whole world, as for the piece of ice put inside the cup, it reminds Navai of this quality of Jamshed' cup.

By saying 'Xush ko'rarmen dahrni sovug' su birla' Navai is based on the tradition of cooling drinking water by putting pieces of ice inside the dish. By using a metaphor on the basis of objective reality and routine

situation, Navai means that just as Jamshed could see the whole world inside his cup, drinking icy water could enable a thirsty person drinking from it with pleasure and show the world in bright colours. So, comparison of the ice piece to Iskandar's mirror can be justified with both its shape and its content. As we have seen above, the image of Iskandar's mirror was used in Navais Turkic lyrics mainly to express divine truth. This image was also quite active in the poet's Persian lyrics, and often it was paralleled to the soul and heart of a beggar.

4.2.2. In Persian lyrics.

In his Persian ghazels, Navai clearly describes the main meanings of Jamshed's cup and Iskandar's mirror expressed in his poetry:

Dil shavad Jomi Jamu Oyinayi Iskandari,
Har gado, k-ash nushad
Iskandarvashu Jamshedvor.
(Navai, 2002:8)

The poet in the part before maqta of the ghazel about dervishes gives his considerations to the qualities of wine as followos: "any beggar if drinks from this wine as Jamshed and Iskandar, his heart will become Jamshed's cup and Iskandar's mirror". Here by wine he means the pleasure of love, desire, unless the person in love goes through this in his inner feelings, he cannot reach the state of a real lover. As they say, Jamshed cup shows the events in the world only after it is filled with wine. So, truth seeker if finds pleasure and joy of love, his heart brightens and the essence can be reflected. In this line too, the author draws a parallel line between the images of Iskandar, Jamshed, the mirror and the cup to the images of a beggar and his heart. The heart of the beggar must enjoy the wine as kings do in order to be able to reflect the essence as Iskandar's mirror and Jamshed's cup.

Here, there one can feel an equivocal meaning. First of all, the beggar has to drink from the wine in order to have the heart that can show the mystery of events, be bright enough. Secondly, Iskandar and Jamshed drank from the wine being described; therefore, one of them got the mirror that can reveal the secrets of the world; and the second has the cup. Should you be able to drink from that wine your heart will represent the essence of the whole reality. This kind of verses in Navais works show that Iskandar's mirror and Jamshed's cup are used to illustrate poetically the heart full of knowledge which belongs to a scholar.

Worldly and theological viewpoints of Navai related to the image of the mirror are based on its ability to transmit the world. Out of this ability he creates various metaphors. For instance, in one of his ghazels he calls it "Oynayi Sikandaram" (Navai, 2002: 163), in another one "Xizrro obi hayot Oynayi Iskandar ast" (Navai, 2003: 206). It is worth attention that when the hero tells that he has Iskandar's mirror he means that he is aware of the science of history, has scholastic knowledge, rich life experience, and

that the wine (divine quality) brightens his heart and informs him of the essence of the world. The new feature of the mirror that we came across in this ghazel is that it is not only capable of informing about the future fate, celestial secrets, but also can provide information about the past truth.

The metaphor where Iskandar's mirror is compared to amrita is also worth attention:

Mardi rahibinro dili mahfinamo
v-on Jami Jam,
Hizro obi hayot Oynayi Iskandar ast.

In other words, the heart of the pir (in Sufism a person who is called 'pir' has a role of leading and instructing other people on the Sufi path) which shows divine secrets is like Jamshed's cup, as for elixir of life, it is like Iskandar's mirror for Hizr. We know that Jamshed's cup symbolizes the heart of a consummate person as a metaphor to a container of wisdom. When creating these metaphors, as grounds, the poet used the their quality of demosntrating or reflecting celestial secrets. Moreover, he implicitly meant that wine is a pleasure, desire for real love. However, except in 'Tukhfat al-afkar', nowhere else, we come across the idea that elixir of life for Khizr was Iskandar's mirror. Besides being an ever-living saint blessed by God's mercy, he also was a hero ware of the celestial truth, essence of this world, supporter who could foresee the future; and therefore, he appeared in the form of a savior when someone lost their way, or was in trouble. It was Khizr's mission of a savior that led to interpreting him as a 'pir'.

Here, Navai tries to explain Khizr's wisdom, ability to foresee the events by means of Iskandar's mirror which was the glass that could mirror the world in itself. In other words, the image of the spring with elixir of life, its purity was similar to Iskandar's mirror, as if Khizr could see everything happening in the world on the surface of the spring with elixir of life. The images of the pir, the heart able to reflect mysterious secrets, and the cup correspond to the images of Khizr, elixir of life, and the mirror in the next line. Besides the comparison of the hear to the cup, and the elixir of life to the mirror, there is also connection between the hear revealing secrets and the elixir of life. In "Tarikhi anbiya and hukama" Navai states the followings about the elixir of life: "And some people say that Allah granted saint Khizr with mystic knowledge of the other world and for that he gave him the elixir of life" (Navai, 2000: 95). In other words, when he tells that Khizr was granted the elixir of life he means that he became the master of numinous knowledge. Accordingly, just as the poet used Khizr's leadership qualities as the raison d'etre for comparing him to pir, the abilities of the cup and the mirror to reflect the whole world for comparing them, so were well-grounded his attempts to compare the heart representing mysterious truths to the elixir of life.

In some of Navai's Persian ghazels, the poet uses simile where he sometimes compares a beggar with his old ceramic cup to Iskandar and his mirror, and sometimes contrasts them. For example, in his tatabbu' (a poem written in reply to some other poet's poem) to the ghazel by Mavlana Shakhi he states:

Dorad gadoi maykada az bodavu qadah
Oynayi Skandaru Jomi Jame digar.
(Navai, 2002: 19)

In other words, a beggar from the wine house besides his wine cup, he also has Iskandar's mirror and Jamshed's cup. As it is described in the following lines of the ghazel, besides his cup with wine, the truth seeker also had Iskandar's mirror and Jamshed's cup - his pir - mentor, who was his secret keeper and pain healer (piri mug'on, sirdosh). The images in the ghazel can be interpreted as follows: his piri mug'on (spiritual mentor) was the scholar who gain celestial knowledge, a perfect man, and wine was the share of his knowledge. The lover in the presence of the pir obtains the divine knowledge, so for him both the mirror making aware of the worldly events, and the cup filled with wine is his spiritual mentor and nothing else. This is because due to the teachings of the mentor a student's souls brightens up, his intellect increases. If Iskandar came to know the world through his mirror, and Jamshed through his cup, the truth seeker understands the essence of the world thanks to his mentor- pir. That is, Navai parallels the images of Iskandar's mirror and Jamshed's cup with the image of pir - spiritual mentor too.

In his tatabbu' to Hafiz Shirazi's ghazel "Nadosht", Navai shows one interpretation of these images:

Doram sofoli ko'hnai
mayxona pursharob,
K-in oina Sikandaru in jom Jam nadosht.
(Navai, 2002:131)

That is, I have an old ceramic cup full of wine from the wine house, it is both a mirror and a cup for me. Neither Iskandar has such a mirror, nor Jamshed has such a cup. The pith and marrow of this verse is expressed by means of four images: a ceramic dish, wine, a mirror, and a cup. Due to the fact that ghazel is about cognition of celestial knowledge, the meanings these images express as means of intellectual metaphors play a significant role. The mirror is a specifically processed object; among sufistic scholars it is used to express the heart of a perfect man, the reflection of a perfect man is his appearance, because breed, quality, and names are also called mirrors, and all of those qualities are perfectly personalized in a perfect man (Sajjadi, 1370: 45). Cup (Jom) is used here to express a bowl (container) to drink something from, as metaphor it expresses a heart of a knowledgeable man-mentor full of wisdom (Sajjadi, 1370: 280). By wine the poet means the victory of love; in addition, wine here also represents the meaning close to it - the pleasure one gets from the heart of a mentor (Sajjadi,

1370: 751). The wine house - is the soul of a perfect scholar, it is full of desire and joy, and divine knowledge (Sajjadi, 1370: 752). Ceramic dish is the heart of the dervish (Kamilav, 2012: 12-16), the application of such expressions as broken ceramics, old ceramics express meanings close to each other.

If the poem is analyzed in such a way, we shall receive the following meaning: I have a modest heart full of wisdom, it is a mirror for me, it reflects all the essence of the world, its creatures, qualities and names; it is a cup for me full of divine doctrines. Iskandar's mirror and Jamshed's cup do not have these qualities, therefore they are less valuable than my heart.

Jamshed made the cup named after him with the help of scientists. When this cup is filled with wine, the phenomena in the world are reflected in it; therefore, it is sometimes called 'Jami getinamo' - the cup capable of showing the world. Iskandar's mirror was made by him and four hundred scientists. It is also described to reflect the world; therefore, sometimes it is called 'oynayi jahonnamo' - the mirror showing the world. In particular, Iskandar's mirror and Jamshed's cup are often used in Navais lyrics to express the heart of a man of deep knowledge. However, in accordance to his method of 'poetic borrowing' to emphasize a concrete imagery purpose Navai 'abjures' these well-known and famous images. Even though the cup and the mirror were specifically refined objects, the were not as valuable as ceramic dish because they only reflect the event in the world. As for the old ceramic dish full of wine (the heart of an 'arif'), according to the poet, it could reflect the essence of the world. Furthermore, in the verse, the poet implicitly contrasts the mirror and the cup, made by processing and refining iron and other metal as hard as iron, to the ceramic dish made by processing earthly clay. Thus, he not only achieves expressing his poetic objective but also correlates the process of making ceramic dish to the religious origin of a human being made from clay. In other words, Navai interprets Iskandar's mirror and Jamshed's cup as worldly objects in order to draw the attention to the scholastic essence of the imagery of the ceramic dish and to achieve expressiveness.

There is a similarity in terms of idea, imageries, and interpretation, between this ghazel from 'Divani Fani" and the first ghazel from 'Hazayin al-maoni". The third beyts of both ghazels are worth attention as regards this. Particularly, the third verse of 'Ashraqat...' reads as follows:

Ey, xush ul maykim, anga zarf o'lsa
bir sing'on safol,
Jom o'lur getiynamo, Jamshid ani
ichkan gado.
(Navai, 1988:20)

In other words, it is such good wine, if it is poured into broken ceramic bowl, it will be 'jom getiynamo' - the cup showing the world, and the panhandler that drinks from it will turn into Jamshed.

The meaning of this verse is interpreted by N. Kamilav as follows: 'This light, this wine is so wondrous, that even a piece of broken ceramic - the heart of a poor man - may be a cup for it. Then, this cup will mirror the whole world, and anyone who drinks from this cup, i.e. intakes the light of divine knowledge, even if a beggar, will feel himself a king' (Kamilav, 2012: 113). Indeed, in both cases the images of a ceramic dish (broken ceramic dish and old ceramic dish) are used to express the same meaning. Interestingly, in the Persian ghazel, the poet states about the prevalence of the old ceramic dish over Jamshed's cup and Iskandar's mirror, whereas in Turkic ghazel, he tells that once the wine is poured into the broken ceramic dish, it obtains the quality of mirroring the world peculiar to Jamshed's cup, and the poor man who drinks from it obtains the qualities characterizing Jamshed.

It means that Navai uses the same images to expressing different meanings. Nevertheless, one is required to know exact meanings of these images in certain contexts in order to identify correct general meaning. The meanings expressed by some images are impossible to identify outside the texts they taken from.

In his ghazel ending with 'in', Navai builds his ideas on the grounds of the image of old ceramic dish again. According to it, the old ceramic dish in the wine house is the mirror of purity, once it is filled with wine, it turns into the cup mirroring the world. Though you have the cup of Jamshed and the mirror of Iskandar, this old ceramic dish can replace them both; look how highly honored is an old ceramic dish:

Jomi Jamat agar buvad
v-Oynayi Sikandari,
In chu ba joyi hardu shud, bin ba sharaf kujost in.
(Navai, 2002:169)

When one takes into consideration the fact that the old ceramic dish is a symbol of a learned man, as the poet states, it is honored higher than both Jamshed' cup and Iskandar's mirror regardless of their mystery and magic; because in the heart of a poor man one can notice the reflection of the face of the Haq (one of the names given to Allah). Another meaning is that a pure heart (an old dish from wine house) by itself is like Iskandar's mirror, after it is filled with divine knowledge, pleasure of love (pure wine), it turns into the cup showing the world. Once the ceramic dish personalizes the qualities of the cup and the mirror, and it fulfills the functions of those two objects, it obtains a prevalence over those two objects. But at the same time, the poet also wants to tell that the mirror and the cup also have the qualities present in an old ceramic dish from the wine house (in the heart of a wise man). In other words, Iskandar's mirror and Jamshed's cup are lower in rank than the old ceramic dish from the winehouse, but the celestial secrets are also reflected in them just as in the old ceramic dish (the heart of dervish) though through a veil. For

the lights of divinity are reflected in everything in the world; the secret signs, symbols of the creator are present in every creation. So the mere ability to reflect a grain in itself is equal to delivering a word of truth.

The image of Iskandar in Navai's Persian poetry is also described in relation to the problem of temporality. The poet builds the following metaphor in the matla of one of his ghazels:

Zi ta'rixi Jamu Iskandar omad
tiragiy bar man,
Magar jomi jahonbin sozdam
oinaro ravshan.
(Navai, 2002:212)

In other words, even though I brighten up the mirror (heart) with world reflecting (world projecting) cup, I will have the trouble similar to that that Iskandar and Jamshed had in their lives.

In the following lines the lyrical hero reveals why he would face the trouble and pain from Jamshed's and Iskandar's stories. According to the hero, the sky daily turns the heroes of the world into dust, life is not eternal, time is limited. So, one had better drink the fiery wine that turns the world into blossoming garden. In his Turkic poetry, Navai used the image of Iskandar to describe the concept of temporality, the same content canbe traced in his Persian ghazeliyat. The fact that people died in the end just as Iskandar or Jamshed reminded Navai of the temporality of the world, which made him sad and aggrieved. Therefore, the lyrical hero wants to drink fiery wine and forget about the temporality of the world and the troubles it caused the superheroes of his time.

Linguistic features of this extract are also specific, the 'Jomi jahonbin' - the cup showing the world cannot be interpreted as usual. Such expressions as 'to brighten the mirror', 'tiyralik' (darkness) trammel this. 'Jami jahonbin' is another name of "Jami Jamshed"- Jamshed's cup, it not only had the ability to reflect the world, but also to floodlight like a torch. In the XXVth chapter of 'Farhad and Shirin', when ilustrating the visit of Farhad to the cave of Socrates after opening the secret of Iskandar, Navai describes both characteristics of Jamshed's cup. According to it, there were many dark caves on the mountain where Farhad came. He faced the problem of identifying Socrates's cave. Then, Farhad orders to bring Jamshed's cup and uses it (just as a satellite or navigator now) in order to find the earth, then to find seven climates, then countries, and finally to find Greece. Having examined all sides of Greece thoroughly, He was able to identify the cave of Socrates in the north. He investigates each cave on the mount and finds the cave Socrates made home and:

Dedikim: olibon kirdilar avval,
Jahonbin jomni, andoqki mash'al.
Olib kirganki oni yo'lg'a tutdi,
Qarong'u tunni kunduzdek yorutti.
Qilib ul jomdin nur o'yla ta'sir
Ki, mash'al partavi qilg'onda shabgir.
Surub g'or ichra yuz ofot ichinda,
Sikandar o'ylakim zulmot ichinda.
Chu bo'ldi Xizrdin ul yo'l nishoni,
Topildi nogah obi zindagoni.
(Navai, 1992:146)

Almost allpoets wrote about the ability of Jamshed's cup to reflect the world, but not all of them were able to describe in details how it showed the world as Navai did. In the above extract Navai not only could clearly describe both qualities of the cup, but also compares Farhad's visit to the cave in search of Socrates to Iskandar's visit to darkness in search of the elixir of life. Here he metaphorically compares Farhad to Iskandar, the cup to Khizr, and Socrates to the amrita. Here his metaphors are based on the legend about Iskandar's entrance into darkness with Khizr in search of the elixir, Farhad's visit to the cave of Socrates using the cup to help him find Socrates is compared to the adventures of Iskandar led by Khizr when they tried to find the elixir. This not only represents Navai's ability to use the four main images of Iskandar, Khizr, darkness, and the elixir in a peculiar way, but also the skillfulness of the poet in using metaphors bound to some events.

II. The second mirror.

Although Navai mentions in 'Saddi Iskandari' about the construction of the city of Alexandria in Egypt, he informs about the second mirror in 'Layli and Majnun' and in 'Tarikhi anbiya and hukama'.

1.In 'Layli and Majnun'.

Tin the first verse of the chapter starting with 'Ishq ta'rifidakim' (about love), the poet describes love as follows:

E, ishq, g'arib kimiyosen,
Bal oynayi jahonnamosen.
(Navai, 1992: 271)

Navai in this verse narrates on two important features of divine love such as it being chymistry and ability to reflect the world phenomena. The second feature of divine love is connected to the name of Iskandar. In order to provide poetic grounds to this quality Navai uses the image of Iskandar's mirror. When the poet narrates on similarity of divine love to the mirror which brightens the world, he bases on the theory of theophany, according to which any object in the world has particles of the rays of theophany which can be traced only with the inner eyes. In other words, the ornament represents the ornament maker, this quality is peculiar to gnostics, owners of the heart. Whatever side they look in search of pure love, they see their beloved - Allah, they understand the essence of the phenomenal world and become aware of the secrets of the earth and sky. Therefore, Navai calls love the mirror able to reflect the world. By grounding the quality of reflecting the world in this manner, he also proposes the poetic idea according to which it is wrong to call the mirror that Iskandar saw in Rome as 'jahonnamo' (able to reflect the worlds). For comparison he gives a brief information about Iskandar's mirror: Iskandar having refined steel and made a mirror, he had a tower built in Rome which faced France. The mirror was so well-refined that it became bright enough to reflect France in it. After the mirror became so bright Iskandar called it jahannama (Navai, 1992: 272). This

is the second mirror which Navai connects with the name of Iskandar.

Navai when narrating on Balinos one of the Greek scholars in 'Tarikhi anbiya and hukama' states the followings: 'Balinos is the disciple of Aristotle. It is obvious that the talisman of the tower of Alexandria was made by the French, Balinos made it' (Navai, 2000:138). It should be stated that concerning this information Navai used 'Tarikhi guzida" as grounds (Mustafi, 1339: 67). In other words, the real name of the construction was 'The tower of Alexandria', it had a mysterious secret, but Navai does not say anything about that secret of the tower. Even if the extreme brightness and clearness of the mirror on it, its ability to reflect objects in long distance are considered to be its secret magic, it seems to be not enough.

2. In Nizami's 'Iskandarnama'.

In the chapter called 'Jahongardiyi Iskandar ba da'viyi payg'ambari' (Iskandar who travelled in the world in claiming his prophecy), there is an episode where Navai informs about the features of the second mirror:

Zi Maqduniya ro'yi dar roh kard,
Ba Iskandariya guzargoh kard...
Bifarmud, mile barafroxtan,
Bar o' ravshan oinaye sohtan,
Ki az ro'yi daryo yakmoha roh
Nishon boz dod az sapedu siyoh.
Bad-on, to buvad didabongohi taxt,
Bar o' didabononi bedorbaxt.
Chu z-oina binand po'shida roz,
Ba dorandayi taxt go'yand boz.
Agar dushmane turktoziy kunad,
Raqibi haram chorasoziy kunad.
(Ganjavi, 2012: 394)

Nizami wrote that a tower was built in Alexandria, on which a mirror was fixed which could show everything happening on the surface of the river in the radius of a month's way. Once the tower guards notice some secret movements, they inform the country's security officers. The security soldiers take preventive measures against an ambush. But Nizami did not say anything about the fact that the mirror belonged to Iskandar (Ganjavi, 2012: 394).

3. Khusraw Dekhlavi in his 'Ainayi Iskandari'.

It was not for nothing that Khusraw Dekhlavi paid a particular attention of the image of the mirror. This created opportunity for him to emphasize 1) new features of his work; 2) new views related to the mirror. He thinks that the first mirror told by Nizami to belong to Iskandar in fact belonged to the Chinese king. According to Khusraw, later, Iskandar, aiming at satisfying the request of the ambassador who complained of the robbers and thieves from France, ordered to build the high tower of Alexandria at the river Rome. The tower was erected facing the side of France. At the top of the tower, on the model of the Chinese, they fixed a huge mirror that could reflect the area of 60 farsangs. Using it, strategic plans of observing the sea and protecting from the attacks of robbers. Khusraw when mentioning 'Iskandar's mirror' meant this particular mirror. He added some details to the information given by Nizami, such as the robbers, the location of the tower, and the distance.

Specifics about the tower and the mirror fixed on it, which Navai made reference to, correspond more to the description of Khusraw. Nozami told that the tower was located in Alexandria, Khusraw near the river of Rome, and Navai in Rome. Nizami does not refer to the side that the tower and the mirror face, Khusraw and Navai point out the side of France. Nizami tells that the mirror could reflect one-month way, Khusraw - the distance of 60 farsangs, and Navai - tells that the mirror could show what the people of France were doing. Nizami and Khusraw clearly stated that the purpose of installing the mirror was the defense of the country; whereas Navai does not make any clarfications corresponding the aim of its fixation; but such details that he mentions as the side of France where the mirror looked, and the things it could reflect (the activity of the French), hint at political aims of fixing this mirror.

If we turn our attention to the information in 'Layli and Madjnun', Navai uses more the details from Khusraw. Another main difference in description is that Nizami emphasized the fact of the tower construction and the aim of fixing a mirror on it, while Khusraw clarifies the history of the mirror creation and clarifications concerning the term of 'Iskandar's mirror'. As for Navai, he relates on the mirror fixed on the tower, its brightness, the ability to show the world, and the magic secret it contained. In addition, considering the fact that Navai provides concrete information on the material the mirror was made from and the person who cast a magic power on it, one can come to conclusion that in contrast to Nizami and Khusraw, he was familiar with more reliable resources such as 'Tarikhi guzida' and 'Tarikhi Masudi'.

5. The mirror in historic sources.

Some information concerning this tower and the mirror fixed on it can be found in some books on history written in the East. According to Mirhand, at the outskirts of Alexandria, a 600 gaz high tower was built; and a mirror with a secret was fixed on top of it. It showed the hostiles armies from surrounding countries gathered with the purpose of capturing the city. Once the city dwellers found out about this, they took measures to get rid of the foe troops (Mirhand, 1338: 94). Nasir Khisrav (1004-1088) wrote the followings about this construction: Alexandria was situated on the banks of the Roman sea and the river Nile. Ships there brought many fruits to Egypt. There was a beacon in Alexandria, and when I saw it was safe and sound. A burning mirror was set on it. If Roman ships sailing from Istanbul came into the radius within its reach, the mirror could burn the ships. Romans tried alot to get rid of this mirror. They came up with various intrigues, and finally they sent a person who broke that mirror (Khisrav, 2003: 112). These ideas were also fully grounded in the research of A. Nasriddinov (Nasriddinov, 2013: 407).

Masudi (third century hidjra) also left important information about the tower (Masudi, 1374: 359-367). According to him, the constructions in Alexandria were built by Iskandar the son of Fillip.Some people think that they were built by the princess Dalv and made it the observation tower which could see the foe troops planning to attack Egypt. Some historians consider that the tower was built by the Pharaoh X. Others relate some Roman cities, the tower, Egyptian pyramids, as well as the city of Alexandria to the name of Iskandar because he was famous for conquering the majority of countries in the world, so this city was also famous the name of Iskandar. Moreover, the enemies from the other side of Rome never attacked Iskandar, and Iskandar never feared the attacks of any kings... the foundation of the tower was tortoise shaped and built in the river; on top, it contained different objects made from copper and other metals (some figures and statues). One of the objects pointed at the sun and followed it with its thumb, after the sun set it it put its hand down. Another figure when foe troops approached showed them and produced frightening sound hear in two-three mile. Thus it informed the population of the threat. Another object produced pleasant sound every hour throughout the day. Rona king sends one of his palace people secretly to the Alexandria during the reign of Valid bin Abdumalik bin Marvan. That servant became Muslim and was promoted to high post. He became a person of shakh Valid's trust. He notices Valid's lust for wealth and takes him into the lie telling that under the tower of Alexandria there was a treasure. He was able to make Valid destroy the tower. Having done so, Valid understands that he was deceived, but it was late the Roman official had already escaped (Masudi, 1374: 364-365).

Ruler of Alexandria ordered to fix a huge mirror on top of the tower in order to see the enemy approaching them from the river. The reason why they did so was that they feared roman princes could come to fight against the kings of Alexandria and Egypt. People unfamiliar with the locations of the tower doors when entered the tower were lost forever because there were numerous rooms, doors and paths inside it. As they say, during the reign of Muqtadir, Maghreb army came to conquer Alexandria. A group of horsemen entered the tower and were never found. There were corridors in the tower that led to the tortoise shaped glass foundation of the tower where there were ways out to the river (Masudi, 1374: 367). While reading this information, one can imagine the beacon of Alexandria which is considered to be one of the wonders of the world.

Alexandria beacon - the second name Persian beacon, was built on a cliff on the eastern coast of Persian island near Egypt. The construction of the beacon started under the initiative of one of Iskandar Macedonian' commanders Ptolemy

Sorter in 285 BC, and was finished in 280 BC. The total height of this three-storeyed tower was about 120 miters. The ground floor was rectangular with the consideration of the sides, North, South, East, and West, where light came from. The second floor was built octahedral taking into consideration the wind directions. The third floor was dome shaped and there was fire burning on it. There also was a 7-meter high bronze statue of the king of seas - Poseidon on this floor. Polished granite columns held the dome. The fire was here and it was visible for seamen from distance. In order to prolong the distance of the reach of its light, they fixed mirrors made from specifically processed iron.

The beacon not only showed the way to seamen, but also was a kind of observation tower. Steel mirrors reflected the foe ships that appeared in the sea; and thus informed the city population. Octahedral second floor of the construction was decorated with multiple bronze statues that moved by a simple mechanism showing the speed and direction of the wind. Travelers who saw the Persian beacon were impressed by the wondrous statues. For example, one of them always pointed at the un and followed it throughout the day; once the sun set it put its hand down; another statue rang every hour; one even pointed at the seas as if warning of the arrival of the foe (Neihardt, 1966:105-118).

So, the details provided by Nizami, Khusraw, and Navai were related to the world famous beacon of Alexandria. The information was gathered from the books by Strabon and Plenius. Regardless of the time that passed the impressions of the Alexandrian beacon have not lost their main features for two thousand years in Oriental sources. For example, in the work of Khamsa writers the way showing function of the beacon was weakened and its defensive function was emphasized. This can be proved by the following words of Iskandar Pala: In the legends related to Iskandar, there were some disputes concerning his mirror. There are various interpretations of this mirror. Some sources tell that the mirror was given to Alexander by the Indian shah Kayd. Others inform that it was made in Alexandria by Aristotle. The legends describe the mirror as round-shaped or rectangular. They say that both sides of the mirror were reflecting. When looked from the back by liars, it did not show their faces; thus Alexander could know who was telling the lie. The legends also related on the fact that the mirror was placed on top of a high hill and could show the ships far away. The mirror even could be used to focus the heat of the sun on the hostile ships and burn them.As we see it, all of these legends are connected with the historically famous beacon of Alexandria (Pala, 1990:137).

Nizami calls the place where the beacon was located as Iskandariya (Alexandria), as for Navai and Khusraw, they call it Rome and state that the name of the construction was the Tower of Alexandria. By the way, although the Pharos island where the beacon was closer to Egyptian coast than to the Roman, it was not completely within the area belonging to Egypt. The information given by Navai related to the fact that the tower was built facing France was truth as the north-eastern part of Egypt facing Europe was surrounded with the sea and the island of Pharos was exactly there. Another important fact provided by Navai is that the mirror was made by processing iron. Hitoric sources confirm this fact. Navai not only calls te tower with its name as 'the Toer of Alexandria', but also tells that it had a secret and the secret made by Balinos. It seems that Nava;I was right here too as in the aforementioned sources, we can read that on the second floor the sea travelers could see bronze statues made working by a simple mechanism and imagined the tower to be magical. Naturally, there were people from the east among the sea travelers.

It should be pointed out that this information can be found only in the work by Mas'udiy which confirms our hypothesis as regards the fact that Navai was familiar with this source.

CONCLUSION.

From the above made analysis and considerations we can make the following conclusions:

1. The imagery of the 'Mirror of Iskandar' found in the books of khamsa writing poets has passed a long way of historical development. Throughout this path, it has turned into an important component of the plot, composition, and images of fiction and poetry related to Iskandar.

2. As distinguished from Nizami Ganjavi and Khusraw Dekhlavi, Alisher Navai provides information about both mirrors related to the name of Iskandar. One of them was made in China, the other was a huge mirror made in Alexandria and was fixed on top of the tall tower.

3. The process of the appearance of this detail and its turning into a literary image took a long path. The fact that has an extremely broad meaning also prove that it tool long time to shape. The first of them can be explained with historical facts, while the second with characteristics peculiar to literature. Historical truth states that there was a real mirror which had quite big chances to serve as a fact (the mirror on the tower of Alexandria). Idealization of this historical truth served as a material ground for it to obtain symbolc properties.

4. Echoes of Iskandar's mirror's in literature first appeared in verbal folk arts, then in written literature. And the first signs of this tradition were expressed in 'Iskandarnama' by Nizami Ganjavi who was the founder of khamsa writing. The success of Nizami in this process was the fact that he was able to raise the element of 'the mirror' to the level

of an important motive of the plot by turning it into the significant component of Iskandarnamas. Later, active application of this motive was observed in Persian and Turkish Iskandarnamas. For instance, Navai often addressed this element in his Turkish and Persian lyrics. As a result, in his works, this element reached the level of an imagery hero.

5. The second mirror, which was called as Ainayi Iskandari by Nizami, Khusraw, and Navai, did not historically belong to the Iskandar; therefore, Masudi, who was informed about the history of Greece stated: 'Others relate some Roman cities, the tower, Egyptian pyramids, as well as the construction of the city of Alexandria to the name of Iskandar because he was famous for conquering the majority of countries in the world, so this city was also famous the name of Iskandar. Moreover, The enemies from the other side of Rome never attacked Iskandar, and Iskandar never feared the attacks of any kings□'. Indeed, just as in majority of works written in the East, in khamsas by Nizami, Khusraw, and Navai, Iskandar was 'an ideal ruler', and his state was considered the model of 'an ideal statehood' (Тьrkdopan, 2009: 761). This happened because the tendency of related any historical, momentous or wondrous event to the name of the Iskandar in oriental Iskandarnamas was the result of attempts to emphasize its ancestity, notoriety. And this tendency of trying to impersonate people's ideals in great heroes was prevailing in Iskandarnamas written in the east just as in other types of folklore.

6. As a matter of fact, one can put forward the hypothesis that with the course of time, the expression 'Aynayi Iskandaria', i.s. 'The mirror in Iskandariya (or Alexandria)' could be misinterpreted as 'Aynayi Iskandari' (Iskandar's mirror).

7. Although at first sight, participation of this image in the works of Nizami, Khusraw, and Navai may appear identical, they do have significant distinctive features. Disparity in the descriptions of the tower and mirror in the work of the poets resulted from their approach to the issue.

Due to his accent on the political side of the matter, Nizami emphasized the purpose of constructing the tower. Khusraw paid a particular attention to the history of the mirror's creation and clarification of the term 'Aynayi Iskandaria' in order to explain the name of his dastan and to accentuate on his individual opinion of the Mirror of Iskandar. As for Navai, just as the majority of his other images, he interpreted the mirror in relation to the issues of divine love, and, therefeore, he focused more on the mirror's birghtness, ability to transmit the worldly events, and the secret magic it contained..

8. Khusraw Dekhlavi was more advertent and considerate to this detail and motive. It was this serious attitude that drove him in choosing an appropriate name for his book.

Nizami and Dekhlavi tried to present the existence of this phenomenon and its application by the hero of the book. Thus Iskandar's mirror grew from the status of a fact, or material object to the level of the factor providing interpretation of spiritual phenomena.

9. Alisher Navai seriously studied the experience of his mentors. At the same time, he studied the real essence of the matter from scientific point of view. In particular, he researched the process of its reflection in historical books. As a result of this historical-scientific and literary-aesthetic analysis, the scholar obtained new grounds and new forms of interpretation. In fact, with the course of time, the similarities became more apparent between such qualities considered to be the characteristics of the mirror as image effect, brightness, transperancy, magic power and the phenomena related to the spiritual life of people. Ideas about the extraneous features of the mirror and its magical power led to its interpretation in Sufism as the heart of an arif person. Generally, this kind of interpretation later started to be applied to the Mirror of Iskandari. Precisely, this could be observed in the masnaviy 'Farhad and Shirin' by Navai, in his Turkish and Persian lyrics. A decisive role in the process of the formation of such a metaphor was played by the similarity between the effect of the image of a phenomenon in the mirror and the reflection of the divine truth in a person's heart. This, in its turn, served as a ground for the formation of metaphoric comparison of the Iskandar's mirror and a cup full of wine (Jami Jam (Jamshed's cup)) in classical literature.

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THE UTILITARIAN AND IMMORAL STUDY IN DESIRE UNDER THE ELMS

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Abstract: This paper is based on the study of American Society. Through the deep study of Eugene O'Neill's drama Desire Under the Elms, it is clear that people want to have success at any cost. There is no value of humanity and sympathy. There is a lack of mutual understanding. All have become totally materialistic for their self-interests. The clear picture of malicious patriarchy, feudalism and lust for money can be seen. People do not have time for their children and the children also do not have time for their parents. Everyone is running from each other in a mad race to get more and more money.

What is correct and what isn't right for men or ladies has been the fascinating inquiry for the social orders everywhere throughout the world in all ages. Desire under the Elms (1924) is a standout amongst the most well-known Plays of prominent American writer of the twentieth century, Eugene O'Neill (1888-1953). In this play, O'Neill chalks out a progression of outstanding subjects like-an over the top love of property, an illegal enthusiasm, and an intense dad child strife, joined together with the best string of Desire and feeling.

Keywords: traditional Society in America, man controlled on society, cash disapproved, desire for physical subjects and forbidden love.

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INTRODUCTION:

The Oedipus Complex is a standout amongst the most repeating psychoanalytic topics that show up in twentieth century American dramatization. By it are the topics of sexual concealment, disappointments, and forcefulness. Truth be told, the grievous plays, to a specific degree, outline the dad and mother figures, sexual dissatisfactions, blame emotions, passing wishes,

what's more, perverted drives. Be that as it may, the fragile living creature and blood of their characters and their enthusiastic desolations are the writers' worry. Eugene O'Neill chooses the antiquated 'Oedipus legend' to structure his play, Desire under the Elms , and in the meantime to demonstrate the mental effect of the dead mother on a yearning child. It is the deplorability of human want which implies an enthusiastic want for help. The foremost subject of the play is Cabot's child, Eben. The craving of the mother is basically showed in a romanticized and commended mother. Eben looks to his mother as a perfect figure, engraved in his brain.

Among the characters in Desire under the Elms there is a matured dad, Ephraim Cabot (75), who has lost his two spouses, his two children Simeon (39) and Peter (37) are the children of his first wife, Eben (25) is his third child from his second wife, Abbie (35) is the third truly confronted, ample and resolute wife of Mr. Cabot. The story pivots around a remote, pitiful ranch house around the season of 1850 in New England, worked under the two colossal Elm trees, where peaceful standpoint blends with regular marvels. The title of the play Desire under the Elms has different implications. In the event that we break down the title, we get two huge fragments: "Desire " and "Elms". The most imperative significance of desire here is the illegal, erotic passion of Abbie for Eben, a lustful desire to which he too reacts completely after a period. In the wake of going to the ranch house as old Cabot's significant other, Abbie begins feeling sensual enthusiasm for the youthful Eben. Abbie cleverly wants to have an ill-conceived child by Eben to obtain the ranch and property of Mr. Cabot. Eben, be that as it may, blames her at first to try to take his 'Throat's homestead' however falls prey to her steady calls. Afterward, this lustful desire transforms into heart-felt perfect energy of both Abbie and Eben, albeit at last their relationship turns out as adisaster when Abbie in an attack of enthusiasm chokes out their new-conceived infant to demonstrate her love for Eben and Eben censures her for not ending the life of the old Cabot rather which she laments.

Freud with his hypotheses that concentrated uncommonly on suggestive/sexual desires as essential to the advancement of tyke/grown-up character wound up instrumental in testing the customs and religion. He contended that troubles in the domain of sexuality were the reason for mental unsettling influences: Conflicts between the requests of sexual drives and the inner protections they raise empower suppression, which thus makes hypochondriac symptoms. The upsurge of secularism itself talks about the profound decrease in religion in human issues at all levels. The contemplate mulls over these to investigate different measurements of moral emergencies in O'Neill's advanced theater.

Mentally, this is normally legitimate as a result of the cozy fondness between the mother and the child. The kid's adherence to his mom started from the early time of her pregnancy. He depends altogether on his mom for nourishment supply when he is in her womb. Also, the kid puts in over fourteen years contingent upon his mom. Accordingly, the association with his mom would be more prominent

than his dad. In the play under dialog, Eben was fifteen when his mom passed on.

In Desire Under the Elms, Eben's mom shapes the changeless measurement of his

show. His commitment to his mom influences him to enjoy withdrawal. Her picture floats on

him every once in a while. He feels her invigorated despite the fact that she is dead. The adoration bond between them is inaccessible. Along these lines, Eben, toward the start, is dove into anguish at the idea of his mom being supplanted by Abbie, his progression mother. The obligation of his mother's passing has put on his dad. This inclination drives him to take a gander at his dad with extreme scorn. He plainly proclaims that "I supplicate he's kicked the bucket" (O'Neill, 2004,7)

I. The Traditional Society in America

The title of the play itself prognosticates the feeling and the mind-set predominant all through the play, which is that of powerful urge. Also, this longing goes to the characters' craving for flawlessness (Ephraim Cabot), position or place (Peter, Simeon and Abbie) and singularity or personality (Eben), in a materialistic existence where despite the fact that they constrain in their objectives, they toss with the power of destiny into their horrible end. In the free enterprise society, individuals are falling into the well of impersonation. They are mimicking others as in this play; the children are doing likewise things as their dad is doing. There is no one who can separate between what isn't right or right. All are falling on a similar rottenness in light of the fact that everyone needs to proceed. For the reason of materialistic mentality up, there is no adjust seeing someone.

It might be said that vote based system isolates and detaches the individuals from the family from each other, as well. It releases social ties, yet fixes characteristic ones. Tocqueville forecasts a group of flexibility as an escape from counterfeit medieval relations into a characteristic congruity of free people. In any case, later on, the cutting edge family cuts itself off from the world. "All the vitality of the gathering is used on helping the youngsters to ascend on the planet, exclusively and with no aggregate aspiration: kids instead of the family (Aries, Centuries of Childhood, 1973), p.15

'Residential' dramatization, is fixated on characters' close connections, their activities towards each other and their reactions to

the encompassing conditions and occasions. Ordinarily, the plot lines turn out to be more practical, and the depiction of the contention emerges from 'standard' occasions in 'customary' lives. The characters are normal individuals like us, taken from the lower and white collar classes of society, who battle with ordinary issue, for example, neediness, disorder, wrongdoing, family struggle and different issues inside conjugal and fatherly connections. In particular, Stephanie Coontz, in The Way We Never Were (1992), alludes to a 'family dramatization' as "an arranged play that contains any gathering of at least two people who participate in continuous closeness and commitment, regardless of whether they do as such as a result of birth, marriage, appropriation or decision. (Shore, p. 8 of 15)

In the twentieth century, American families fret about materialistic viewpoints more than profound ones, particularly after the Civil War. "The upsurge of secularism itself talks about the profound decrease in religion in human issues at all levels" (Mahmood 2006: 323). O'Neill's work was composed in a time of ladies in the U. S. he has recently their fascinating to drove the patriot development for current American show (Zinn 2010: 382) Obviously, if guardians don't imbue morals and identities faith as a part of their identities, they will confront problems in their lives. O'Neill's plays demonstrate that the vast majority of guardians concern or have faith in cash, protection, materialistic issues, desire, and medications, and so on. Despite the fact that O'Neill himself worries about religion and otherworldly parts of life, he draws a down to business picture of the American family. The practices of the family, who neither tend to religious contemplations nor the guidelines of the Church, is needy upon likes and tendencies. As indicated by Girard, "religion is another term for that lack of definition that encompasses man's endeavors to shield himself by corrective or preventive means against his own likes and savagery. This haziness harmonizes with the supernatural adequacy of brutality that is sacred, lawful and real, effectively contradicted to a savagery that is crooked, unlawful, and ill-conceived" (Girard 1984: 204).

The story rotates around a grimy, remote farmhouse of 1850 in New England under two mammoth trees of Elms. In the play, there is a dad, Ephraim Cabot, who is seventy-five years of age, has lost two spouses. His two senior children are from his first spouse: Simeon, who is thirty-nine years of age and Peter who is thirty-seven years of age. Eben, who is just a quarter century old, is the child of Ephraim's second spouse. Abbie is the third really confronted and adroitness spouse of Mr. Cabot. She is just thirty-five years of age. Every one of these characters are living in an indistinguishable and questionable world. Every one of them have lost the importance of their life. They are grudging over

each other. As a rule terms, the universe of American family dramatization demonstrates a worry for family disappointment and annihilation. The intensity of their plays originates from the business of this worry. Whatever it is about, the play is probably going to be established in these battles. From O'Neill on, American writers have been fixated on the disappointment of family agreement and with family coordination. The universe of the American show is comprised of family battles and frustrations and "the hero looks for flexibility and yearns for security. He may escape from the family, may triumph over its persecution, or might be obliterated by it. On the off chance that he survives, he restates the battle in his own marriage or with his own particular kids. Or on the other hand, as survivor, he is allowed to sit unbothered and anguished by the loss of family. (Scanlan, Family, Drama, and American Dreams, 1978, pp. 7)

II.Man controlled on Society

In Desire Under the Elms, O'Neill makes the figure of the 'father' as a paradigm of the antiquated hard, hubristic and heartless dad. O'Neill presents him, as a manifestation of the human will to control. Fredrick Wilkins portrays Ephraim Cabot, the dad, as "the spokeman of a materialistic culture that demolishes the spirits of other men, and as a puritan hero he generally has a fitting scriptural citations for each missed he performs." He wouldn't like to forsake his property even after his demise. He hates his children since he conceives that they dislike him. They are bashful and idiotic. O'Neill portrayed the Puritan's inflexible life in this play. The land was important to the puritan's lives as they altogether relied on it for their job. In this play, Ephraim Cabot assumes the part of a Puritan-the dad in whose picture O'Neill, to utilize Harold Clurman's words,

"has built up a cutting edge disaster of mental and sociological perspectives that persuades the nature of human truth" (28). In antiquated circumstances, the puritans were ruling others and in current circumstances, the private enterprise is ruling poor people. There was conflict among the connections, and this conflict can be seen today. Right off the bat in the play, in scene one, the dad child relationship uncovered the contention of dad child, which is spoken to in the enmity of the three children, Simeon, Peter and Eben, towards their dad "Slaved Sim 'n' him 'n' Eben to death" by making stone dividers "to fence them in" (The Plays of Eugene O'Neill 207). They battle like vultures for the bit of tissue (in the play, it is the land). The ranch for which they pay their life is only dividers of stone as Eben says: A 'makin' dividers stone on stone, making' dividers till your heart's a stone ye heave up out o' the way o' development onto a stone divider in year heart! Something there is that does not love a divider. (The Plays of Eugene O'Neill 208-09).

The play is isolated into three sections, the primary concerns the revolt of the Cabot siblings against their overbearing dad. The dad against whom the siblings are in resistance is Ephraim, "ancestor of the clans of Israel, the prototype patriarch (and for O'Neill, the dad figure). His name the 'productive' might be a hidden wellspring of incongruity before the finish of the play and it is huge that his "productivity" is the best wellspring of his Hubris.(Gassner,A Collection of Critical Essays,1964), p.58.Ephraim unprecedented want to have the land drives his two more seasoned children to wind up drifters, and drives Eben, later on, to sin. The ranch, in this way, symbolizes the life-kicking the bucket sterility of puritan goals, for it wraps and curves the lives of the individuals who are slave to it.(Lal, O'Neill: A Study of His Plays, 1970), p.181.In this way, one needs to reveal the insight into the intimate relationship in the play. One may see that there is no passionate bond between the siblings. After they know about their dad's marriage, Eben influences his stepbrothers to sign a paper giving up to him their inevitable shaves in the ranch, and he takes his dad's cash to pay them.

III.Desire for Physical Subjects

Ephraim married Eben's mother in order to get her farm in his own hands. She became a victim of Ephraim's hotheaded egotism, like the other members of the family. Eben's desire to have the farm and to revenge are the two factors of his character. On the one hand, he loves his mother, who was very soft, and on the other hand, he is greedy, lusty and dominated like his father. He thinks that only for the reason of his father, his mother is nowhere? She has lost her life for the reason of over work. At the point when material ownership and prideful fulfillment turns into the sole point of life, man turns into an inward determined creature that demonstrations unreasonably. Clearly O'Neill imagines the gold warship, an extraordinary type of utilitarianism, as a dehumanizing power that hampers the activity of human organization. This is the reason he composes serious feedback of the American culture: America, rather than being the best nation on the planet, is the biggest disappointment. It's the biggest disappointment since it was given everything, more than other nation... Its fundamental thought is that everlasting round of endeavoring to have your own spirit by the ownership of something outside it. (Sheaffer, Son and Artist 577)

"The spirit" has been perceived as the qualification amongst man and creature. It is another term for human office, or for the otherworldly nature of man. What O'Neill sees in his nation is the way that the extraordinary type of instrumentalism and utilitarianism denies alternate qualities from individuals, particularly in the otherworldly measurement. O'Neill sees individuals who are completely involved with material

possessiveness as men without spirits in light of the fact that their spirits are taken by voracious wants for ownership. The utilitarian vanity in the play is rendered as unavoidable and suppressive. All things considered, inside human instinct there is something that can't be stifled or evacuated. Current men are not relatives of a solitary good great. Taylor has unequivocally contended that cutting edge character constitutes diverse merchandise springing from the three good sources. In this way "in every individual's life there is dependably a variety of merchandise to be perceived, followed up on and sought after. These merchandise are not just plural in the numerical sense be that as it may, they are plural in an ontological sense; they are of subjectively extraordinary writes from each other and, along these lines, can't generally be agreeably consolidated, rank-requested or decreased to some more extreme or foundational great." (Ruth 12) Such various merchandise can likewise be distinguished in the play, particularly in the two heroes. Like Robert in Horizon, Eben is oblivious of his having a place. According to his siblings, he is the "spitting' picture" of his dad. Yet, he realizes that he is unique.

Material ownership can't bring him satisfaction. Eben recognizes himself as absolutely a beneficiary of his mom - "I'm Maw- each drop o' blood!" (I.ii, 322). This fondness amongst Eben and his mom is likewise perceived by the old Cabot who scorns him as "delicate headed, similar to his Maw." Critics have seen the unique quality that Eben bears which sets him separated from different Cabots. Bogard watches that Eben is looking for his character asked by his need to have a place. He looks for a similar distinguishing proof with nature and moves languidly in outsider spots, in the kitchen, the universe of ladies where he can sink no roots. His longing carries him into inescapable clash with additional solidified spirits whose requirements are less on the grounds that they know about less. (Form in Time 209).

Eben's disappointment about his character starts from his twofold legacy of his folks. While Eben is molded by the utilitarian pride of his dad, he likewise conveys the impact of his mom. Eben's mother is portrayed as a lady of cherishing nature, "kind to everybody." In her quietness and continuance, she commits her life to the entire family and passes away in weariness. Her passing symbolizes the nonappearance of ultraistic love and generosity. Be that as it may, her impact is as yet exhibit at the ranch, as the play appears, either in the type of the picture of the defensive elms, or as an imperceptible phantom in the room. Eben's distinguishing proof with his mom accidentally uncovers his yearning and insistence of a benevolent love. In any case, this reality about the self is escaped Eben himself. He won't see reality about himself until the point when the visually impaired

is taken away with the assistance of Abbie. Eben and Abbie begin their connection as two braggarts who attempt to exploit each other. As Doris Falk examinations, Eben "is attracted to Abbie not by affection, but rather by desire, ravenousness, and the craving for vindicate." (96) Thus, Abbie's enthusiasm for Eben begins from desire and her plot of taking the homestead with a infant. By the by as the two became hopelessly enamored, the selfish inspiration is changed into another inclination. In standing up to with Abbie, Eben ends up engaged with accidental changes. This change is obliged to their correspondence through the medium of dialect. Taylor sees our ethical sense begins from our exchanges with different conversationalists. He clears up the connection amongst dialect and the self as takes after: One can't be a self all alone. I am a self just in connection to specific questioners: in one path in connection to those discussion accomplices who are fundamental to my accomplishing self-definition; in another in connection to the individuals who were significant to my proceeding with handle of dialects of self-comprehension.

The word 'Desire ' additionally implies Abbie's yearning to groups the ranch and Eben's similarly extraordinary aching to wind up the sole proprietor of the homestead. 'Desire ' additionally recommends the since quite a while ago treasured dream of Eben to deliver the retribution of his mom's inopportune passing, which was caused by his dad having her exhaust in the farmhouse. Mr. Ephraim Cabot wants not exclusively to satisfy the age of a hundred years yet in addition for peace and rest which he gets just close to the horse shelter and in the organization of his dairy animals. He wants to have mental help and sexual delight from his curvaceous spouse, Abbie. At last, 'desire ' additionally recommends Simeon and Peter's aching to have the entire property. They want to be rich by influencing a mission for gold, as they to leave for California. Moreover, it signifies the yearning of Simeon's and Peter's disposing of the drudgeries forced by their barbarous dad. In spite of the fact that the elm trees are not specified frequently over the span of the play, yet they fill a specific need and have certain importance. The term 'elm' additionally speaks to a representative meaning. Two mammoth elms are on each side of the Cabot house. These elms twist their trailing branches down finished the rooftop. They seem to secure and in the meantime repress the house.

There is a vile maternity in their viewpoint. They brood severely finished the house; they can be contrasted with 'depleted ladies resting their hanging bosoms and hands and hair on its rooftop. When it rains, their tears stream down dully and decay on the stones'. Here, the elms don't mean just trees. They symbolize the maternal powers in the life of a few characters and they are to be appeared differently in relation to the stone-dividers which symbolize

the fatherly powers. The debilitated grayish stone-shading remains for dismal, hard Puritanism while the green tint of elms remains for the vegetative, invigorating powers denied in Cabot's home since the passing of Eben's mom. The elms in fact imply the dead mother of Eben, as well as the wrongs done to her. They imply the dead lady's unselfish love and the adoration lessness of Cabot and Cabot's two children.

Abbie's enticement of Eben demonstrates how nature triumphs over Puritanism. This temptation is absolutely a retributive demonstration.

At the point when Abbie analyzes sexual desire to the development of the elm trees, she attracts thoughtfulness regarding them as images of nature, the nature that was smothered by Cabots. Here, the elms speak to the nature ruined by Puritanism (strictness in convictions and practices). Nature can be smothered, however not for long. It delivers retribution upon its oppressors. Thus, the elms come to speak to the agonizing and eventually triumphant destiny. The word moral is identified with the Greek 'ethos' which means propensity or custom. the numerous faculties and applications we are here worried about standardizing morals, which is a balanced enquiry into the models of good and bad, great and awful, in regard of character and lead, which should be acknowledged by a class of people. (Penguin Dictionary of Philosophy)

The fundamental point of regularizing morals is to define legitimate standards of lead and of assessment of character.

IV:Forbidden love

O'Neill draws the spouse as incurious individual in the family plays. The spouse's aloofness to his better half outlines one of the negative pictures of the American family. Without a doubt, the mechanical improvement, flexibility and self-assurance added to the crumbling of the family and caused a reduction in great relationship inside the family. In this way, familial disorders seemed, for example, disregard, nonappearance, passionate inadequacy, et cetera. Indeed, the disregard of a mate makes an extensive hole amongst father and mother. The basic reason, for disregard in a crumbled family or heartbreaking family is the dad's nonattendance from the house for quite a while. For example, in Mourning Becomes Electra (1931), the dad, Ezra Mannon, who is a noteworthy in the armed force after his dad's passing, left the armed force to learn at school. After he completed the process of contemplating law, he at that point turned into a judge.

He joined the armed force again when the Civil War broke out. Amid every one of these years he had an intense involvement in conjugal life, and stayed inaccessible from his significant other Christine. She needed him to leave since she abhorred him. "Ezra Mannon would have liked to be slaughtered in real life and suspected that maybe Christine additionally trusted so. He

allowed Christine to sit unbothered when he swung back to his home. He drew in with his little girl Lavinia, that is the reason he wanted to end up a legal counselor, at that point a judge and later on a leader" (Goyal1980: 223).

The component of affection and suggestion has been investigated in the present research examine. As indicated by Oxford Advanced Learner?s Dictionary sensuality is "the reality of communicating or portraying sexual sentiments" (514). So far as O?Neill?s specialty of depicting the sexual desireis concerned, he has accomplished the heavenliness in this circle. Clifford Leech likewise depicts the basic topic of the play and denies it to acknowledge as an issue play as it were. He investigates in it the craving for the amicable friendship which Abbie and Eben find in each other. As he attests, "Their craving for ownership of land, of home, of body-oblige a profounder, scarcely perceived, desirefor accom-modating warmth-which for a period Abbie what's more, Eben find in each other, which Ephraim has known just with his homestead creatures" (Leech 55). Doris Alexander too affirms that, "The vast majority of O'Neill's extremely charming characters are his traditional, careless middle class, for at any rate they are equipped for warmth for others, and have a type of social ethic in individual connections, anyway merciless they might be in quest for their most astounding quality cash" (qtd. in Cargill 407).

love builds up its predominance and significance. The profound association and amalgamation of the sweethearts reinforces their vision of adoration. In this manner, the present research shows about spotlights on the significance and prevalence of positive musings and feelings in the life of men through the campaign of wants, sadness, retribution, desire and contrition. Scot Willis battles that, the assemblage was simply more powerful in its mien toward racial decency paying little respect to some methods faulty stay before the scene of the World War II. They ignore the human's practices and family's lead" (Willis 2005: 4). Unquestionably the rules of religion are outstandingly tremendous for people since it stresses awesome lead with the objective that their practices are immediate in the general population eye in inverse; a couple of watchmen's practices were not subject to religious restrictions and great guidelines. So in the O'Neill's plays, when watchmen are withdrawn, their contemplations induce them to complete blunders and bad behaviors since nothing can turn away them. Normally, if a man takes after his preferences, he may reveal himself and his family to burdens and separating. For example, in Long Day's Journey into Night (1941), the mother, Mary, is subject to morphine and the father, James Tyrone, drinks alcohol together with kids without any preventions.

"The medicine and alcohol propensity for the Tyrone family is

only the surface affirmation of the family sickness"(Yussef 1992: 29). In Desire Under the Elms (1924), "Abbie, who deceives her better half, has submitted murder, and is responsible for moving eagerness inside Eben. Also, Abbie's own fixation for Eben is the essential clarification for the bad behavior presented by her" (Barret1929: 152). The disallowed relationship with her stepson Eben, realizes Abbie's pregnancy and killing of the newborn child. Also, in Mourning Becomes Electra (1931) the mother's murder of father, and the kid's murder of his mother's sweetheart. It would be very useful to present the terms love and sensuality as Mike Featherstone examines in his book Love and Eroticism for the help of the present investigation. He says that, "Suggestion is this endless assortment of structures in light of steady creation, elaboration, restraining and control of the sexual motivation. Sexuality, at that point, makes suggestion conceivable, yet sensuality rises above proliferation through its ability to expand sexual experience and create a different domain of related joys" (Featherstone 1).

CONCLUSION

O'Neill uncovers the unfortunate vision in his family plays as a solid impressions and pictures on conjugal relationship.The father, who is aloof what is happening inside the house, will place himself in huge inconveniences. There are numerous reasons reflect awful impressions and inconveniences in conjugal connection; the disregard life partner makes an expansive hole between them. The nonappearance of the dad in prolonged stretch of time's likewise causes a considerable measure of clashes. In twentieth century, guardians don't instill the morals also, Identity standards as a part of their identity and youngsters. The religion is critical to human since it accentuates the best conduct with others. Diverse ages may be one of the explanations behind the crumbling of the family. These reasons cause savagery in family, deteriorations, enthusiastic pain, disloyalties and wrongdoings in family. Desire Under the Elms is a reflection of American culture. It impugns the grievous effects of the legend of a material success and the life-denying Puritanism on Americans through the account of the New Britain family, the Cabots. It likewise uncovered O'Neill's skilled making power, by which he reproduced the Greek terrible soul in this play. This play uncovers his aversion from American voracity and demonstrates the sort of discipline dispensed to the voracious aggregators of riches: good and otherworldly impoverishment. It was this play that brought the American show into it genuine sense. It was his genuine worry over the social issues and phenomenal showy procedure appeared in this play brought the American dramatization into a genuine sense. Eugene O'Neill, the main American screenwriter to win the honorable Prize for writing, brings high reality to American

dramatization and is regarded as "the Maker of Modern American Drama".

Desire Under the Elms is a current disaster containing numerous Greek catastrophe components, for example, Oedipal strife, the apparition, vindicate, and kill in the play, and the unrestrained choice versus the otherworldly. Eugene O'Neill utilizes antiquated Greek catastrophe in an American ranch setting all together that something of the intensity of the prior sensational writing would rise and reinforce his own particular ideas. In any case, Eugene O'Neill will never be a unimportant adherent, he is a maker. Eugene O'Neill brings the debasement of the lamentable legends, the worker like dialect and sets, and the more comic components in his play. Under his ground-breaking pen, a superb dramatization is shown before the gathering of people, joining the customary components and present day manifestations consummately. The American battle for a family in a world in which the family is always debilitated. Old medieval arrangement of specialist and status has been canceled. Free, warm, and unconstrained relations ought to take after. However, what happens appears political agitation. The extraordinary of flexibility was maintained a strategic distance from, yet just incidentally. Eugene O'Neill commanded the family show of the 1930s, post-World War I. This period saw the withdraw of the customary social qualities before realism, the barbaric scale, and the mechanical rhythms which Eugene O'Neill scrutinized in his reasonable dramatization. His play, Desire Under the Elms, depicts the breakdown and estrangement of the American family and look at family connections from various verifiable, local, ethnic, and social points of view, concentrating on how people and ages have characterized the American dream and made the pursuit their own. The Cabots, in Desire Under the Elms, are actually detained, caught, somehow, on their rough, devastated New England cultivate. Their mind boggling family connections uncover the Puritan heritage, which is substituted by interest for material belonging and physical wants. Ephraim, the dad, is the epitome of cruel paternity, religious obsession, and physical quality. He subjugates his children and his spouses.

Every one of the sorts of connections inside the family are without affection, correspondence, and comprehension. The dad and his three children detest each other. Therefore, the brotherly relationship is portrayed by scorn, envy, and materialistic intrigue. Eben disallowed connection with his stepmother is a sort of vengeance upon his dad and an endeavor to escape out of the family circle. Along these lines, the relatives attempt to escape from as far as possible to get their flexibility, similar to Simeon and Peter who fled to California to get gold. In any case, their escape

drove them to misfortune, distance, and implosion. In his mission for profound and moral qualities, O'Neill was endeavoring to find the roots and feeling of having a place of the American family, and after that to discover an answer for the issue of the split self. Subsequently, the family connections, in Desire Under the Elms, are portrayed by physical isolation, disloyalty, misrepresentation of dreams and love, absence of commonality and satisfaction, or more all, fierceness. Therefore, O'Neill's family dramatization uncovers that the American agreeable family is close to a desire. The significance of O'Neill as a social faultfinder lies in the way that he underlines the mental parts of the cutting edge social request. He calls attention to the sickness of our greedy society. So we may presume that O'Neill's idea of the American family looked all the more profoundly and completely into the connection between the individual and his family than did the individuals who tailed him. He uncovers the breakdown of the American family be that as it may, to him, the individual is caught inside the family, has no place else to go, and is compelled to experience the cycle of family strife and devastation.

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THE SYSTEM OF CIVIL SOCIETY LEGAL CULTURES AND VALUES

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Abstract: this article emphasizes the introduction of the principles of social organization of the rule of law and civil society, is widely spread in western countries, is being strengthened by the appropriate examples and forms of legal culture, In the course of the formation of the civil society of the Republic of Uzbekistan, the creation of a modern legal doctrine and a new legal system, is based on, on the one hand, national rich spiritual-cultural and historical-legal heritage, on the other hand, based on universal values, international-legal experience also, the role of culture in reflection of the social consciousness, spiritual world of the people, the concept of culture, the role of civil society in the formation of a just democratic society and the role of values, the impact of culture on the mobilization of the population to universal goals, as well as the rise of the legal culture of society, and its impact is in all aspects of life is a natural law of a democratic civil society.

Key words: civil society, legal culture, values, culture, social consciousness.

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Culture is a phenomenon that it reflects the social consciousness, spirit, and spiritual world of the nation, helps to understand its identity and restore its spiritual values. Culture- is not only a high-profile sphere of personal and social activity, but also a powerful force that encourages and mobilizes the whole nation to successfully solve enormous and complex tasks.

In the decree "On the Strategy for the Further Development of the Republic of Uzbekistan" signed by Shavkat Mirziyoev, President of the Republic of Uzbekistan, in 2017 On February 7and its comment analyzed building civil society, creating conditions for a peaceful and prosperous life of the people based on free market relations and private property, ensuring a worthy place in

Uzbekistan on the international arena, rule of law in the society, human rights and freedoms, interethnic harmony and religious tolerance a thorough analysis of the ongoing democratic reforms and modernization processes of the society.

At the same time, a thorough analysis of the path of our country's development, the sharp change in the global market conditions and the increasing competition in the conditions of globalization necessitate the development and implementation of a completely new approach and principles for the further development of our state[1]. Recognizing the importance of economic and political factors in shaping a just and democratic society, it should be emphasized cultural and spiritual factors, especially the legal culture and values of civil society.

The great statesman and politician Islam Karimov stressed the importance of the spiritual aspect of the ideology and the impact of the ideology on human consciousness, emphasizing: "In today's era of information age, the age of electronics, it is almost impossible to lose the influence of the ideological forces, in modern terms ideological polygons more powerful than nucleus polygons"[2].

These views are fully relevant to the power of spiritual education and the influence of culture on the mobilization of the population to universal goals. The role of spirituality, culture, as well as the role of ideology in the development of society, the importance of the people's vital needs and targets, their powerful potential has long been recognized.

"It is a fact that fair ideas, noble thoughts, moral values are not necessarily proof of the fact that society has always been an important factor in the rise and advancement of society"[3].

In the course of the reforms being implemented in Uzbekistan, a new legal thought that is based on universal democratic principles, a national ideology of independence is being formed. It is in a sense that the concept of worldview and legal ideology constitute the essence of the legal culture that is in line with the civil society in which we are governed. Therefore, "our long-term and strategic commitment is to steadily and consistently pursue a democratic state, civil society building process, and market reforms, and to build on democratic values in the minds of people"[4].

It is well known that the introduction of the principles of social organization of the rule of law and civil society is widely spread in western countries, is being strengthened by the appropriate examples and forms of legal culture. Its core is the personal freedom, which is formed in the mind of citizens, as well as their individual independence, legal protection and guarantees of human rights.

The process of building a civil society in Uzbekistan, the creation of a modern legal doctrine and the

creation of a new legal system is on its own way. On the one hand, it is based on the rich spiritual-cultural, historical and legal heritage of our people and national values, on the other hand, based on universal values and international legal experience. In its place it should be noted that, in the early stages of our reform, we have focused on the use of some western values and principles in the building of our civil society and our national legal system, and then in our legal minds we have a solid foundation of national self-consciousness, our historical roots and heritage, and prioritize the peculiarities and pragmatic approach in the legislation. Indeed, one-sidedness should be avoided in any activity and situation.

In this regard, "it is impossible to build the foundations of civil society, to build democratic institutions without studying and using universal principles and norms, deeply rooted democratic values all around the world"[5]. At the same time, it is natural appearing special characteristics belong to our people while creating the rule of law and civil society in our country.

The legal culture of civil society is considerably enhanced by its structure. Here we can talk about the forms of expression of legal culture, its social status, content, and so on. Legal culture is a separate level of development of society, primarily reflects its readiness to adopt advanced legal ideas and laws, knowledge and skills, as well as the use of knowledge, current law, and current legislation. From this point of view, it is characterized by the fact that it has developed the relevant legal culture principles and norms and embodied the highest legal values.

The legal culture of civil society covers all the human rights values created by humanity. In fact, the legal culture is a set of real positive components of the legal reality. It combines legal adventure, legal technique and legal practice. The components of the legal reality are the elements of the legal culture of the society, with a specific task that is regarded as the benchmarks of human activity.

Civil society is a culture of a particular type of society, social relations, a particular form of relations between citizens and essence. Because "citizenship" means the highest level of economic culture, political culture and the legal culture of all known in history. Like other forms of social relations, civil society creates a variety of cultural and spiritual backgrounds. This is confirmed by the European History of the XIX-XX centuries. In other words, civil society is, in essence, a high level of cultural development of the society.

Social, economic, and political changes in society must be carried out strictly in legal form. It is important that the laws that are being adopted comply with the level of development of the society, and even ahead of it, and the long-term prospects for the society to advance from the path of democracy. It is

important that civil society self-development and self-regulatory processes are activated and create conditions for the realization of the creative potential of the individual and society. Civil society is not merely formal legality, but rather an integral whole system based on the recognition of human personality as the highest standard and its full acceptance.

The principle of social pluralism of interests, ideas and actions should be strengthened by law (first of all, constitutional order), ensuring the implementation of pluralism, including judicial defense. On the other hand, such freedom implies the establishment of a certain boundary by which a citizen can exercise his or her rights and interests. The exercise of freedom of choice should not undermine the rights of society, the state, or the rights of citizens. In other words, liberty should be restricted only by law, that is, by the words of I.Kant, it is necessary to have the legal nature of the person, which ensures the safe behavior of a person. Patient for thinking differently should be an important feature of a democratic society.

The category of "legal culture" in the social context can be described in two ways: the legal culture of the society and the legal culture of the individual. The legal culture of society can be evaluated as the quality of the law, which reflects the values and norms, the legal institutions and the dialectical unity of legal consciousness and activity. As for the individual, it is the norm of acquiring legal reality, as a specific legal mirror of the external world perception. In this regard, "the legal culture of society and the legal culture of a person can be regarded as a very important result of the universal democratic achievements of a particular category of universal values"[6].

In a democratic educational society, on the one hand, the existing legal system and, on the other hand, the activities of government agencies, public and non-governmental organizations, officials and citizens must fully comply with the criteria and requirements of higher legal culture. At the same time, the content of legal culture is largely determined by a set of legal systems, legal principles, legal values, law branches and norms.

The rise of the legal culture of society and its impact on all aspects of life is the natural legality of a democratic civil society. At the same time, the level of legal culture is measured by the scale of the legal values in society, the spread among them, and the profound self-esteem. The legal culture of each individual acquired is determined by the depth of its legal values, the depth of the law in its minds. In our view, the characteristics of the person's legal culture are as follows:

- Perfect knowledge of the content of legal norms;
- Respect for laws and legal institutions;
- Highly socially-legitimate activity;

- Evaluate the right as a means of positive social change and protection of human interests;
- Voluntary compliance with the legal norms requirements, the inner beliefs and so on.

It should be noted that the legal culture of the person positively affects the observance of the requirements of the norms of the law, as well as the level of socio-legal activity of the population. Legal culture is the result of the political and legal socialization of the individual, its socio-legal experience. Particularly important is the opinion formed on the activities of the individual's legal and law enforcement agencies. "An important stage in developing a person's legal culture is its ability to master values and norms in the legal field and to build the ability to use it. This will help guide the legal culture"[7].

Legal values and norms make a comprehensive picture of the essence of the legal culture of society. They provide information on the legal status of a person in society, the limits and forms of his activities, as well as the principles of individual liberty. The legal culture itself serves as a precondition for the development of human beings as a social value. Legal culture is closely linked to the practical legal activity of people, to the structure of their legal relationships and relations.

The practical significance of the legal culture is that it has a positive impact on the strict observance of the laws (norms of law) by citizens and other owners of the law. It also plays a crucial role in raising the level of their political and legal activity.

Legal values play a special role in shaping civil society. Legal values are legal norms, ideas, institutions, principles and events that are respected by members of the community, which serve to regulate social relations between civil society, states and people[8]. This definition is based on the following observations in jurisprudence literature: "Legal values are legal acts that promote social relations, promote rule of law and justice in society, promote human rights and freedoms, and elevate legal consciousness and culture"[9]. "Legal value is a particular social phenomenon, legal instrument and mechanism"[10]. Or "Legal value is the level of influence of the legal norms and principles adopted on the basis of legal ideas, views, imaginations and opinions on the state and society development, in harmony with the person's legal and general culture"[11].

Based on the above considerations, the following authorial definition has been developed: "Legal values are a set of legal norms, ideas, ideas, institutions, principles and phenomena that are respected, valued and respected by citizens in the regulation of social relations between society and the state."

"In civil society, primarily human rights are the most important. Freedom is an invaluable value that describes human nature"[12]. Liberty also explains the purpose and

meaning of democracy. Depending on the areas of social life, it is possible to talk about political freedom, economic freedom, spiritual freedom and other freedoms. For example, freedom of expression in the political sphere should be recognized freedom of citizens to participate in elections and referenda, freedom of association with political parties and associations, pluralism of opinions, freedom of assembly, rallies and demonstrations, freedom of expression and access to government agencies, freedom of the press, and the right to apply to government agencies. These freedoms, as well as legal values, are reflected in the constitution and laws.

Another value of civil society is the constitution and the rule of law, and the superiority of the rule of law. Consequently, obedience to and respect for the law rises to the level of social need.

Citizens' equality is one of the most prestigious values. The democratic state guarantees equality of all citizens before the law. They participate equally in public life and enjoy equal opportunities.

A high level of legal culture has a special place in the system of civil society values. The basis of the ideal society we are pursuing, are the foundation of its relationships is the formation of high spirituality and highly developed political and legal culture. Because, if the governing system of the society is based on legal state system, the legal culture of this society will be in high position. In this sense, legal culture is an important indicator of the maturity of civil society, the development of statehood and the legal system maturity. "It is a value that is active in influencing social life, facilitating the integration of citizens, all social groups, ensuring and sustaining the integrity and stability of the country"[13].

Another important value of civil society is the legal protection of the individual, his / her judicial protection, and the principle of presumption of innocence. No suspect, the person in investigation or defendant is required to prove that he is not guilty. This function is carried out by the relevant law enforcement agencies and the independent courts.

It should be noted that, civil society is based on a broad spiritual, high cultural humanitarian system. In the spiritual life of this society, one criterion is strictly observed: the human being, his honor and abundance are greatly respected, human spiritual and moral qualities are respected, and they are considered sacred.

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TECHNOLOGY OF SELECTION OF TEACHING METHODS IN THE LESSONS OF SOCIAL AND ECONOMIC GEOGRAPHY OF THE WORLD

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Abstract: In this article is given instructions of using strategy "Alimony of states", choosing the technology of educational methods, choosing the orders of methods, effects of using interactive methods such as: the method "Let's introduce".

Key words: Choosing the technology of educational methods, Chosen method, the method "Let's introduce".

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The third millennium is the century of the intellectual development of mankind, in connection with which, the modern generation must meet the requirements of the time, freely harmonize with the universal principles of upbringing and the rules of etiquette. The process of education is a very complicated process.

The organization of each level of education should be aimed at educating young generation in a comprehensive and informed way of thinking. The modern process of teaching economic geography with the help of advanced teaching methods is aimed at shaping the need for independent education, changing the processes under consideration. The main goal of innovative pedagogical technologies is completely increase students' interest for the subject and learning.

The conformity of the method chosen by the teacher to the topic studied, the effectiveness of the

method - is the main important element of the organization of the educational process. In most cases, the use of one method during the lesson does not give the proper effect. In this regard, the teacher should take into account the possibilities and potential of the students, the level of complexity of the activities they perform, the amount of theoretical knowledge, and the degree of students' independence in the performance of tasks, the time factor and the availability of supplementary tools for obtaining knowledge in the study room.

In the process of forming the geographic skills of students, for example, in the subject economic and social geography of the world, teacher must take into account the country's economic potential, industry and agriculture, transport opportunities, international economic ties, achievements of the scientific and technological revolution used in the region, and others.

The implementation of the above tasks in the organization of awareness of an important role is played by a kind of understatement of the shortcomings of traditional methods of teaching. When selecting methods aimed at improving the effectiveness of education and upbringing during the lesson, the teacher should work not only with the class, but individually with each student, dividing the class into small groups using interactive and innovative teaching methods.

With the correct selection and application of interactive teaching methods, we can achieve the following results:

- Motivate students to the topic;
- To guarantee the complete assimilation of knowledge;
- Develop the thinking of children, i.e. Teach children independent thinking;
- To teach children to build a dialogue;
- Create conditions for the active participation of all students in the educational process;
- Create psychological climate in the group.

Proper selection of methods for organizing the lesson and raising specific questions gives a greater effect on the active participation of students during the lesson.

In the process of teaching economic and social geography, we can use the following methods in accordance with a given topic.

The method "Let's introduce"

Application: the teacher asks the students to call their names in order, and the student, when he calls his/her name, must find a geographical term beginning with the first letter of his/her name. For example, in the course of the lesson on the topic "Natural resources of the world" in the economic and social geography of the world in the 9th grade, the teacher asks the students to introduce themselves and name the natural resources, the territory where this resource is located, starting with the first letter of its name and pointing it on the

map. For example, if the student is called Nasiba, she should name the resource associated with the first letter of her name.

Student: My name is Nasiba, resources beginning with the letter N:

1. Oil; (Нефть - in Russian)
2. Sodium salt (Натриевая соль- in Russian)
3. Non-traditional resources
4. Non-metallic resources;
5. Non-metals.

The "State Alphabet" Strategy

The purpose of using this technology in the learning process is to form a student's view of a particular country, present his opinion, and discuss the organization of this state with a partner.

The application of this strategy includes the following sequence of actions:

Picture:

1. The first group of students will depict the geographical position, borders, extreme points of the state in the figure, and also indicate with which neighboring countries the country borders.
2. The second group of students will depict in the figure the economic potential, the level of development, as well as the country's role in the world arena.
3. In the third figure, a group of students will show the industry and its branches, factors affecting the development of industry, the name of industrial enterprises and the range of products
4. In the fourth figure, a group of students will project agriculture and its branches, factors affecting the development of agriculture, agricultural goods and their range.
5. The names of the country's cities, their potential, the number of people, the industries developed in them are depicted in the fifth figure.
6. The economic relation of the country with other states (trade, tourism and services, political, monetary-monetary operations) is depicted in the sixth figure.

Let's try to consider this strategy using the example of the United States.

In conclusion, it is necessary to add that the teacher should carefully select the teaching methods and predict the effectiveness of the application of interactive methods for each student. Education is the key to the successful future of our country; the current generation must participate in its life as afull-fledged member of a legal democratic society and meet the requirements set by the President and the time.

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PROSPECTS FOR THE DEVELOPMENT OF THE UZBEK TEXTILE INDUSTRY IN THE WORLD ECONOMY

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Abstract: his article examines the ways to achieve the prospects for the development of Uzbekistan's textile industry in the world economy, the creation of exemplary structures for textile enterprises based on in-depth study and analysis of the experience of foreign companies, the active introduction of all branches of the real economy, the creation of new types of goods and services, the creation of innovative new textile enterprises and increasing the export potential

Keywords: World the economy, exports, imports, product, textile industry, innovation, development.

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It is well known that Uzbekistan can not perform an export program on world markets, with the exception of the production of raw materials, such as cotton and other raw materials, in foreign markets and sell our products. First of all, it is necessary to accelerate the development and targeted support of industries and enterprises that can be equally competitive in the world market and at the next stage can become the driving force of economic growth, further modernization and diversification of the economy.At the same time, in the textile and light industry, more profound processing of raw cotton, the export of finished products such as dyed yarn, knitted fabrics and fabrics to foreign countries, active production of modern innovative technologies and design, production of finished textile products.

An in-depth study of the experience of foreign companies, such as Germany, in the development of Uzbekistan's textile

industry in the world economy, the development of the textile industry and technologies, and the creation of exemplary structures for our textile enterprises.

The production enterprises of the textile industry of Uzbekistan are equipped with a high-tech large industrial complex that produces cotton fiber, cotton fiber, socks, knitwear, sewing, not only domestic, but also foreign markets.

Taking this into consideration, the country consistently implements practical measures to ensure the further development of the industry. In particular, in accordance with the Decree of the President of the Republic of Uzbekistan dated December 21, 2016 No. 2687, the program of measures for the further development of the textile and clothing and knitting industries for 2017-2019 was approved.

Today, the country has formed a textile network with a high production potential, numbering about 7000 enterprises. A production capacity of 1.4 million tons of cotton fiber has been created, about 60% of which is used to meet the needs of local textile enterprises.

The Decree of the President of the Republic of Uzbekistan "On Measures to Accelerate the Development of the Textile and Clothing and Knitted Industries" identified a number of priority measures to address existing problems, as well as to expand the production of high-quality textile products and to promote the world market. Gave:

- increase in the share of the textile industry in the economy, increase in the volume and quality of textiles produced in the country;
- a radical revision of the management system of the textile industry;
- further improvement of the system of standardization and certification in the textile industry;
- wide introduction of advanced information and communication technologies into the network;
- Implementation of a cluster model for the development of the textile industry;
- a radical revision of the management system of the textile industry;
- further improvement of the system of standardization and certification in the textile industry;
- wide introduction of advanced information and communication technologies into the network;
- Implementation of a cluster model for the development of the textile industry;
- ensuring a balanced distribution of raw materials and location of established enterprises in close relationship with the development of logistics and engineering infrastructure;
- wide introduction of advanced innovative technologies, know-how, developments in the production process, localization of production of modern models and accessories;
- Improvement of the system of training, retraining and advanced training of the textile industry.

It should be noted that this Decree is an important step in the practical implementation of the Concept of Administrative Reforms in the Republic of Uzbekistan, approved by Presidential Decree No. PP-5185 of September 8, 2017, which provides for further reduction of administrative influence on economic sectors and expansion of market management mechanisms. In addition, the head of state supported the offer of the textile industry enterprises, the shareholders' meeting of "Uzbekengilsanoat" and a number of agencies for the establishment of the "Uzto'kimaliksanoat" Association. At the same time, "Uzbekengilsanoat", including the regulatory and economic functions of the state, will be eliminated. The lack of management of the sector management system to meet modern trends in the development of the textile industry and its inability to support manufacturers required this solution. For example: JSC "Uzbekengilsanoat" includes 436 enterprises, accounting for only 6% of the total.The activity of this community is mainly focused on the collection of statistical data, organization of various meetings, organization of exhibitions, its organizational form also does not correspond to the legal status of the joint-stock company.

The experience of foreign countries has shown that one of the most effective forms of development of the textile industry is a cluster organization. This model provides for the creation of a single production cycle, including the production of raw cotton, the initial processing, the subsequent processing of the product in granaries and the production of finished textile products with high added value. It should be noted that the low efficiency of product testing laboratories, as well as the lack of international accreditation in most of them, hinder the access of domestic textile manufacturers to external markets. To solve these problems, it is planned to develop a complex of standardization and certification systems in the textile industry, including the introduction of international standards.

In 2017-2021 years. The strategy of actions on five development priorities of the Republic of Uzbekistan was adopted. Chapter III - The Strategy for Action focuses on the development and liberalization of the economy; - maintaining high growth rates of gross domestic product by maintaining macroeconomic balance and deepening structural and institutional changes based on medium-term programs;

- the development of international economic cooperation, including the expansion of relations with leading international and foreign financial institutions, the continuation of a carefully thought out foreign debt policy and the effective use of foreign investments and credits; as well as their own goals.

The prospects for the development of Uzbekistan's textile industry in the world economy, the mutually beneficial cooperation of developed countries, the experience of a number of economic transformations in them, and the widespread use of innovative technologies are, of course, of great interest for Uzbekistan, which seeks to adopt economic modernization in the modern textile industry as an active participant in the international division of labor . Thus, Uzbekistan became a member of powerful groups in the economic cooperation of a number of international organizations. It is very interesting to analyze the state and prospects for expanding cooperation between developed countries and Uzbekistan.

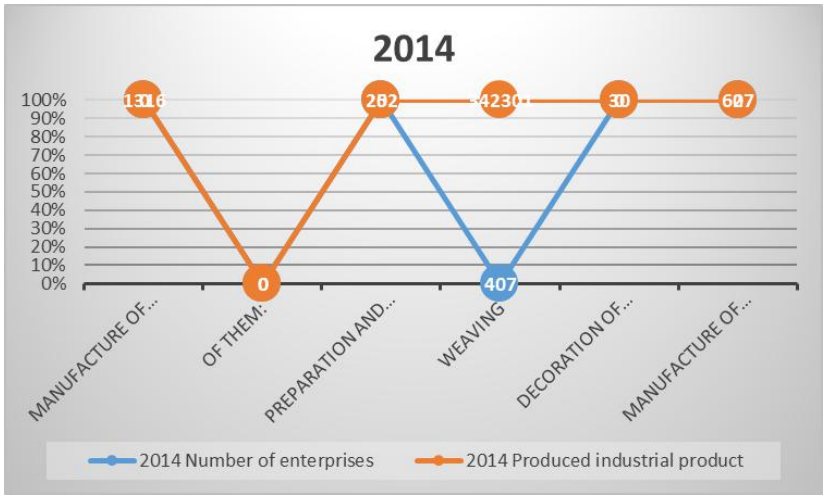
The volume of production of small enterprises and microfirms in textile production in the Republic of Uzbekistan. Fig.1.

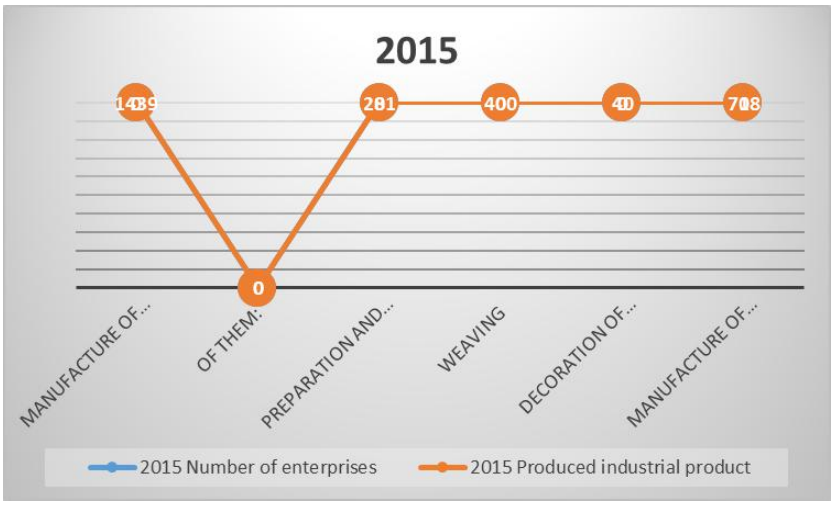
	2014		2015		2016	
	Number of enterprises	Produced industrial product	Number of enterprises	Produced industrial product	Number of enterprises	Produced industrial product
Manufacture of textiles	1316	173253.4	1439	2307853.6	1471	3471150.2
Of them:						
Preparation and spinning of textile fibers	252	708084.6	281	829861.1	284	1512418.4
Weaving	407	342301	400	493710.9	369	587975.4
Decoration of textile products	30	20970.6	40	30197.1	40	53302.8
Manufacture of other textiles	627	661176.2	718	954084.5	778	1317453.6

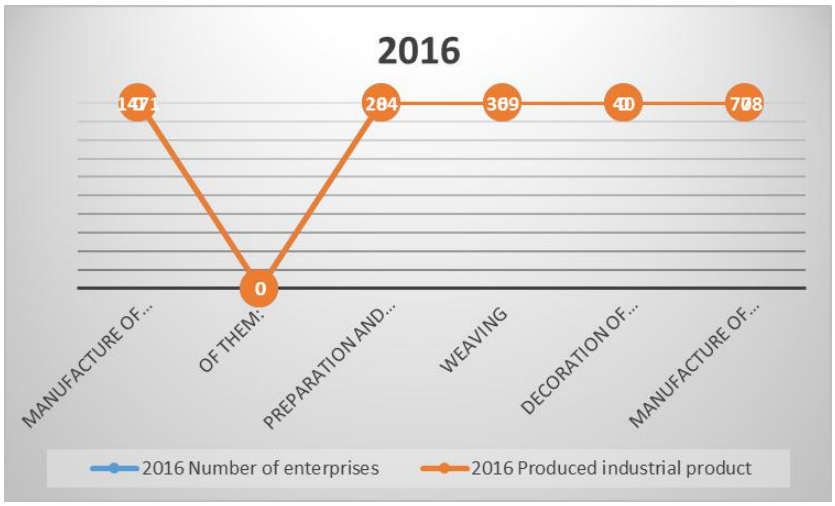
Export and import of the textile industry of Uzbekistan for the last two years. Fig.2.

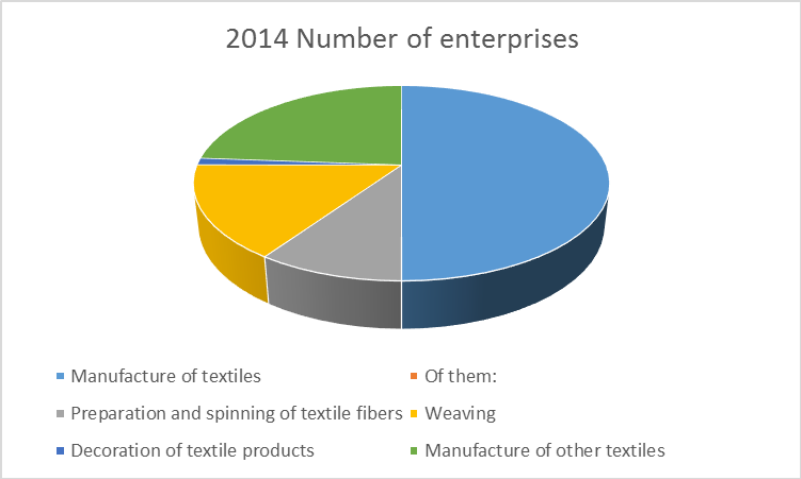
“Ўзтўқимачиликсаноат”	2016 г.	2017 г.
ЭКСПОРТ	1568968.7	1624113.4
ИМПОРТ	79919.5	138756.4

The diagram in Fig. 1.









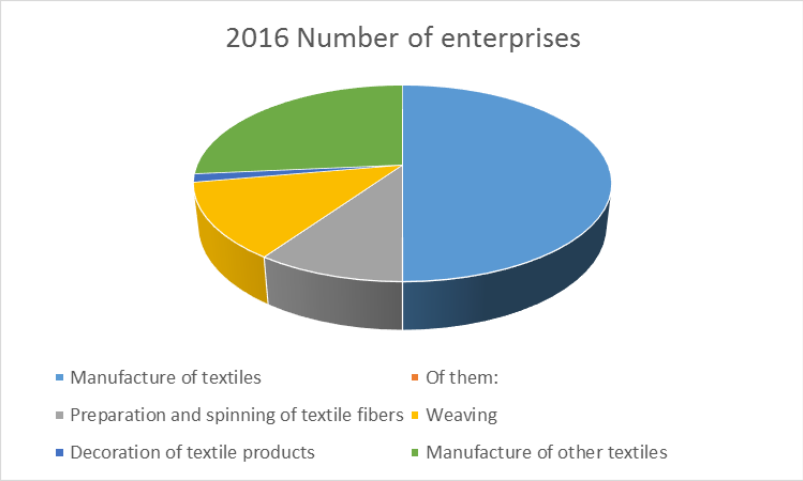
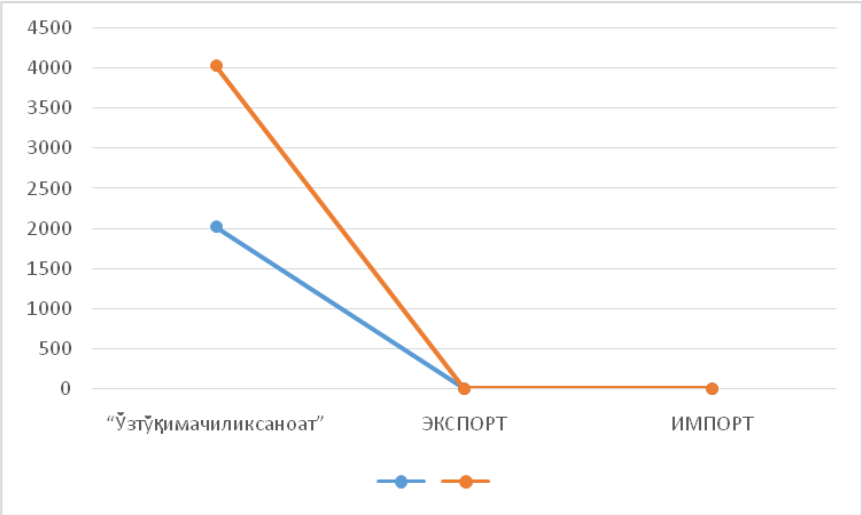


Figure 2. The graph.



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THE IMAGE OF ALEXANDER IN THE ARTISTIC INTERPRETATION

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Abstract: The image of Alexander in the artistic interpretation. The article is devoted to the analysis of Alexander's image in the artistic interpretation in the works of Navoi.
Key words: Iskander, Alexander the Great, image, artistic, interpretation, shah, literature, poem, king

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Iskander is from the genus of the first caste of the Iranian shahs of the Peshdodids. His real name was Alexander the Great; he was known among the Asiatic people under the name Iskander. The image of Alexander the Great before Navoi was particularly and uniquely mentioned in the works of ancient historians as Arian, Plutarch and also in the poems of Firdavsi "Shahname", Nizami Ganjavi "Iskandarnoma", Khusraw Dekhlyavi "Oynayi Iskandariy", Abdurakhman Jami "Hiradnomai Iskandariy" Rabg'uzi "Qissasi Rabg'uziy" and in oral folk art. Navoi studied the image of Iskander from the works which mentioned above; he depicted the image of Iskander according to his own view and philosophy. Navoi almost in every his works notes the image of Iskander by indicating him as a King who reached the level of Nabi, Vali and the peak of justice. Moreover, fifth peom of the "Hamsa", Sadiy Iskandariy was devoted to praising and describing the history of Iskander. In addition, in the 49th section of the first poem "Hayrat ul-Abror" of "Hamsa" and also in the first and second parts of "Zubdat ut-Tavorih" it is said about this historical person.

The image of Iskander, in various sources such as folk, legends and myths was found in forms of "Zulkarnain" or "Iskandar Zulkarnain". The creator of prosaic literature Nosiriddin Burkhoniddin og'li Rabg'uzi in the work "Qissasi Rabg'uziy" highlights the nickname Zulkarnain. He introduces Iskandar along with the prophets (Va yas'alunaka an-zil qarnayn). Pointing out the reason for the name Iskander in that he was a native of the people named Iskandar: "Iskandariya otlig' eldin erdi, aning uchun Iskandariya atandi" [1]. Rabg'uzi explains the reason why Iskander got the nickname Zulkarnain in history "Ammo Zulqarnayn aning uchun atandikim, yerning ikki qarnig'a yetti, ya'ni mashriqdin mag'ribga tegi" [19:88]. Here, the Rabg'uzi starting from the point of view of the Turk language, notes Iskander as having conquered the two parts "Qarni" - the West and the East as "Zulkarnain" - "Master of Two Parts". According to Rabg'uzi: "Qarn arab tilincha muynuz bo'lur. Ikki muynuzlig' temak bo'lur. Zulqarnayn aning boshinda oltundin ikki muynuzi bor edi. Mavlo taolo ani yalavochliqg'a izdi. Urdilar, muynuzlari sindi [2]. Proceeding from the point of view of the Arabic language Rabg'uzi makes analyses of the word "Zulkarnain". Actually, the "qarn" from the Arabic "animal", "Zulkarnain" means two-horned. Rabg'uzi called the horn as "Muynuz". The author describes the image of Iskander in folk myths and legends.

Rabg'uziy continuing his description gives such information: "Aymishlar, Zulqarnayn aning uchun tedilarkim, ikki qarn yashab erdi, anda ixtilof qildilar" [3]. Rabg'uziy aslo used the word "qarn" by the means of age and period. People started to call Iskander master of the two periods because he lived two thousand years. Exactly the same approach can be seen in the Navoi, despite Rabg'uzi was not mentioned. Navoi described a ratio in "Tarixi muluki Ajam" to Iskandar's genes gives such information: "Va aning umrin ming olti yuz yil debdurlar va Zulqarnaynkim, aning laqabidur, vajhi tasmiyasin mundoq debdurlarkim, ul zamonda ming yilni bir qarn der ermishlar."[4].

Navoi relied on historical sources, binds the nickname "Zulkarnain" with the life of Alexander The Great. This approach is also found in the work of Nizami "Iskandarnoma". Navoi gave the following information: "Ammo xazrat shayx Nizami quddisa sirrixu "Iskandarnoma"da ikki qarn maxud debdur.[5].

But Navoi did not limit with the mythical information. As reminded on the top that based on true historical events, he cite historical information. Navoi noted that he did not live for six hundred years but only thirty six and he did not rule five hundred years but only thirteen: "Aksar tavorixda aning umrin o'tuz olti yil va salotinin o'n uch yil bitibdurlar"[6]. So consequently, in history Iskander lived thirty-six (according to new data of modern

researchers, thirty-three) years and ruled thirteen years. But scientists are torment by the question of why Iskander was given the nickname "Zulkarnain". On this issue, they express their ideas and views. To this uncertainty the scientist Abdulla A'zam in his article "Navoi and Greek sages" leads clarity. He clarified the name of Iskander: Man as mentioned in the Koran. "(Ey Muhammad) yana sizdan Zulqarnayn haqida so'raydilar. Ayting, endi men sizlarga u haqidagi xabarni tilovad qilurman." (Sura Kahf, 82-98 ayats).

But it was not known whether Iskander was equated with the prophets or not. The word "Zulkarnain" from Arabic is translated as two-horned.

This quality is usually associated with the designation of a crown or headdress and Alexander the Great was a famous king and commander. (356-323 B.C.)

Iskander Fatih - the protagonist who was formed in the legends of the people around the Mediterranean Sea about Alexander the Great. On the baisis of the image of Fatih Iskander, the image of Iskander Zulkarnain appeared in the Eastern Muslim people in oral and written form of literature. This image was distanced from Alexander the Great and included oriental features. The inclusion of the nickname "Zulkarnain" in Iskander's name is described in two ways: In accordance with the first variant, on ancient coins there were images of a two-horned helmet. In accordance with the second option, the image of Fotih Iskander was combined with Zulkarnain, which was mentioned in the Koran [7]. The scientists noted that the name of Iskander mentioned on the top of Navoi's works which found together and sometimes it was separately. For example, in the work "Tarixi anbiyo va hukamo" genes of prophets give a fact about what could be done in reality that it is impossible to give the status of prophet to Zulkarnain.

It is important that Navoi did not call him as Iskander in the work. Relying on the suras of the Koran, Navoi in the work of "Tarixi" characterized Zulkarnain in a row with prophets. And now Navoi mentioned Zulkarnain which was described in the Koran and in his poem "Saddi Iskanderi" Navoi used Eastern literary monuments that related to legends about Alexander the Great.

Scientist Abdulla A'zam is commenting: In the poem of "Saddi Iskandari" the protagonist Iskander never mentioned as Zulkarnain. In his power in the Rumu Rus region that is (peninsula in the Balkans) war campaign collided against Darius. Even the marriage with Roxanne and all these events are similar comparing with the events life of Iskander. But the conclusion explains that the main hero of "Saddi Iskandari" is Alexander the Great was absolutely wrong. [8]Because in the "Hamsa" of Navoi though the life-line and biography of Iskander was taken from the life of Alexander the Great but it was based and

included the high qualities of Zulkarnain that is described in the Koran.

Jahon ichra topib mundoq shohlik,
Nechuk shohlik, donishogohlik.
Valoyatdin ilgida quvvat dog'i,
Nechunkim valoyat, nubuvvat dog'i.

Alexander owned four qualities - tunes. They were: king, wise man, Vali and prophet. Alexander was not a conqueror who gained treasure with destructive battles and plunders, but taking the world with wisdom he showed the example of ruling with justice and measure.

In the fourteenth article of epic poem "Hayrat-ul-abror" Alexander's adventures were given shortly, at the end of the poem Alexander was described by giving adescription of words below.

Ham shoh o'lub, ham valiyu, ham nabi,
Hikmat ila tuz o'lub mashrabi. [9]

It can be seen that, Navoi in his two epic poems ("Hayrat-ul-abror" and Saddi Iskandari) created the image of Alexander in mixture: in the picture as Alexander the great and in his spirit he was described as the person who had peculiarities of wise man, Vali and prophet.

Navoi did not choose the life of Alexander the Great in vain. Because the hero of a poet understood the infinity and width of the world being in battles in all his life, he felt very poor and weak in front of God and realized disloyalty of the world and the limit of life.

Navoi equalized Alexander's battles to the journey of sufiy, he put Alexander's torment (riyozat-suffer torments in order to see the wonderers of sea and land) and his suffer at the same level. During this torment Alexander cleaned his heart and thought, made them pure, as a result his spirit became clear with God's light. At the end of his journey when he got position, his condition was as the person who got education of tarikat, as if he walked the way of tarikat. Then he saw himself at Vali position and the light of prophet brightened his eyes.

Hence, in literature conqueror king became very calm (orif), in other words he went to the high position.

It can be faced with same meaning poem in "Tarixi muluki Ajam":

Valoyat bila hikmatu shohlig,
Nubuvvat ishidan ham ogohlig [10]

Or it is possible to find phrases such as: "Ham hakim erdi, ham vali. Ba'zi anga nubuvvat ustodi ham qildilar."

It can be seen that Navoi paid special attention to the three qualities of Iskander (hakimlik, valylik, nabilik) and in work "Hamsa" noted the continuation of thinking in a fragment of a poem (Masnaviy) and in prosaic narratives as well. The image of Iskander has a universality and significance with these aspects. Along with, the scene of leaving of Iskander this world with nothing in open hands is similar to other works of Navoi.

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ABOUT SOME MECHANISMS OF SOCIAL SPHERE DYNAMICS IN UZBEKISTAN

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Abstract: In this article some mechanisms of social sphere development in Uzbekistan are considered. Also author discussed about Strategy of further development of the Republic of Uzbekistan on 2017-2021 in this paper.

Key words: society, Uzbekistan, social sphere dynamics, social development, Strategy of further development.

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The current transformation of the social sphere of the society, the growth of citizens' needs, the radical changes in the activities of various social institutions, and the increase in the role of human capital. At the same time, the social sector as a structurally complex sector requires a broad range of factors such as the formation of human capital, accumulation, and social stability. Therefore, the need for the sociological forecasting of the dynamic development of the social field paradigms and the classification of its functional factors are gradually increasing.

In the process of global integration in the world scientific researches on the study of democratic features of dynamic development of social sphere of society are carried out. Mechanisms and factors of the social sphere dynamics are being studied on this front. It is particularly noteworthy that the conceptual approaches and practices that contribute to the dynamics of the sector are not sufficient in tho1se countries where modernization of the social sphere is taking place. In our country, research is still a top priority in terms of social sciences.

During the years of independence the constitutional and legal foundations of the development of the social sphere of the society have been created and the legal basis has been strengthened. At the same time, the analysis of the appeals of the President of the Republic of

Uzbekistan to the People's Deputies in recent years has shown that serious social reforms are needed. In this context, it is clear that the development of the social sphere in the Strategy for the development of the Republic of Uzbekistan for 2017-2021 is a fundamental direction [3].

This dissertation work will serve to a certain extent in the implementation of tasks outlined in the Decree of the President of the Republic of Uzbekistan dated 7 February, 2017, "On Strategies for Further Development of the Republic of Uzbekistan for 2017-2021" and other normative-legal documents.

The common sense of this strategic program is five principles deal with social dynamics. They are [2]:

1. Improvement of state and public construction aimed at further strengthening the role of parliament and political parties in deepening democratic reforms and modernization of the country, reforming the system of public administration, developing the organizational and legal basis for public service, improving the system of "e-government", improving the quality and efficiency of public services, practical implementation of public control mechanisms, strengthening the role of civil society institutions and mass media.

2. Ensuring the rule of law and further reforming the judicial and legal system aimed at strengthening the genuine independence of the judiciary and guaranteeing the reliable protection of citizens' rights and freedoms, improving administrative, criminal, civil and economic legislation, improving the effectiveness of the system for combating crime and preventing crime; the principle of competitiveness in the judicial process, the improvement of the system of rendering legal assistance and legal services.

3 Development and liberalization of the economy aimed at further strengthening macroeconomic stability and maintaining high economic growth rates, increasing its competitiveness, modernizing and intensively developing agriculture, continuing institutional and structural reforms to reduce the state's presence in the economy, further strengthening the protection of rights and the priority role of private property, stimulating the development of small business and private entrepreneurship, an integrated and balanced social but-economic development of regions, regions and cities, the active attraction of foreign investment in the economy and regions of the country by improving the investment climate.

4. The development of the social sphere aimed at the consistent increase in employment and real incomes of the population, improving the system of social protection and protection of public health, increasing the socio-political activity of women, implementing targeted programs for the construction of affordable housing, development and modernization of road transport, engineering and communications and social infrastructures, the development of the sphere of education, culture,

science, literature, art and sports, and the improvement of state youth policy.

5. Ensuring security, interethnic harmony and religious tolerance, implementing a balanced, mutually beneficial and constructive foreign policy aimed at strengthening the independence and sovereignty of the state, creating a security belt around Uzbekistan, stability and good-neighborliness, strengthening the country's international image.

Social development of any society depends largely on the spirituality, lifestyle of citizens, the satisfaction of the material, spiritual and social needs of people. Therefore, in the five main priorities of development of the Republic of Uzbekistan in 2017-2021, the Strategy for Development focuses on the further development of the society, the development of private entrepreneurship and small business, as an important factor in ensuring the employment of the population and the promotion of home-based work is being implemented.

In our country, a special attention is being paid to radically improving public utility services, further improving the system of housing and social facilities, improving the quality of work of private homeowners' associations and ensuring their financial and economic stability. A great deal of attention was paid to these issues that directly affect the daily lives, welfare, health and mood of the population. For this purpose, according to the Decree of the President of the Republic of Uzbekistan of April 18, 2017 "On Measures for Further Improvement of Management of Housing and Communal Services", the Ministry of Housing and Communal Services of the Republic of Uzbekistan has been established, with the maintenance and repair of multi-family housing, large-scale work on coordinating the activities of homeowner associations, exploitation of engineering and communication networks has been carried out. In order to harmonize urban and rural life, special attention was given to issues such as multi-storey housing, social facilities, drinking water, electricity, heat, natural and liquefied gas supplies, coal supply and sanitation.

A lot of work is being done nowadays to improve the living standards of the rural population to the standard of living and the spiritual life of the city. In 2018 alone, a large-scale construction and reconstruction works are underway within the project "Obod qishloq" ("Prosperous village") in 2 districts and 286 settlements in each district. Special attention is paid to the well-being of our people, recreation and cultural leisure.

Development of production and social infrastructure in the village, cardinal improvement of the quality of life of the population, increasing the real income of citizens, increasing the targeted social support of needy families. In particular, in 2018, plans for increasing the competitiveness of economic entities by means of gradual reforming,

diversification and structural transformation of socio-economic life through the use of foreign capital and local financial resources, the development of new high-tech manufacturing facilities and acceleration of modernization of existing production facilities have been set. In particular, it is planned to ensure rapid development of the sphere of services, implementation of the program on construction of individual houses in rural areas on new quality standards, consistent continuation of implementation of complex construction measures is one of the most pressing issues.

At the present stage of our development, as in the economy as a whole, reforms in the agrarian sector have a new quality of content and unite them as one of the most effective forms of economic development. The basis of the system of measures taken to transition to market economy is the restructuring of property relations. Without this, it is impossible to ensure the effectiveness of enterprises and consequently the acceleration of social development. Bearing in mind that these processes can lead to serious changes in economic relations, the social structure of the population, the income and property status of its various strata, the various forms of ownership should be actively promoted to avoid social tension.

One of the most important social tasks is to solve the problem of forming a class of proprietors. The main purpose of this is to build a multi-disciplinary economy, which is dominated by private property, and through a number of means and directions. Among them, the improvement of the villages and the rise in living standards are of particular importance. In almost all countries of the world, great attention is being paid to the development of small and medium enterprises in rural areas. Because entrepreneurship is one of the most crucial economic resources, it is the basis of human resources, and in general, small businesses and private entrepreneurship can provide greater mobility and ultimately social welfare [2].

Conclusions

Today, it is vital for Uzbekistan to have a thoroughly well-thought-out strategy and program of action that fully meets the challenges of today's rapidly changing state as a country that seeks a worthy place in the international community, strives to ensure peace and prosperity for its people. In this regard, the ongoing reforms in the social protection system of the country, the study of the information received by the mass media on the basis of sociological indicators are one of the pressing issues.

In our country during the years of independence the level of living of our people has significantly improved compared to the 1990s of the last century. Nevertheless, one of the most urgent tasks is to further improve the effectiveness of reforms, create conditions for comprehensive and dynamic development of the state and society, modernize the country and liberalize all spheres of

life. Today's reforms are a solid step forward on the way to resolving problems in this area.

In the further development of the country for the next five years, it is necessary to improve the order of providing support to elderly people, increase the efficiency of citizens' self-governing bodies, transform the mahalla institute into the most populous and public institution, cheap housing, water and gas supply pipelines in rural areas, construction of modern roads that meet modern requirements, quality of transport services to the population, what is meant to improve. All of these reforms will increase the dynamics of the social sphere of society.

Democracy is determined only when consistent with the principles of social justice and the rule of law. The essence of the principle of social justice is that the criteria that must be followed in determining the categories of the population that the state really needs to be supported and the mechanism to provide them is simple enough for the public to be clear and fair.

The fundamental requirement of today is radical transformation of the system of development of the social sphere in the country, formation of advanced system of social sphere, continuous improvement of social guarantees system, improvement of living conditions of the population.

Nowadays, there is a need to implement a social policy and to move towards a qualitatively new level of social protection. In this regard, it is crucial to forecast the transition from the system of public social services to reliable targeted social guarantees and social support schemes for each particular individual.

Analyze and design innovative solutions to these problems, including the fair distribution of basic resources and wealth in key social sectors of society, defining strategic directions such as education, healthcare, food, housing, employment, planning and forecasting.

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THE EXPRESSIVE MEANS OF LITERARY ART "IRSOLI MASAL" (THE POETRY WRITTEN ON THE BASIS OF PROVERBS AND SAYINGS) IN GADOI'S ACTIVITY

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Abstract: The article discusses the skill of rendering Gadoi's literary expressive means of the art "irsoli masal". In addition, comparative analysis of the expressive means has been conveyed in literary environment of representatives" activities.

Key words: literary means of art, proverb, to illustrate, love, beloved, lover, parting, joining.

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Formally, the theoretical manual of literary art founded in Arabic and Persian Languages, later in XIV centuries, the work "Perfection knowledge" by Ahmad Taroziy in the Turkic language emerged in the field of science.

In the past, literary critics conducted their literary theory in manuals either in the forms of poems, rhythm, literary expressive issues or disclosed in the genre of poetry characteristics. However, Shaikh Ahmad intended to create, analyze and reveal one of the perfect manuals in the form of brochure. So that people would be able to read, obtain the benefit from it and gain utmost information"[1]. Namely the third part of this work is devoted to the scientific literary of the art poetry. Theoretical data were based on the samples of authors of that time; "Funun ul-balog'a" is the first perfect manual on theoretical issues in the literature of the Uzbek language. Such theories had been commented on fully on the works of Alisher Navoi's work such as, "Mezon ul-avzon" and Bobur's "Mukhtasar". Indeed, it illuminates scientific literary theory and testifies with ghazals. Abovementioned works have been still analyzed in most authors'

ghazals which are based on tendencies and requirements.

The samples word of art has been written peculiarly in Gadoi's poems. Irsoli masal is a type of art which expresses more artistic style to the meaning of the poem by using proverbs and aphorisms. "It represents proverbs which disclose the notion of an idea used in prose and poetic works testifying them"[2]. For instance, the following poem which was written by Erkin Vokhidov represents the solidarity of ideas distinguishing a lyrical hero and a folk proverb.

Lover spends his life with full of dreams
As every silver cloud has a silver lining.

The second part of the couplet "Every silver cloud has a silver lining" is the proverb which means dark fortnight in the bright fortnight of the month.

There is no moment that I could bare the hardship,
There is a true story among our people as no pains no gains.

Second poem containing "no pains no gains" is used as a supplement to prove the idea which has been given in the first hemistich[3]. You can see this kind of events in classical literature too. Their role is essential in representing the content of the ghazal.

Navai's ghazal:

The arrows seized my heart, both my eye and soul,
Who will suffer when there was set the fire to.

The proverb mentioned in the second hemistich "if the fire is set to reed beds wet and arid burns the same" serves as a testifying means with much more intensifying expressive ideas.

Moreover, the poet represents the following hemistich:

Why the story became as if your hair to light?

The proverb "no reason to light the musk" which is described in this hemistich helps to emhasize the previous notion of the hemistich.

Sometimes, two proverbs can be found in one couplet . For example , the couplet that belongs to Atoi

My heart turned into water because of your grief "Do good deeds and let it flow into water"

Finally, oh the blossom of flower, "everyone who sows, will gather crop"

In this couplet two probverbs are used. To be more precise, on the basis of the art "irsoli masal" the poet used two proverbs.

In the Uzbek poetry there are some poems that are used in all couplets with the help of the art of irsoli masal. For instance, the following Lutfi's ghazal is considered to be as one of them:

Everytime it comes down to your feet,
Issue as if the light in the darkness.
When I see your face cannot help myself looking,
Some people say Water flowing in flowing stream.
I hid the beauty of your face day and night,
One's eye is the scales of concsience.
Wonder your eyes are not embarassed from the blood,
People fear once they see the blood.
Lutfi wishes the dating came true,
Some people say to make a wish.

There are proverbs in each couplet of the poem. These proverbs

correspond to the points in the previous hemistich. Proverbs emphasize and confirm these points.

We can see that an example of this art is reflected in Gadoi's works[4].

Beauty is transient, be faithful to your lover
These periods will soon pass in a moment.

In the first verse of the couplet, it is said that love is a transitional life and in order to prove the viewpoint the word in life is short and time is swift is used. The proverb means that how life is short.

Do mind that life is short and time is swift,

Entertain yourself every other day but this world does not last long.

Gadoi uses proverb in his first verse. Like his other ghazals, he notes that life is very short with the phrases "life is short and time is swift". According to his ghazal, it is possible to understand the meaning of life as it is time-consuming and at the same time enjoying all the benefits of life.

Thanks to you my heart beats and lasts my life,
If I forget your goodness may my eyes be blind.

In this couplet, I am alive because of you. "If I forget your goodness, may my eyes be blind". This phraseological attachment reflects as a curse. Gadoi uses the proverb in order to reveal hero's real character.

My eyes are unable to see anything apart from your beauty,

There is no place for anything in my heart.

This couplet shows a loving attitude to the lover. In other words, I only have eyes for your beauty. My eyes can see only you and your face in the black. The term "ignorance" in literature refers to the state of ignorance other than the one who has lost consciousness, and nowadays it is a condition of understanding (or non-understanding) the good and bad aspects of life.

The lover said seeing your face,
It was overlooked, finally to your side.

The state of a lover is expressed in the couplet. According to this, the lover circumambulates his bellowed. Eventually the feet of beloved were injured by evil eye. This expresses two ideas, firstly it is expressed in the form of phrase in figurative meaning- extremely powerful look injures the feet. Secondly, on the help of the word to circumambulate, the lover has done his duty by touching his eyes to her feet. We suppose that if it is bad luck used as a phrase it would be used in the second one it would lose its real meaning. Gadoi's artful skill can be seen from this couplet.

Proverbs are usually changed in poetry, so proverbs with some adaptations may be used in poetry[5].

Anyone who dares to see your face one day,
May one pass away without leaving any wish.

In the first line of poetry," if there is somebody sees face that is equal to the beauty of the moon". In the second one "and seeing it one will die, not having any regrets" are expressed.

We may meet some proverbs that are used in the way above following couplets.

Because, I have lost you, my beloved
It is better for me to die than to live.

Lover's losing his bellowed and suffering from separation and preference a death rather than separation are described. In this case Gadoi expressed power of love of the lover in separation and used "it is better for me to die" phrase in this case.

We will analyze one couplet the same as one above:

There is nothing better for the good people on the earth than kindness,

Eventually, humankind in the world lies in the soil. (168)

There is described that always do goodness and you will acheive generosity of this everlasting world.

In XV century the role of our Classic literature history of Uzbek poetry reached the peak in its highest level. In this period, powerful turkish poetry appeared which could compete with famous persian -tadjik poetry. It is impossible to imagine the greatness of this poetry without Atoi, Sakkoki, Lutfi, Gadoi and other dozens of artists' works. In the history of the Uzbek literature the superiority of ghazals are shown with unexpriseless decorations in the works of representatives of that literal sphere. Mavlono Gadoi acheived high level of his creative perfectness at the time of blossoming the turkish poetry. In addition, in the XV century several genres of poetry were in the process of improveement . This process is shown at the tradition of planning devan of artists. Apart from this, If Alisher Navai worked at the 16 genres of poetry and one century ago Gadoi, Lutfi, Atai, Sakkoki used only 5-6 genres (in comparison with the period of Navai).

In the literature of XV century ghazal Mavlono Gadoi's plays important role. Indeed, Gadoi created appropriate poems which is suitable for his meaningful and bright work. We can see wonderful examples, especially in these ghazals that it can indicate the skill of artist. So we have just analyzed only one type of poetry. There is a variety of art that we can give information aout them in the next works.

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EFFECTIVE VALUES OF PHOTOGALVANIC CHARACTERISTICS OF SOLAR ELEMENTS AND TEMPERATURE

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Abstract: The semi empirical method is received expressions defining dependency of efficient importance photo galvanic characteristics of solar elements from the temperature. It is shown that these expressions wholly can explain the warm-up dependency of efficient importance photo galvanic characteristics of solar element reception from experiment. From calculation of these expressions is shown that efficient importance of the voltage do not belong to the coefficient quality photovoltaic characteristics of solar elements.

It is also shown that solar elements, prepared on base of arsenide-gallium, will not work in temperature bottom T=150 K.

Key words: Solar elements, photo galvanic characteristics, efficient voltage, efficient current, efficient power, coefficient quality photovoltaic characteristics.

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It is known from experiments that the effective values of photovoltaic characteristics of solar elements (SE) depend on temperature [1]. However, in the literature, expressions have not yet been obtained that establish these dependencies. Therefore, in this paper, semi empirical methods are used to derive expressions that determine the dependence of the effective photovoltaic characteristics of the solar element on temperature. It is shown that these expressions are in good agreement with the experimental results.

As is known, one of the main photovoltaic characteristics of SE is the effective power, which is determined by the following expression [1]

$$P_{ef} = J_{ef} U_{эф}, \quad (1)$$

where J_{ef} is the effective value of the current and U_{ef}- is the effective voltage of the solar element.

On the 1-fig. a method for determining the effective power, along a tangent point, using the experimental photovolta-ampere characteristic (PVAC) of a solar element. To determine this point, a straight line (1-straight line) between the points determining the open-circuit voltage and short-circuit current, i.e (U_{xx}; 0) and (0; J_{kz}), is usually drawn from the pho VAC. Then this line is transferred to the touch of the photo VAC (2-straight line) SE [2]. From the point of contact determines the effective power of the solar element. Based on this method, you can identify the formula that determines the effective power.

It is known that the equation of a straight-line passing between two points is written as follows

$$\frac{J - J_1}{J_2 - J_1} = \frac{U - U_1}{U_2 - U_1}. \qquad (2)$$

From this expression for the 1st line we obtain (1 - Fig.)

$$J = \frac{J_{кз}}{U_{xx}} U + J_{кз} \qquad (3)$$

where $J_{кз}$ - short-circuit current, U_{xx} - open circuit voltages.

In this formula, $a = \frac{J_{кз}}{U_{xx}}$ the value of the slope of this straight line.

It is possible to determine the equation of a straight line, which will be parallel to the 1-straight line and touching on the experimental curve of the photoVAC SE, which has the form

$$J = aU + b. \qquad (4)$$

Taking this into account, we determine the coal coefficient 2-straight from the expression photoVAC SE

$$J_{ф} = J_0 \left(\exp\left(\frac{eU}{nkT} \right) - 1 \right) - J_{кз} \qquad (5)$$

where Jφ is the photocurrent, J_{0-} is the electric current, e- is the electron charge, k- is the Boltzmann constant, and *T*- is the temperature [3]. To this end, from (5) we obtain the derivative with respect to the voltage. As is known, the coefficient of non-ideality (n) of the photovoltaics of solar elements is determined by the type of electric current. Therefore, it can be assumed that the output voltage of the SE is independent of this parameter [4]. Since the intersection point 2 is a straight line and a 3-curve is U = U_{ef}, bearing in mind this for the angular coefficient *a*, we obtain

$$a = J'_{ф}\left(U_{эф}\right) = J_0 \frac{e}{n_1 kT} \exp\left(\frac{eU_{эф}}{n_1 kT} \right) \qquad (6)$$

As is known, the coefficient of non-ideality of the photovoltaic cells of a solar element depends on the type of electric current. Therefore, in (6), n1 is the non-ideality of the photovoltaic photovoltaics of the SE at the point of determining the effective power. From the condition of parallelism of straight lines, their angular coefficient must be equal to [2], taking into account the negative value of the short-circuit current, we obtain

$$\frac{J_{кз}}{U_{xx}} = J_0 \frac{e}{n_1 kT} \exp\left(\frac{eU_{эф}}{n_1 kT}\right). \qquad (7)$$

From the formula (7) for the effective value, the voltage (U_{ef}) SE we obtain

$$U_{эф} = \frac{n_1 kT}{e} \ln \frac{J_{кз}}{J_0} \frac{n_1 kT}{eU_{xx}}. \qquad (8)$$

When the voltage of the SE is equal to its effective value (U_{ef}) then, and the photocurrent is equal to its effective value

$$U_{эф} = \frac{n_1 kT}{e} \ln \frac{J_{кз}}{J_0} \frac{n_1 kT}{eU_{xx}} \qquad (9)$$

Then from (8) and (9) for the effective value of the photocurrent we obtain

$$J_{эф} = J_{кз}\left(\frac{n_2 kT}{eU_{xx}} - 1 - \frac{J_0}{J_{кз}}\right) \qquad (10)$$

and from (8) and (10) for the effective power of the SE we obtain

$$P_{эф} = J_{кз}\left(\frac{n_2 kT}{eU_{xx}} - 1 - \frac{J_0}{J_{кз}}\right)\frac{n_1 kT}{e} \ln \frac{J_{кз}}{J_0} \frac{n_1 kT}{eU_{xx}}. \qquad (11)$$

In [2, 4], for the temperature dependence of the current saturation (J_0), short-circuit current (J_{kz}), and open-circuit voltage (U_{xx}), the following expressions are obtained

$$J_0 = J_{00} \exp\left(-\frac{e\varphi}{k}\left(\frac{1}{T_0} - \frac{1}{T}\right)\right), \qquad (12)$$

$$J_{кз} = J_{00} \exp\left[\frac{e\varphi}{k}\left(\frac{1}{T_0} - \frac{1}{T}\right)\right]\left[\exp\left[\frac{e\varphi}{nkT_0}\left(\frac{U_{0xx}}{\varphi} - 1 + \frac{T_0}{T}\right)\right] - 1\right], \qquad (13)$$

$$U_{xx} = (U_{0xx} - \varphi)\frac{T}{T_0} + \varphi, \qquad (14)$$

where J_{00} is the saturation current and U_{0xx} is the open circuit voltage at room temperature, φ- is the height of the potential barrier, *n*- is the non-ideality coefficient of the photovoltaic cells SE of the solar element, at the point of detection of the short circuit.

The dependence of the height of the potential barrier (φ) on the temperature of the SE has the same form from the temperature dependence of the forbidden band of the semiconductor [5]. Therefore, this dependence can be written as follows

$$\varphi = \varphi_0 - \gamma T , \qquad (15)$$

where φ_0 is the height of the potential barrier of the SE at temperature $T = 0$ K.

The value of φ_0 can be determined from (14) by extrapolating the dependence of the idling voltage on the temperature $(U_{xx}(T))$ by T → 0 K. γ-temperature coefficient of the potential barrier height. It is shown in [6] that its values lie in the range 10^{-3}-10^{-5} V / K.

It was shown in [2, 4] that the non-ideality coefficient *(n)* of the photo-VAC SE is almost independent of temperature in the temperature range 100 K <500 K. Therefore, from the expressions (8), (10) and (11) values of photovoltaic characteristics of solar elements.

Now we pass directly to the calculation of the temperature dependence of the effective values of photovoltaic characteristics of solar elements. It should be noted that all calculations were performed for $T_0 = 273$ K, $\varphi_0 = 1.42$ V, $\gamma = 5 \cdot 10^{-5}$ V / K, $U_{0xx} = 1.076$ V, $J_{00} = 1.75 \cdot 10^{-18}$ A.

Substituting in (8) formula (12) - (15) we obtain the expression that determines the temperature dependence of the effective voltage of the solar element SE.

In Fig. 2 shows the temperature dependence of the effective value of the voltage SE obtained by the formula (8). These calculations also showed that the effective value of the voltage of the solar element does not depend on the non-ideality of the photovoltaic, or it will be equal to one ($n_1 = 1$). This figure also shows the experimental results of the temperature dependence of the effective voltage of SEs obtained based on *AlGaAs-GaAs* [1]. It can be seen that these results are in good agreement in the temperature range 200 $K < T <$450 K. At the same time, below the temperature T = 200 K, the effective stress of the SE decreases strongly.

Substituting in (10) formula (12) - (15) we obtain the expression determining the temperature dependence of the effective value of the current SE.

In Fig. 3. Shows the temperature dependence of the effective value of the current SE obtained by the formula (10). These calculations also showed that the effective values of the SE current depend very strongly on the non-ideality coefficient of the photovoltaic cells. The agreement between the calculation results and the experiment [1], for the temperature dependence of the effective values of the current of a solar element based on AlGaAs-GaAs, are obtained on $n_1 = 2{,}4$.

It can be seen that these results are in good agreement in the temperature range 155 $K < T < 400$ K. It can be seen from the figure that below T = 150 K, the effective value of the current of SEs prepared on the basis of gallium arsenide is equal to zero. This is to say that such solar elements will not work at low temperatures.

Substituting formula (12) - (15) in (11), we obtain the expression determining the temperature dependence of the effective power of the SE.

In Fig. 4. shows the temperature dependence of the effective power of the solar elements obtained by the formula (11). Here also, the experimental results of the temperature dependence of the effective power of solar elements obtained on the basis of *AlGaAs-GaAs* are presented [1]. It can be seen that these results also agree well in the temperature range 200 $K < T < 450$ K.

Thus, in this paper we obtain expressions that establish the temperature dependence of the effective values of photovoltaic characteristics of solar elements based on *AlGaAs-GaAs*. It is shown that these expressions can fully explain the temperature dependence of the effective values of the photovoltaic characteristics of the solar elements obtained from the experiment. The calculations also showed that the effective value of the voltage does not depend on the non-ideality coefficient of the photovoltaic cells of the solar element.

Solar elements, based on gallium arsenide, will not work at temperatures below T = 150 K

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