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# DETERMINANTS OF SOUND WHISTLE BLOWERS' PROTECTION FRAMEWORK IN ZIMBABWE

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## ABSTRACT:

In as much as we strive to implement robust whistle blowers' protection framework in Zimbabwe, it is imperative to identify that influence the process. The risk of fraud, corruption and other illicit practices remained a cause for concern in both public and private sectors. Hence the need of whistle blowers as oversight mechanisms. It is in line with this view that this study looked at the factors that determine the effective implementation of whistle blowing protection framework in Zimbabwe. The study was therefore undertaken using a mixed methodology approach, to carry out a descriptive survey across a sample of 384 workers in both the private and public sectors who were picked using stratified and purposive sampling techniques. Questionnaires were administered to gather information and some of which were distributed online to counter the travel challenges during the time of study. Noted was that, honesty, truthfulness, integrity and transparency were all mentioned unanimously by respondents as

determinants of successful implementation of whistleblowers' protection frameworks in Zimbabwe. Therefore, there is need of all the management in both the private and public sector to take the lead in ethical behavior and the government should strengthen the activities of the whistle blowers as recommended by this research.

## INTRODUCTION:

In modern business situation, many companies are increasingly becoming more vulnerable to risks like scams, swindles, illicit practices, and fraud or corruption in both public and private sectors. These practices have adverse effects on the company's performance and the entire economic growth. The practice of whistleblowing is brought into being when firms or administration involve themselves in illegitimate or unprincipled practices or misconduct in the workplace to increase a competitive edge over the rival companies or co-workers (Kaur, 2012). Therefore, there is a rising need to protect whistle-blowers through sound legislation as they are significant in combating corruption and illicit dealings.

The concept of whistle-blowing is a relatively topical idea in the terminology of civic and business matters, even though the phenomenon existed long before in various cultural settings. Lately, whistle-blowing has developed into a common aspect of administration, from government agencies to corporate establishments all over the world (Kaur, 2012). Whistle blowing has been viewed in other societies as a Western idea, being perceived as a relinquishment of cultural traits and of the standards of societal behavior and faithfulness. However, many societies have adopted the concept and merged the concept with their anti-corruption policies.

Corruption is a cross cutting issue in all facades of the social order and happens in the political, commercial, societal, religious, and cultural domains. The anti-corruption capacity of the whistleblowing concept cannot be overstated. What is however in doubt is the existence of effective whistleblowers protection policies. Questions arise on whether the whistleblowers are sufficiently protected from retribution and revenge under the present dogmas in the world. Whistleblowers are uncovered against different echelons of jeopardy and could be vulnerable to different threats, being fired, litigated, detained, or even murdered (International Principles for Whistleblower Protection IPWP, 2017).

In countries like Thailand, studies reviewed that the current laws do not give enough protection to whistleblowers who end up facing many challenges. Provided that whistleblowers are typically personnel of the organisations where the informed misbehavior took place, they may face explicit menaces that are not presently enclosed in the witness defense laws, such as downgrading or dismissal

(International Transparency, 2013). Whistleblowers may be viewed as snitches, eventually, they maybe retaliated against and lose their job position because they may not be able to return to their offices for individual and professional motives (International Transparency, 2013). They can also discover themselves jobless for a lengthy period as a consequence of being detested from their specialized community and social networks. Possibly, they can be excluded from impending employment inside their field of work. In this regard, the archetypal actions provided under the witnesses' protection laws, such as transfer, police protection and altered identity, may not always be applicable in the situation of whistleblowers.

Kaur (2012) indicated that, in the previous epoch, several nations, including Australia, New Zealand, Canada, South Africa, and the United Kingdom, passed whistleblower edicts that guard public workers who divulge numerous forms of misbehavior, corruption or ineptitude. These enactments are conspicuous not only because of their number, but also because they have been implemented in lawful and cultural frameworks apparently incoherent with them. For instance, one of the more extensive whistleblower provisions might be visible in Great Britain, a nation with lawful and cultural ethnicities supporting confidentiality and secrecy.

The African Union Convention on Preventing and Combating Corruption (AUCPC 2003) in its preface identifies the unfavorable consequences that corruption has on the solidity of African counties and its publics, for example, reduction in GDP levels, scaring away investors among others. The African Union Convention on Preventing and Combating Corruption

ascertained the significance of whistleblowing as an anti- corruption instrument and instructs states to approve statutory measures to chastise those who make untruthful and spiteful hearsays against guiltless individuals in corruption and linked wrongdoings.

The common problem in various nations is that there is no effective legislation to protect the whistleblowers against varied socio-economic problems arising from the process of disclosing information (Banisar, 2011). For example, the South African Protected Disclosures Act (PDA) of 2000 indicated in its setting that employees in both private and public sectors have the responsibility of disclosing any form of wrongdoing but the responsibility is not constituted in the Act itself (Uys, 2008). This leaves the whistleblower at high risk with both company policies and the national law itself since there is no clear indication on how the responsibility of whistleblowing should be carried out.

Masaka (2007) noted that, the Zimbabwean administration so much entangled and knotted in the economy that it possesses parastatals and it also has substantial entitlements in privately owned organizations. These parastatals are also whirling from innate corruption and corporate misconducts. In light of this, Masaka (2007) noted that, the government may not be entirely compassionate to and sympathetic of the efforts put by whistle blowers to release occupational malpractices to the public because it fears that overtly recognizing and subsidizing whistle blowing can instigate those working by the government to also start revealing unprincipled and corrupt corporate practices when they notice them in public owned corporate establishments. Thus, the establishment of whistle blowing remains

endangered because the administration of organizations is mostly unreceptive to it and further, the government's energy to deal with the business sector of corrupt practices is muffled by a scuffle due to conflict of interests. Thus, enactment of policies to protect whistleblowers is based on varied interests.

In light with the above, the Zimbabwean economy has been stained by unscrupulous and malicious activities which have resulted in the country being robbed of billions of dollars through various leakages in both the private and the public sectors. In a bid to combat corrupt activities, whistleblowing has been adopted across different sectors of the economy. However, the current surge in cases of corporate misconducts in Zimbabwe has utterly rebooted a rigorous discussion on the ethical validation of whistleblowing (Masaka, 2007). The informer is, still, confronted with opposing and inconsistent moral standards and laws that make his choice to blow the whistle an ethically painful endeavour. The whistle bower is still suffering under a trail of ineffective policies to cover them and protect them against other cooperate and ethical aspects for instance, they may be charged of disclosing the company's confidential information yet it is a report against malicious acts. The study is thus motivated by the need to enact sound legislation to protect whistle blowers towards ending corruption. Thus, the study is an analysis of the whistle blowers' protection policies in private and public entities in Zimbabwe.

The concept on whistleblowing in relation to the above views can be understood from Grand (2015)'s views that, whistleblowing is a deliberate non-obligatory act of disclosure, which gets onto public record and is made by a person who has or had privileged access to data

or information of an organization, about nontrivial illegality or other wrongdoing whether actual, suspected or anticipated which implicates and is under the control of that organization, to an external entity having potential to rectify the wrongdoing.

Hersh (2002) also defined whistleblowing as including the thoughtful disclosure of information about non-trivial actions which are alleged to be treacherous, illegitimate, unethical, inequitable or else encompass offense, commonly by existing or ex organizational members.

### CONCEPTUAL FRAMEWORK:

This section of the study reviews literature on the major variables in the study and relate them to the act of whistleblowing which is the independent variable under scrutiny. Figure 2.1 shows the conceptual framework used to review literature. The literature is mainly reviewed on basis of how it affects the act of whistle blowing, that is review of literature on the policies/frameworks existing, effectiveness of the frameworks, barriers to the implementation of the frameworks and determinants to successful implementation. The major goal of the study is to analyse the whistle blowers' protection frameworks in Zimbabwe, and conclude whether whistle blowers are legislatively covered or not.

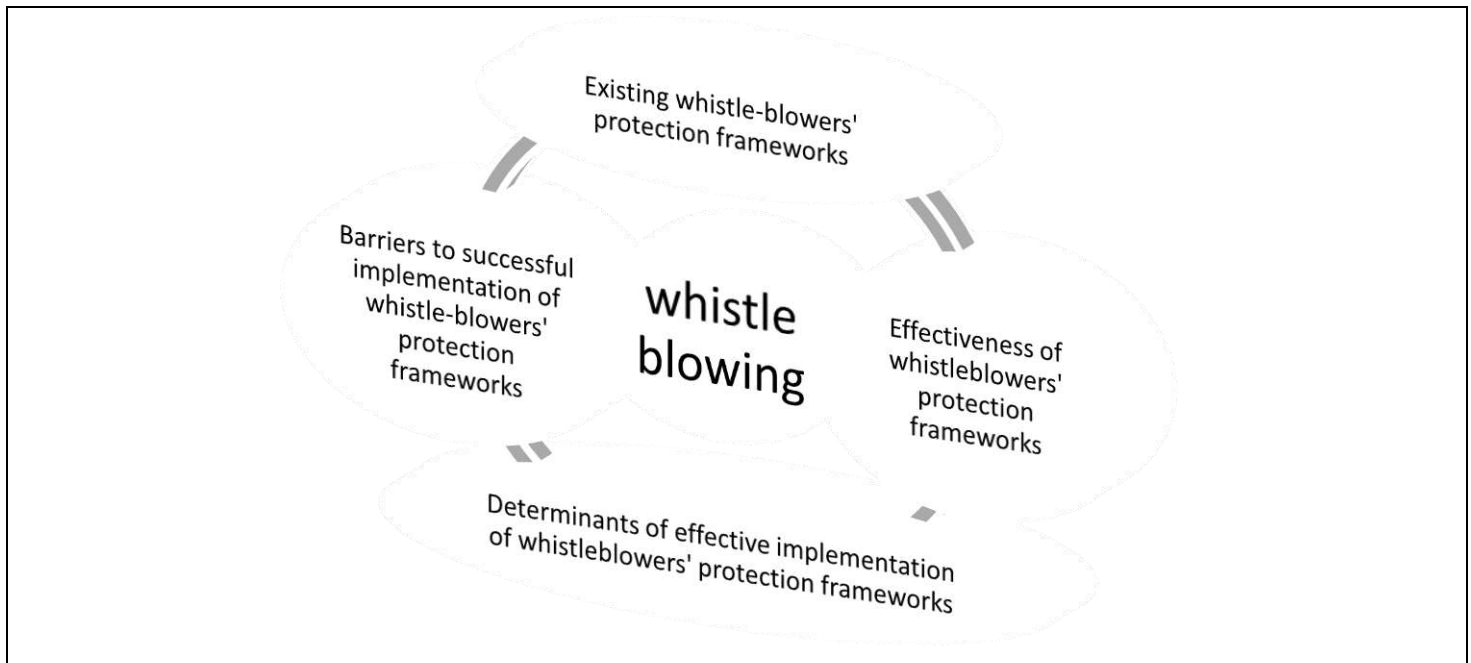


Figure 2.1. Conceptual framework (adapted from Dewi et al., 2015)

The conceptual framework in figure 2.1 clearly illustrates that the implementation of the whistleblowers' protection framework follows a cyclical order which firstly identifies and evaluate the existing whistle-blowers' protection framework, assess its effectiveness, identifying the determinants of effective

implementation of whistleblowers' protection framework and finally identify the barriers to successful implementation of whistle-blower' protection frameworks. This study therefore mainly focuses on the determinants of effective implementation of whistleblowers' protection framework.

### **1. Determinants to successful implementation of whistle blowers' protection frameworks:**

Support central leaders in the form of vocal and practical endorsement (for instance, supporting declarations and raising awareness) from the board, executive directors and senior management has been acknowledged as a critical basis for a philosophy of honesty, candidness and integrity in an organisation as a whole (Roberts, 2011). Thus, an essential starting point for any effective whistleblowing policy is a genuine desire from the board or governing body for employees to raise worries as well as truthful commitment at the management level to support them to do so (British Standards Institute (2008). Whistleblowing regimes are most effective where governing bodies and management have a clear understanding of the benefits of whistleblowing devices in general and of the nature of whistleblowing measures in their organisation in particular. Similarly, important is that management is seen to support internal reporting in practice (for example, reports are dealt with suitably and systematically, whistle blowers are supported and protected) in order to not to discourage other potential whistle-blowers. Administration can be held answerable for their management of whistle-blower concerns, for example, by including this as an aspect of their performance review (United Nations department of labour, 2015).

Some superlative practice guides encompass an admonition that open reporting is the perfect procedure of reportage; worries raised openly can be easier for the organisation to quickly comprehend and address (Public concern at work, 2013) and jeopardies of an environment of distrust emerging are minimised.

Nevertheless, a whistle-blower must have the right to keep their identity confidential to protect them from potential risks and retaliation and to allow the organisation to establish the facts of a case discreetly. Some organisations may also choose to enable anonymous reporting, although additional standards and guidelines for anonymous reporting are recommended and discussed below.

### **2. Research Methodology and Data Collection:**

The study uses a mixed methodology approach, applying both qualitative and quantitative methods. A mixed methodology includes the use of both quantitative and qualitative techniques in combination (Yin, 2003). Quantitative and qualitative techniques are highly compatible and offer the researcher the ability to choose the appropriate technique to more effectively answer particular research questions (Saunders, et al., 2009). Cresswell and Clark (2011) designates that the mixed methodology joins both the qualitative and quantitative methods to exploit the merits of each method and curtail the weaknesses of each other. A mixed method approach applies particularly the dominant-less dominant style (Rudestam and Newton, 2001). In this study the dominant approach was the qualitative method relying on general questionnaire surveys and interviews on workers from various companies. The qualitative approach was found most dominant because much of the data inquired in the study required explanations to address the objectives of the study.

### **3. Results and discussion:**

The study also inquired on the determinants to successful implementation of whistleblowers'

protection frameworks. From the responses, the study developed some four interesting themes and coded them into the SPSS then compare means. Table 5.1 presents the results.

Table 5.1. Determinants to successful implementation of whistle-blowers’ protection frameworks

	Report			
	Honesty	Truthfulness	Integrity	Transparency
Mean	.68	.68	.83	.70
N	308	308	308	308
Std. Deviation	.467	.469	.375	.457
Sum	210	208	256	217

Table 5.1. indicates that honesty, truthfulness, integrity and transparency were all mentioned unanimously by respondents as determinants of successful implementation of whistleblowers’ protection frameworks. Figure 5.1 summarizes the frequencies of mentions of the four thematic factors of successful implementation of whistleblowers’ protection frameworks.

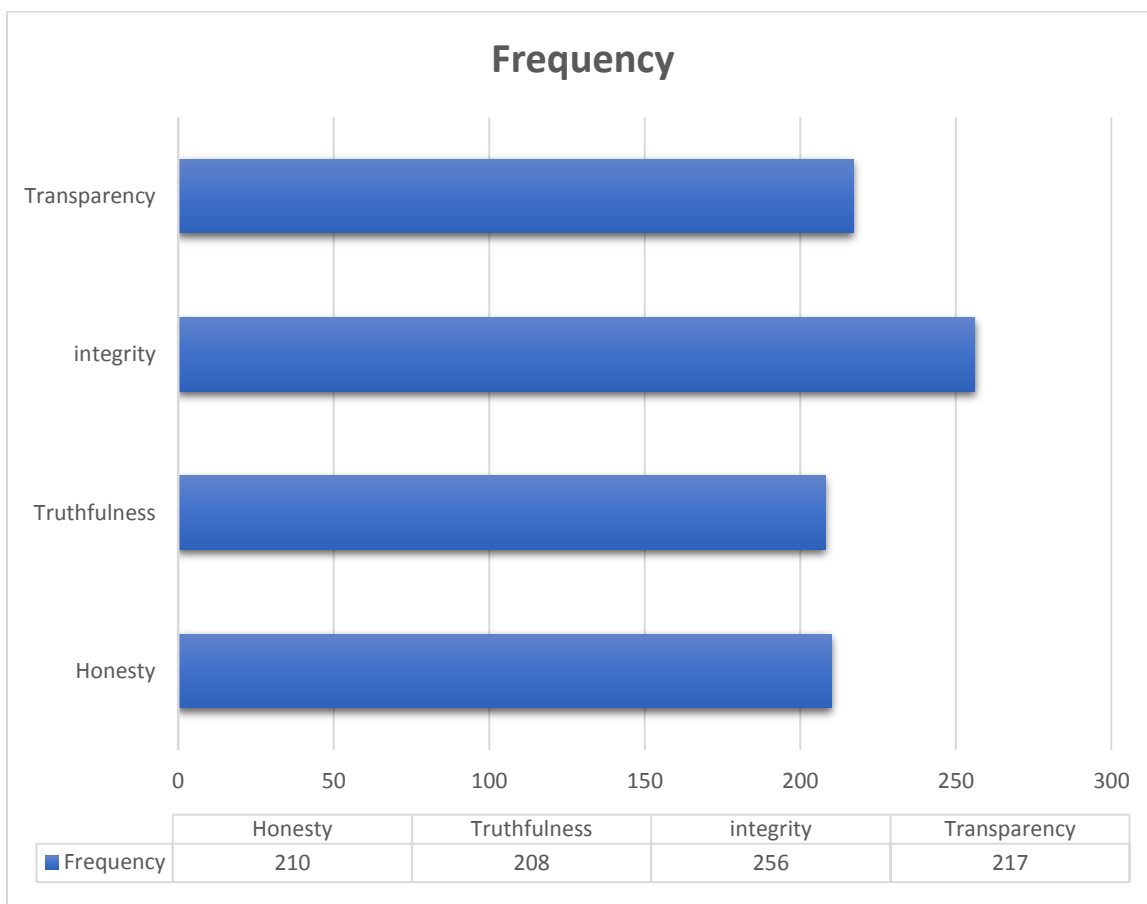


Figure 5.1 Determinants to successful implementation of whistleblowers’ protection frameworks



According to the figure 4.7. frequencies have been given in respect to the mentioned determinants and a clear table of value is given against each category. From a social perspective, the study therefore interpreted that, honesty, truthfulness, integrity and transparency within organizations lead to successful implementation of protection frameworks.

Since the study asked open questions, various other determinants were also mentioned variably by different respondents, for instance, financial support, stakeholder involvement, mechanisms to preserve anonymity, among other things. Another interviewee provided a statement; "...we need proper ways to awaken the public, making sure that corruption is taught to every individual, let people understand the consequences of corruption. That way they will also understand the need for effective frameworks. The government must also ensure that the law enforcement agents and private players are cautioned on the dangers associated with covering up unscrupulous deals." (Interviewee)

This goes back to literature from people like Roberts (2011) who emphasizes on the need for support from central leaders in form of vocal and practical forms. The government should support fully the implementation of these frameworks.

#### **CONCLUSION:**

The main goal of this study was to analyse whistleblowers' protection frameworks in Zimbabwe. However, this research focused on identifying the determinants of effective implementation of the whistle blowers' protection framework in Zimbabwe. Notably, common factors that determine the effective implementation of the whistle blowers' include

but not limited to honesty, truthfulness, integrity and transparency. Therefore, this calls for the policy makers to implement the policies and legislations that promote honesty, truthfulness, integrity and transparency.

#### **RECOMMENDATIONS:**

Law makers to focus on/or speeding up the enactment of a working clear national whistleblowers' protection legislature. Equally important, all companies to have comprehensive and firm policies related to national laws to cover whistleblowers. The government through commissions of anti-corruption to make it law that every organization should have working policies to ensure that whistleblowers have confidence enough to uproot corrupt and illicit dealings. Generally, all players in fight against corruption should come up with communication procedures effective enough to ensure swift reportage and maintaining security of whistleblowers' images.

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# ARIMA FORECASTING OF THE PREVALENCE OF ANEMIA AMONG PREGNANT WOMEN IN ETHIOPIA

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## ABSTRACT:

**Anemia in pregnancy is a serious public health problem resulting in high maternal morbidity and mortality especially in developing countries such as Ethiopia. Using annual time series data on the prevalence of anemia among pregnant women in Ethiopia from 1990 - 2018, the study attempts to make forecasts for the period 2017 - 2025. The study applied the Box-Jenkins ARIMA methodology. The diagnostic ADF tests show that, AB, the series under consideration is an I (2) variable. Based on the AIC, the study presents the ARIMA (1, 2, 0) model as the optimal model. The diagnostic tests further indicate that the presented model is quite stable and its residuals are not serially correlated and are also normally distributed. The results of the study show that the prevalence of anemia among pregnant women in Ethiopia will rise over the out-of-sample period. The study, amongst other recommendations, encourages the government of Ethiopia to expand coverage of its support to pregnant women, particularly through the routine supplementations with iron and folate. Furthermore, reproductive women should be educated about anemia in pregnancy.**

## INTRODUCTION:

Anemia is defined as hemoglobin concentration which is less than 11g/dL (WHO, 2014). Even if anemia is a worldwide public health problem affecting numerous people in

all age groups, particularly the burden of the problem is higher among pregnant women (Akhtar & Hassan, 2012), especially those who live in developing countries such as Ethiopia. In fact, 1.62 billion people in the world are anemic, of these, 56 million anemia cases are found in women (Balarajan et al., 2011). Worldwide, anemia contributes to at least 115000 maternal deaths and 591000 prenatal deaths per year (Salhan et al., 2012). In Africa, at least 51.7% of pregnant women are anemic (WHO, 2008). In Ethiopia, with an overall prevalence of approximately 62.7% (WHO, 2011; Gebre & Mulugeta, 2015; Ayano & Amentie, 2018); anemia remains a major public health problem, which causes maternal and fetal severe consequences (Berhe et al., 2019). The main purpose of this study is to predict the prevalence of anemia among pregnant women in Ethiopia over the period 2017 - 2025. This study is important in the sense that public health policy makers will use the findings to design appropriate interventions to reduce the high burden of the disease, now, as well as in future.

## LITERATURE REVIEW:

In a systematic review and meta-analysis, Kassa et al. (2017) analyzed the prevalence and determinants of anemia in Ethiopia and found out that about one-third of pregnant women in the country were anemic. These results have also been confirmed by Serbesa & Iffa (2018) whose study assessed the knowledge, attitude and practice of pregnant

women with regard to prevention of iron deficiency anemia in public hospitals of Harar, Eastern Ethiopia. Kassa et al. (2017) also found out that Malaria infections and gravidity were shown to be some of the main factors causing anemia in the country. In an institutional based cross-sectional study, Zekarias et al. (2017) examined the prevalence and determinants of anemia among pregnant women attending antenatal care (ANC) in Mizan Tepi University Teaching Hospital, South West Ethiopia; from April 3 to May 3 2017. Bivariate and multivariate logistic regression was applied. The study established that the overall prevalence of anemia was 23.5%. In a recent hospital-based cross-sectional study, Berhe et al. (2019) determined the prevalence and associated factors of anemia in Adigrat General Hospital. A multivariate logistic regression was applied. The results of the study indicate that the prevalence of anemia among pregnant women under the study was 7.9%. No forecasting studies have been done in the country with regards to predicting anemia in pregnancy. This paper will be the first of its kind in Ethiopia.

**METHODOLOGY:**

**3.1 The Box – Jenkins (1970) Methodology:**

The first step towards model selection is to difference the series in order to achieve stationary. Once this process is over, the researcher will then examine the correlogram in order to decide on the appropriate orders of the AR and MA components. It is important to highlight the fact that this procedure (of choosing the AR and MA components) is biased towards the use of personal judgment because

there are no clear – cut rules on how to decide on the appropriate AR and MA components. Therefore, experience plays a pivotal role in this regard. The next step is the estimation of the tentative model, after which diagnostic testing shall follow. Diagnostic checking is usually done by generating the set of residuals and testing whether they satisfy the characteristics of a white noise process. If not, there would be need for model re – specification and repetition of the same process; this time from the second stage. The process may go on and on until an appropriate model is identified (Nyoni, 2018c). This approach will be used to analyze, AB, the series under consideration.

**3.2 The Applied Box – Jenkins ARIMA Model Specification:**

If the sequence  $\Delta^d AB_t$  satisfies an ARMA (p, q) process; then the sequence of  $AB_t$  also satisfies the ARIMA (p, d, q) process such that:

$$\Delta^d AB_t = \sum_{i=1}^p \beta_i \Delta^d L^i AB_t + \sum_{i=1}^q \alpha_i L^i \mu_t + \mu_t \dots \dots \dots [1]$$

where  $\Delta$  is the difference operator, vector  $\beta \in \mathbb{R}^p$  and  $\alpha \in \mathbb{R}^q$ .

**3.3 Data Collection:**

This study is based on annual observations (that is, from 1990 – 2018) on the prevalence of anemia among pregnant women, that is, the percentage of pregnant women whose hemoglobin level is less than 110 grams per liter at sea level [denoted as AB] in Ethiopia. Out-of-sample forecasts will cover the period 2017 – 2025. All the data was collected from the World Bank online database.

### 3.4 Diagnostic Tests & Model Evaluation:

#### 3.4.1 The ADF Test in Levels:

Table 1: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
AB	-1.553893	0.4899	-3.737853	@1%	Non-stationary
			-2.991878	@5%	Non-stationary
			-2.635542	@10%	Non-stationary

Table 1 shows that AB is not stationary in levels.

#### 3.4.2 The ADF Test (at First Differences):

Table 2: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
$\Delta AB$	-1.181634	0.6658	-3.724070	@1%	Non-stationary
			-2.986225	@5%	Non-stationary
			-2.632604	@10%	Non-stationary

Table 2 shows that AB is not an I (1) variable.

#### 3.4.3 The ADF Test (at Second Differences):

Table 3: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
$\Delta^2 AB$	-6.968621	0.0000	-3.737853	@1%	Stationary
			-2.991878	@5%	Stationary
			-2.635542	@10%	Stationary

Table 3 indicates that AB is an I (2) variable.

#### 3.4.4 Evaluation of ARIMA models (without a constant):

Table 4: Evaluation of ARIMA Models (without a constant)

Model	AIC	U	ME	RMSE	MAPE
ARIMA (1, 2, 1)	-47.80291	0.4788	0.024176	0.082308	0.14566
ARIMA (1, 2, 0)	-49.71115	0.47985	0.025118	0.08247	0.14331
ARIMA (2, 2, 0)	-47.86316	0.47806	0.023196	0.082197	0.14701
ARIMA (0, 2, 1)	-49.17551	0.48541	0.026031	0.083421	0.14558

A model with a lower AIC value is better than the one with a higher AIC value (Nyoni, 2018b) Similarly, the U statistic can be used to find a better model in the sense that it must lie between 0 and 1, of which the closer it is to 0,

the better the forecast method (Nyoni, 2018a). In this research paper, only the AIC is used to select the optimal model. Therefore, the ARIMA (1, 2, 0) model is eventually chosen.

### 3.5 Residual & Stability Tests:

#### 3.5.1 Correlogram of the Residuals of the ARIMA (2, 2, 0) Model:

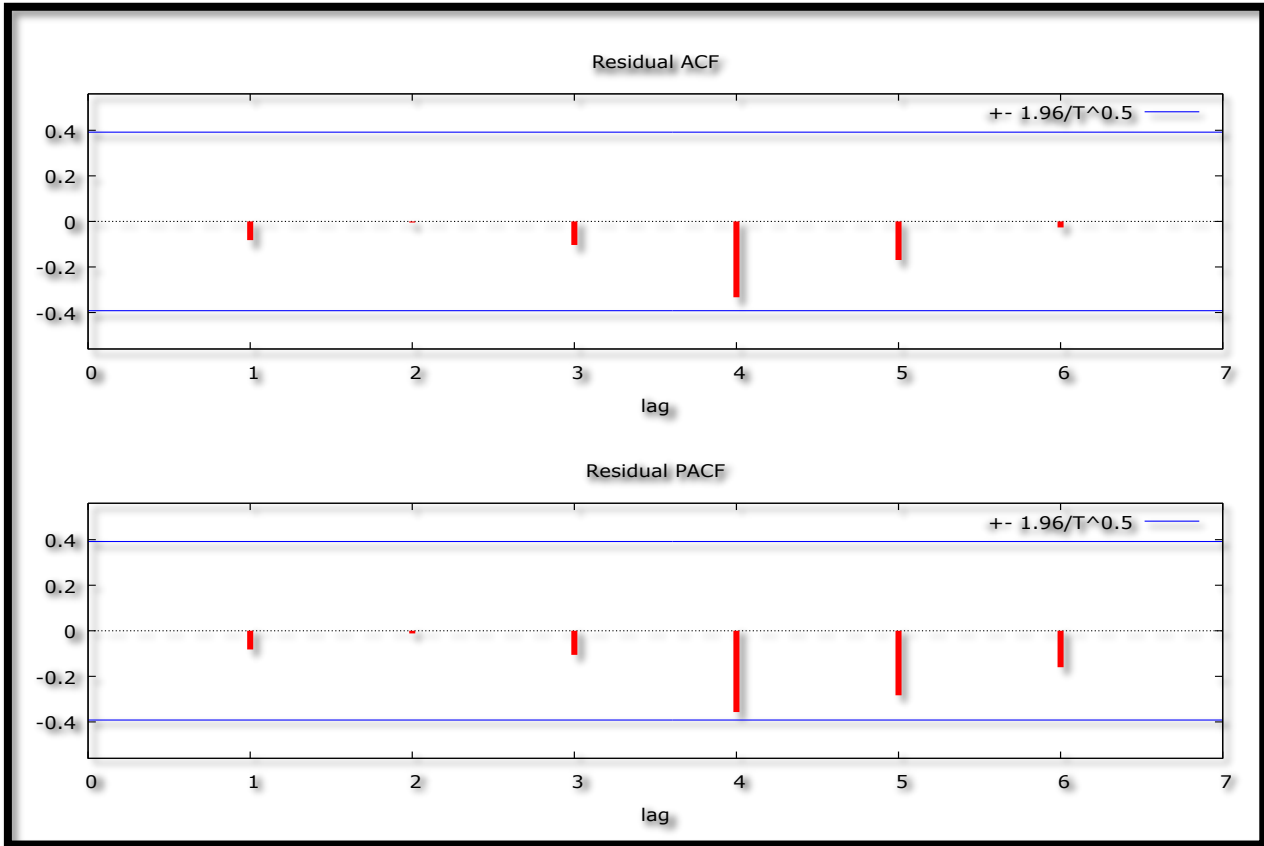


Figure 1: Correlogram of the Residuals

Figure 1 indicates that the estimated optimal ARIMA (1, 2, 0) model is adequate since ACF and PACF lags are quite short and within the bands.

#### 3.5.2 Stability Test of the ARIMA (1, 2, 0) Model:

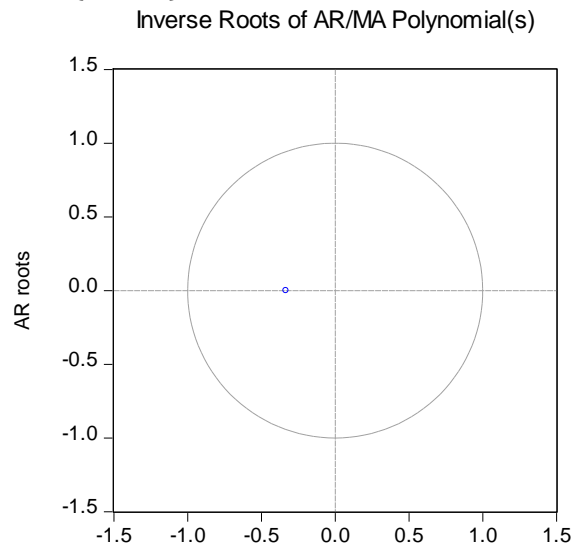


Figure 2: Inverse Roots

Since the AR root lies inside the unit circle, it implies that the estimated ARIMA process is (covariance) stationary; thus confirming that the ARIMA (1, 2, 0) model is stable.

**3.5.3 Normality Test of the Residuals of the ARIMA (1, 2, 0) Model:**

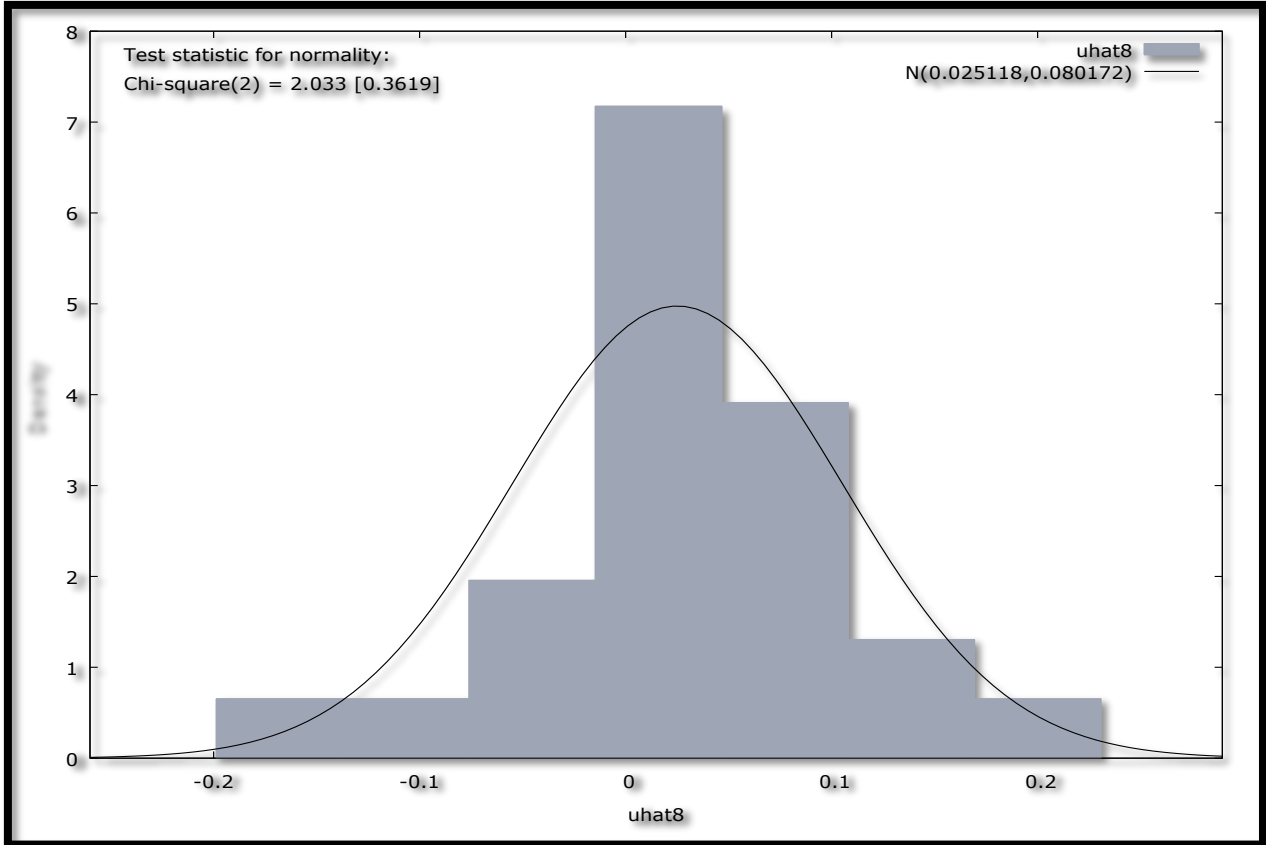


Figure 3: Normality Test

Since the probability value of the chi-square statistic is insignificant, we reject the null hypothesis and conclude that the residuals of the ARIMA (1, 2, 0) model are normally distributed.

**FINDINGS OF THE STUDY:**

**4.1 Results Presentation:**

Table 5: Main Results

<b>ARIMA (1, 2, 0) Model:</b>				
The chosen optimal model, the ARIMA (1, 2, 0) model can be expressed as follows: $\Delta^2 AB_t = -0.319869\Delta^2 AB_{t-1} \dots \dots \dots [2]$				
Variable	Coefficient	Standard Error	z	p-value
$\beta_1$	-0.319869	0.194384	-1.646	0.0999*

Table 5 shows the main results of the ARIMA (1, 2, 0) model.

**Forecast Graph**

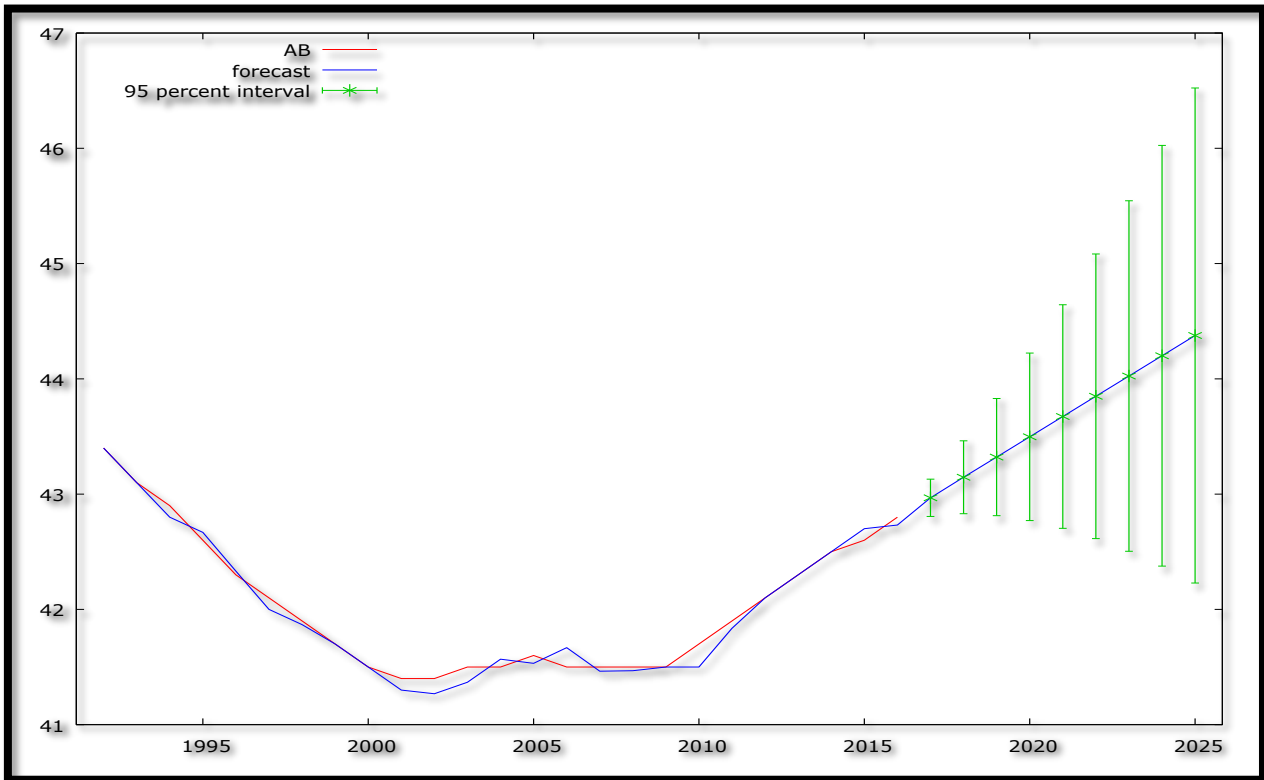


Figure 4: Forecast Graph – In & Out-of-Sample Forecasts

Figure 4 shows the in-and-out-of-sample forecasts of the AB series. The out-of-sample forecasts cover the period 2017 – 2025.

**Predicted AB- Out-of-Sample Forecasts Only**

Table 6: Predicted AB

Year	Predicted AB	Standard Error	95% Confidence Interval
2017	42.9680	0.0824700	(42.8064, 43.1297)
2018	43.1463	0.161246	(42.8302, 43.4623)
2019	43.3212	0.259317	(42.8130, 43.8295)
2020	43.4972	0.370711	(42.7707, 44.2238)
2021	43.6729	0.494728	(42.7033, 44.6426)
2022	43.8487	0.629982	(42.6140, 45.0835)
2023	44.0245	0.775669	(42.5042, 45.5448)
2024	44.2002	0.931073	(42.3754, 46.0251)
2025	44.3760	1.09563	(42.2286, 46.5234)

Table 6 shows the out-of-sample forecasts only. The prevalence of anemia in pregnant women in Ethiopia is forecasted to slightly rise from the estimated 43% to about 44.4% by 2025. These results suggest that anemia in pregnancy in Ethiopia remains a

challenge for public health policy makers (Berhe et al., 2019).

**CONCLUSION:**

The study shows that the ARIMA (1, 2, 0) model is not only stable but also the most



suitable model to forecast the prevalence of anemia among pregnant women in Ethiopia over the period 2017 – 2025. The presented model hints of a possible sharp rise in the prevalence of anemia in the country's pregnant women. The study encourages the government of Ethiopia to intensify its support to pregnant women through the routine supplementations with iron and folate. This may reverse the predicted trend. Additionally, the government of Ethiopia should strengthen HIV/TB programme collaboration as well as establish women friendly clinics to screen and educate women in the reproductive age group. Moreso, reproductive women should be educated about anemia in pregnancy.

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## ARIMA FORECASTING OF THE PREVALENCE OF ANEMIA AMONG PREGNANT WOMEN IN GHANA

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### ABSTRACT:

**Anemia is the most common hematological disorder; that can occur in women. In pregnancy, anemia is usually a result of iron deficiency and sometimes a result of folic acid deficiency, amongst other causes. Using annual time series data on the prevalence of anemia among pregnant women in Ghana from 1990 - 2018, the study attempts to make forecasts for the period 2017 - 2025. The research applies the Box-Jenkins ARIMA methodology. The diagnostic ADF tests show that the AG series under consideration is an I (2) variable. Based on the AIC, the study presents the ARIMA (1, 2, 0) model as the optimal model. Furthermore, the diagnostic tests reveal that the presented model is indeed stable and its residuals are not serially correlated and are also normally distributed. The results of the study indicate that the prevalence of anemia among women in Ghana is likely to continue to decline over the out-of-sample period. Amongst other policy prescriptions, the study recommends iron supplementation during pregnancy for reproductive women in the country.**

### INTRODUCTION:

Anemia in pregnancy is a major public health problem around the globe, especially in developing countries (McLean et al., 2009). About 2 billion people are anemic worldwide (WHO, 2001). In fact, Africa has the highest prevalence of anemia in pregnancy (McLean et

al., 2009). Ghana is among the countries in Africa with a high prevalence of anemia in pregnancy (GSS, 2015). Anemia in pregnancy is defined as hemoglobin concentration less than 11g/dl (WHO, 2015). Anemia in pregnancy is associated with adverse maternal and neonatal health outcomes such as miscarriages, stillbirths, intrauterine growth restriction, perinatal anemia and maternal mortality (Chumak & Grijbovski, 2010; Mirzaie et al., 2010; Zerfu & Ayele, 2013; New & Wirth, 2015). There are many causes of anemia in pregnancy, but the most common ones are iron and folate deficiencies (Look et al., 2006; Zerfu & Ayele, 2013). In the case of Ghana, the causes of anemia in pregnant women are iron and folate deficiencies as well as intestinal parasitic infections, malaria, HIV infections, and hemoglobinopathies such as sickle cell anemia and beta-thalasaemias (Vochem et al., 1998; Apea-Kubi et al., 2004; Ouma et al., 2007; Engmann et al., 2008; Baidoo et al., 2010; Tay et al., 2013; Volker et al., 2017). Well known obstetric causes of anemia in pregnancy include teenage pregnancies, pregnancy among elderly women, very low body mass index as well as more than five previous deliveries (grand multiparity) (Liabsuetrakul, 2011; Al-Farsi et al., 2011; GSS, 2015). The main aim of this study is to predict the prevalence of anemia among pregnant women in Ghana over the period 2017 - 2025.

**LITERATURE REVIEW:**

In a prospective case control study, Geelhoed et al. (2006) examined determinants of severe anemia in rural Ghana. General linear modeling was applied. The results of the study indicated that multiple pregnancy, urinary tract infections, less than 4 ANC visits as well as body mass index were the main factors contributing to anemia in pregnancy in rural Ghana. In a cross-sectional study, Anlaaku & Anto (2017), identified factors associated with anemia among pregnant women receiving antenatal care at the Sunyani Municipal Hospital in Ghana between May and June 2015. Bivariate and multivariate analyses were carried out to determine factors associated with anemia. The study established that Malaria infection, fish/snails intake and gestational age at first ANC visit were significantly associated with anemia. In retrospective analysis of ANC records of pregnant women, Nonterah et al. (2019) determined the prevalence and maternal factors associated with anemia in pregnancy at first ANC visits in rural Ghana. The study was carried out in the Navrongo War Memorial Hospital, a secondary referral facility in the Kassena-Nankana district in rural Northern Ghana. A logistic regression model was applied. The study found out that the burden of anemia was still very high in rural Ghana and that the main factors associated with anemia in pregnancy were grand multiparity, booking during the 3<sup>rd</sup> trimester as well as mothers who were underweight. No even a single study has attempted to forecast the prevalence of anemia in pregnancy in the country. It is research gap that this study intends to fill.

**METHODOLOGY:**

**3.1 The Box – Jenkins (1970) Methodology**

The first step towards model selection is to difference the series in order to achieve stationarity. Once this process is over, the

researcher will then examine the correlogram in order to decide on the appropriate orders of the AR and MA components. It is important to highlight the fact that this procedure (of choosing the AR and MA components) is biased towards the use of personal judgement because there are no clear – cut rules on how to decide on the appropriate AR and MA components. Therefore, experience plays a pivotal role in this regard. The next step is the estimation of the tentative model, after which diagnostic testing shall follow. Diagnostic checking is usually done by generating the set of residuals and testing whether they satisfy the characteristics of a white noise process. If not, there would be need for model re – specification and repetition of the same process; this time from the second stage. The process may go on and on until an appropriate model is identified (Nyoni, 2018c). This approach will be used to analyze the AG series under consideration.

**3.2 The Applied Box – Jenkins ARIMA Model Specification:**

If the sequence  $\Delta^d AG_t$  satisfies an ARMA (p, q) process; then the sequence of  $AG_t$  also satisfies the ARIMA (p, d, q) process such that:

$$\Delta^d AG_t = \sum_{i=1}^p \beta_i \Delta^d L^i AG_t + \sum_{i=1}^q \alpha_i L^i \mu_t + \mu_t \dots \dots \dots [1]$$

where  $\Delta$  is the difference operator, vector  $\beta \in \mathbb{R}^p$  and  $\alpha \in \mathbb{R}^q$ .

**3.3 Data Collection**

This study is based on annual observations (that is, from 1990 – 2018) on the prevalence of anemia among pregnant women, that is, the percentage of pregnant women whose hemoglobin level is less than 110 grams per liter at sea level [denoted as AG] in Ghana. Out-of-sample forecasts will cover the period 2017 – 2025. All the data was collected from the World Bank online database.

### 3.4 Diagnostic Tests & Model Evaluation:

#### 3.4.1 The ADF Test in Levels:

Table 1: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
AG	-1.584129	0.4750	-3.737853	@1%	Non-stationary
			-2.991878	@5%	Non-stationary
			-2.635542	@10%	Non-stationary

Table 1 shows that AG is not stationary in levels.

#### 3.4.2 The ADF Test (at First Differences):

Table 2: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
$\Delta$ AG	-0.680047	0.8343	-3.724070	@1%	Non-stationary
			-2.986225	@5%	Non-stationary
			-2.632604	@10%	Non-stationary

From table 2, AG is also not stationary even after taking first differences.

#### 3.4.3 The ADF Test (at Second Differences):

Table 3: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
$\Delta^2$ AG	-5.150894	0.0004	-3.737853	@1%	Stationary
			-2.991878	@5%	Stationary
			-2.635542	@10%	Stationary

As shown in table 3, AG is an I (2) variable.

#### 3.4.4 Evaluation of ARIMA models (with a constant):

Table 4: Evaluation of ARIMA Models (with a constant)

Model	AIC	U	ME	RMSE	MAPE
ARIMA (1, 2, 1)	-54.43264	0.2138	-0.00002	0.06936	0.092325
ARIMA (1, 2, 0)	<b>-55.92534</b>	0.21576	0.00015144	0.070098	0.093621
ARIMA (2, 2, 0)	-55.30499	0.20964	- 0.00037162	0.06802	0.08958
ARIMA (0, 2, 1)	-55.75602	0.21638	0.00012499	0.070351	0.095142
ARIMA (0, 2, 2)	-55.89688	0.20648	-0.0005989	0.067088	0.087632

A model with a lower AIC value is better than the one with a higher AIC value (Nyoni, 2018b) Similarly, the U statistic can be used to find a better model in the sense that it must lie between 0 and 1, of which the closer it is to 0, the better the forecast method (Nyoni, 2018a). In this research paper, only the AIC is used to select the optimal model. Therefore, the ARIMA (1, 2, 0) model is finally selected.

### 3.5 Residual & Stability Tests:

#### 3.5.1 Correlogram of the Residuals of the ARIMA (1, 2, 0) Model:

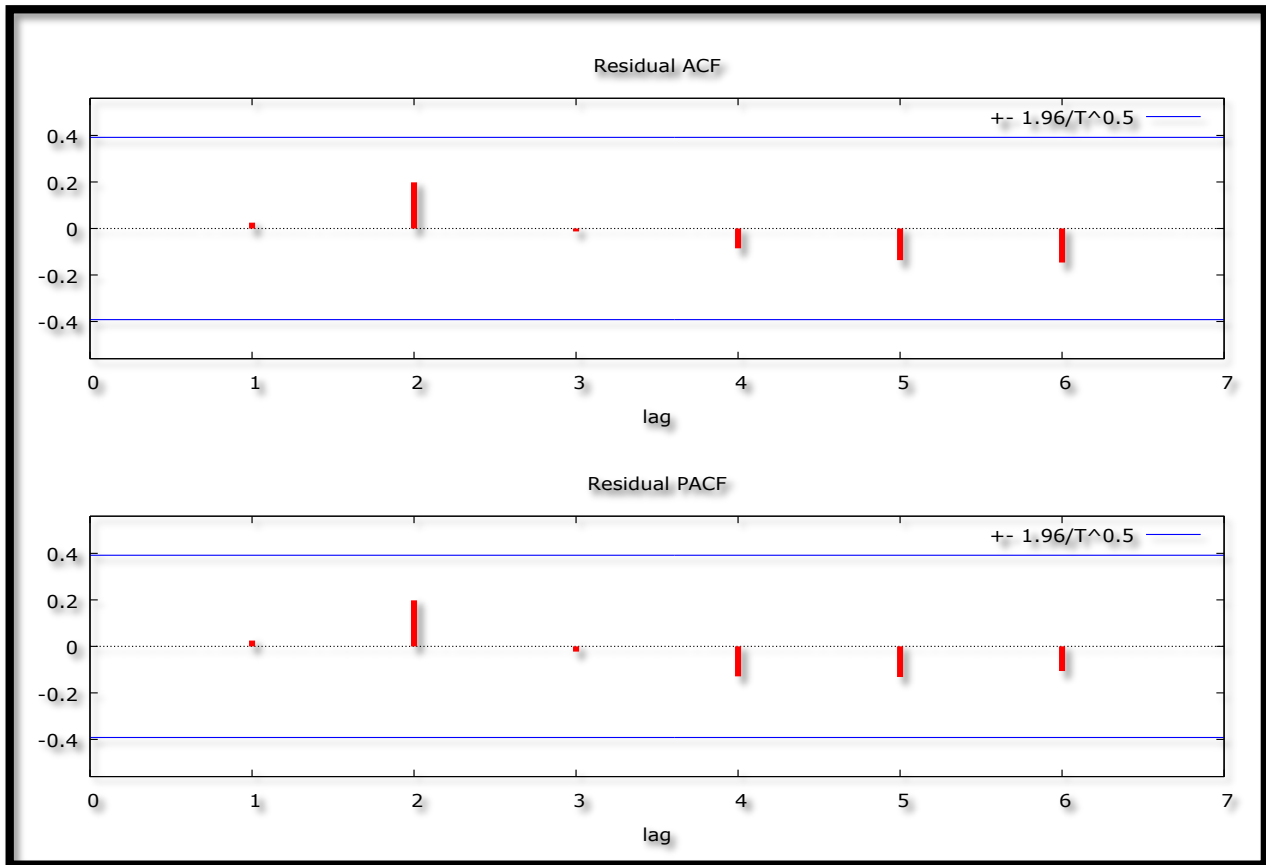


Figure 1: Correlogram of the Residuals

Figure 1 shows that the estimated optimal model is adequate since ACF and PACF lags are quite short and within the bands.

#### 3.5.2 Stability Test of the ARIMA (1, 2, 0) Model:

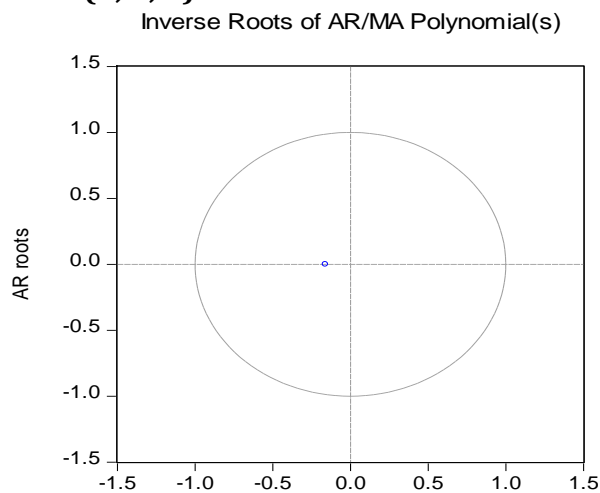


Figure 2: Inverse Roots

Because all the AR root lies inside the unit circle, it implies that the estimated ARIMA process is (covariance) stationary; thus confirming that the ARIMA (1, 2, 0) model is stable.

### 3.5.3 Normality Test of the Residuals of the ARIMA (1, 2, 0) Model

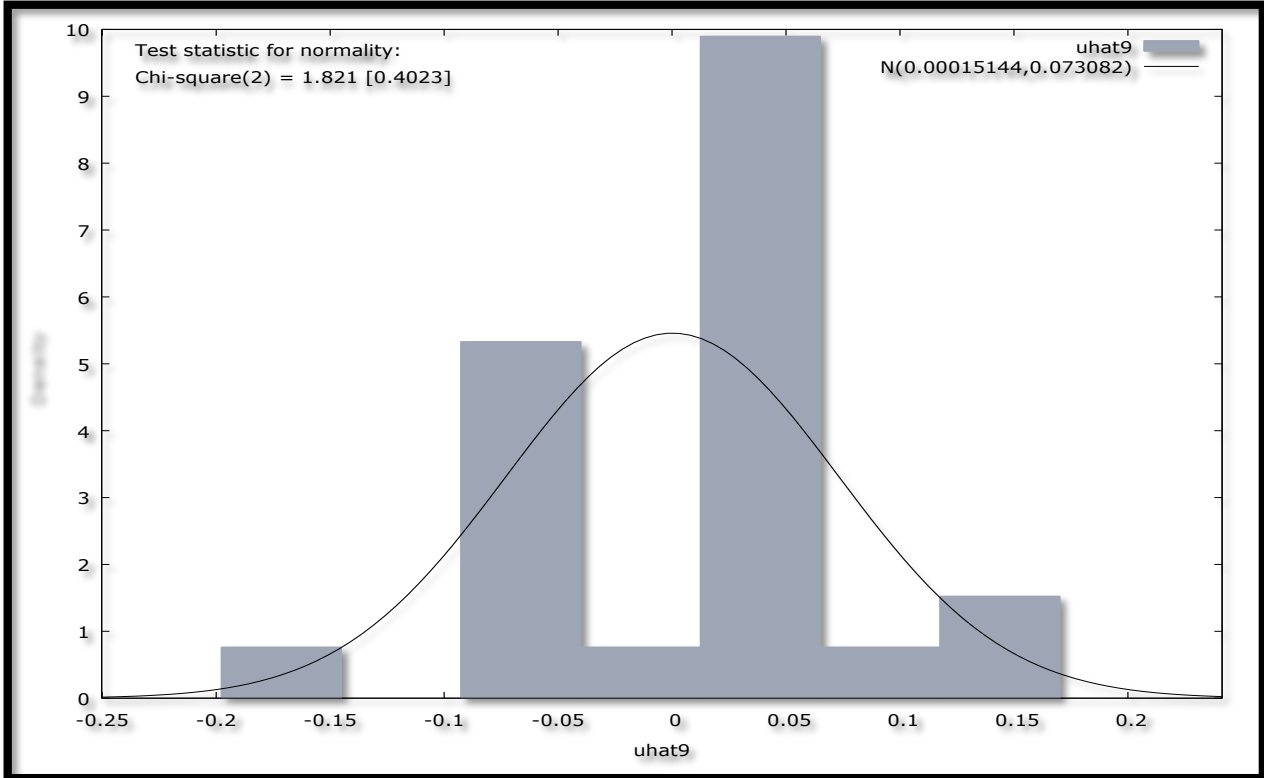


Figure 3: Normality Test

Given that the probability value of the chi-square statistic is insignificant, we reject the null hypothesis and conclude that the residuals of the ARIMA (1, 2, 0) model are normally distributed.

## FINDINGS OF THE STUDY

### 4.1 Results Presentation

Table 5: Main Results

<b>ARIMA (1, 2, 0) Model:</b>				
The chosen optimal model, the ARIMA (1, 2, 0) model can be expressed as follows: $\Delta^2 AG_t = -0.0247926 - 0.152704\Delta^2 AG_{t-1} \dots \dots \dots [2]$				
Variable	Coefficient	Standard Error	z	p-value
constant	-0.0247926	0.0122471	-2.024	0.0429**
$\beta_1$	-0.152704	0.211729	-0.7212	0.4708

Table 5 shows the main results of the ARIMA (1, 2, 0) model.

## Forecast Graph

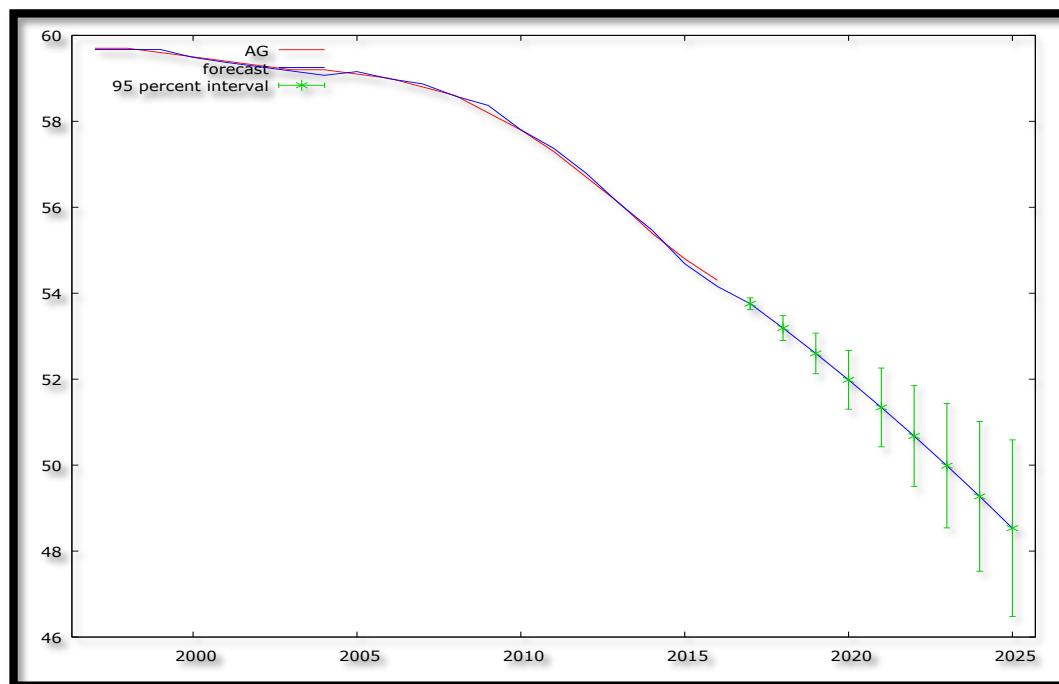


Figure 4: Forecast Graph – In & Out-of-Sample Forecasts

Figure 4 shows the in-and-out-of-sample forecasts of the AG series. The out-of-sample forecasts cover the period 2017 – 2025.

### Predicted AG– Out-of-Sample Forecasts Only

Table 6: Predicted AG

Year	Predicted AG	Standard Error	95% Confidence Interval
2017	53.7562	0.0700941	(53.6188, 53.8935)
2018	53.1904	0.147239	(52.9018, 53.4790)
2019	52.5995	0.240776	(52.1275, 53.0714)
2020	51.9838	0.348019	(51.3017, 52.6659)
2021	51.3433	0.467464	(50.4270, 52.2595)
2022	50.6780	0.597981	(49.5060, 51.8500)
2023	49.9879	0.738708	(48.5401, 51.4357)
2024	49.2730	0.888955	(47.5307, 51.0153)
2025	48.5334	1.04816	(46.4790, 50.5877)

Table 6 and figure 4 show the out-of-sample forecasts only. The prevalence of anemia in Ghana is predicted to continue on a downwards trend from about 54% in 2017 to almost 49% by 2025. However, the burden of anemia in pregnancy is still very high in Ghana (Anlaaku & Anto, 2017; Nonterah et al., 2019).

### CONCLUSION:

The paper shows that the ARIMA (1, 2, 0) model is not only stable but also the most suitable model to make predictions of the prevalence of anemia among pregnant women in Ghana over the period 2017 – 2025. The model predicts a commendable decrease in the

prevalence of anemia among pregnant women in the country. Unfortunately, the prevalence of anemia in Ghana among pregnant women, remains unacceptably high. The forecasts of this research point to the need for iron supplementation during pregnancy for reproductive women in the country. The government of Ghana should also improve; especially early access to Antenatal Care (ANC) services and also expand coverage of malaria programs. There is also need for early diagnosis and treatment of HIV/TB in pregnancy through HIV/TB programme collaborations to reduce anemia incidence related to TB/HIV.

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## COVID-19: GLOBAL CHANGE & IMPACT ON TOURISM SECTOR

MEENAKSHI SHARMA

RITIK SHARMA

### ABSTRACT:

This article scrutinizes the commercial influence of the COVID-19 worldwide, across countries and industries. It further studies the economic channels, which will have a consequence on economic activities.

In December 2019, the eruption of COVID-19 began in Wuhan, China, and it is persistently outspreading globally. Almost 7, 06, 29,278 cases have been reported by writing this draft dated June 9, 2020, with 405,587 deaths globally.

Though some countries managed to deal effectively with the pandemic, there is no certainty about the abundance of circumstances, as it can increase or decrease anytime as more innumerable cases are being reported to World Health Organisation by new countries. However, it seems that the impression of COVID-19 was at his peak in China earlier, but at present, its declining says vanished, but the opposite trend is seen in other countries.

The authorities worldwide have been introducing contingency plans to recover from the commercial influence of COVID-19 because the consequence of the epidemic is far exceeded the mortality rate. Moreover, there ought to be a termination in the global supply chain due to blockade and lockdowns imposed by various counties, which directly possessed an impression on the companies and the country's economy.

In the subsequent periods, millions of personages may lose their jobs because of the repulsive account about the severe financial impact of COVID-19 every day, including closing corporations, announcing revised estimates, proclaiming lay-offs. In

other words, to reduce variations in consumer inclinations, deficiencies of products, medications, and global changes in the trade chain. The global financial market has fallen sharply, and compared with previous financial crises, it is very volatile.

Global policymakers still have time to take coordinated policy responses to Coronavirus and their economic impact. However, time is running out. There beget a rise of 2% in unemployment due to recession, as correlated to any previous crisis. However, this time the economy is confronting a twofold effect or state twofold financial effect as far as to request and flexibly chain as a result of the vulnerability of the wellsprings of the infection and how it has an advancing nature.

This article initially talks about the effect of COVID-19 on the Indian economy, just as its impact on the worldwide economy and its emphasis on the assessments and information of dependable establishment, which can direct the figure. Later this article center around relieving the effect on the more terrible hit part by the epidemic, in particular Tourism Sector. Inside this, the article presumes that there will be an unsymmetrical effect of Coronavirus on all areas, keeping in see every nation's economic structure and assets.

**KEYWORDS:** COVID-19, Economic Impact, WHO, Tourism, Lay-off.

### INTRODUCTION:

They broke out of the COVID-19 epidemic globally, dismantling the world's administrative, cultural, industrial, ethical, and monetary formations. The United States, Britain, France,

China, Germany, Japan, Italy, and another top-most realm administrations are on the terminus of breakdown.

During the epidemic, numerous countries in the world possess blockade measures to "level out" the infection curve. These blockades mean restricting millions of citizens at home, closing businesses, and stopping almost all economic activities. According to the International Monetary Fund (IMF) forecast, the global economy will shrink by more than 3% by 2020, the most significant slowdown since the Great Depression in the 1930s.

The impact not only stagnated the global economy but also counted down the development of some countries. Although India's infection rate appears not to be as eminent as in other countries, the preventive measures taken have hit the major industries in India, including finance, real estate, and professional services, with an estimated 17.3% loss.

Although infections continued to increase during this period, Indians are now restricted to their homes to restrain the virus's expanse. The declaration of the barricade (lock-downs) was not all bare cruising, it caused far and wide frenzy, particularly in the lower classes, including ranchers and transient specialists, who were caught in destitute spots in removed homes, had no work for the time being, and had no transportation. Other than how the administration had reported an alleviation bundle of 1.7 trillion rupees, unmistakably an enormous aspect of the nation's populace would, at present, need to put forth attempts professionally. Further help from national authorities and NGOs is relied upon to grow the extent of help. This remembers the dissemination of free everyday nourishment for specific regions.

Although research and economic experts have significantly reduced GDP rates in the foreseeable future, it is estimated that the country may rebound quickly because of the structure of organized and unorganized markets, the latter

being mainly dominant. In late March, the loss of the organized sector was evaluated at 9 trillion rupees, which is assumed to increase with the blockade's prolongation. Not surprisingly, the industries most affected include services and manufacturing, mainly tourism, financial services, mining, and construction, with a decline rate pertinent 23% between April and June 2020.

Pandemics bring uncertainty and impact to all aspects of global business. Although India is ahead of most countries in adopting applicable homework measures, people still expect work and income deficits and price instability. Segments like the retail industry are expected to drop sharply by 3% to 23%, on market reliance. Since most large enterprises in various departments cannot maintain their livelihoods, the government issued a new industrial operation standard in mid-April, even though the lock-in period beget to expand till May 3, 2020.

The most significant confusion comes from the retail of necessities, which has caused significant interference to e-commerce participants who provide delivery services. With the initial cessation of services from companies such as Amazon India, Flipkart, Big Basket, and other online retailers, local repositories cross-wise the nation has played an essential role in providing daily necessities. Within a few weeks of lock-in, this balance produces significantly enhanced, and more people can purchase the items they need. This has boosted the country's already thriving online market, especially in digital payments, where new adopters and proprietary technology users have proliferated.

#### **IMPACT ON INDIAN ECONOMY:**

The impact of Coronavirus (epidemic) spreading crosswise the nation in 2019-20 is hugely detrimental. In 2021 and other evaluation agencies, World Bank reported the most moderate terms in three decades since India's commercial liberalization in the early 1990s.

Nevertheless, after the financial package's announcement in mid-May, forecast fell further negatively, showing a slowdown in India's GDP. In a period, unemployment surged from 6.7% on March 15 to 26% on April 19. An estimate of 14 crore people lose their employment during the lockdown, and a revenue reduction has been reported beyond the country in more massive than 45% families as contrasted to previous year

Coronavirus is affecting the world in more ways than one. We have been discussing that the global administration is previously paying the price; according to one estimate, the Coronavirus could shave 0.5% of global growth. It hit china's export and disrupted the global supply chain. India, too is feeling the impact now; China is the biggest trading partner of India, around 14 % of India's import of Chinese, several Indian companies depend on China for their supplies. So let us take a look at which industries will be the worst hit by this pandemic.

#### **ADVERSELY AFFECTED SECTORS:**

1. **Tourism Sector** - In 2019 more than ten million foreign travelers visited India out of these; more than 3% were Chinese. Governments encompassing the world have banned flights to China, including India, which means two-thirds of International flights from china are now banned. India's tourism industry will feel the pinch. The aviation sector will feel a ripple effect as per the report; the temporary suspension to china and hong kong will dent the revenues of Airlines, they could lose around 55 to 72 lacs with every canceled flight.
2. **Chemical Industry** - Chemical factories in China have been closed. Therefore, shipping/logistics will be restricted. It occurred to discovered that twenty percent of production was affected by the interruption of raw matter accumulation, being the denim's

principal indigo supplier. India's business may be affected, so people need to ensure supply. However, this is an opportunity. The US and the European Union will try to diversify their markets. Some businesses can be transferred to India, which can also be seen as an advantage.

3. **Shipping Industry** - The outpouring of COVID-19 has influenced the business of freight service providers. According to sources, in the dry bulk trade, each ship's daily price reduction exceeds 75-80%.
4. **Bollywood** - the Indian film industry is bracing for losses too. In recent years, many Bollywood movies have been released in a theatre in China; they've been among the highest-grossing films, but now China has closed nearly 70,000 theatres, bound to impact film revenues then.
5. **Electronic Sector** - Companies making automated assets are suffering too; china supplies around 50% to 60% of India's electronic demands, several companies depend on China for their parts, and the shutdown has disrupted their supply.
6. **Auto Sector** - It will also struggle, impact on Indian companies will vary and depends on the business scope with China. China's business will undoubtedly be affected. However, the current inventory level seems to be sufficient to meet the needs of the Indian industry. If China continues to stop production, the contraction of the Indian automobile manufacturing industry is anticipated to grasp 8-10% by 2020; vehicle makers import natural materials and components from china according to one estimate, vehicle production in India could also shrink, when already the outbreak had an impact on this year's Auto export.

7. **Agriculture** - The pandemic has tested the resilience of the agricultural sector. The plunge in global hotel and restaurant demand has reduced agricultural product prices by 20%. A series of protective measures adopted by countries worldwide to curb exponential growth. This includes alienating society, shunning nonessential journey, and banning congregations. When connected with speculated virus carriers, recommendations for self-quarantine may affect the abundance of accessible controllers and distribution personnel that are essential to ensure product verification and transportation. This will have a remarkable influence on perishable commodities such as chicken and vegetables. Besides, the market has taken a further step by closing on-site trading, which has swayed commodity trading's ability. The Chicago Mercantile Exchange is a recent example "Buying food" makes the shortage beyond supermarket shelves more complicated. The American Veterinary Medical Association (AVMA) is concerned about the low level of animal drugs from many large drug suppliers.

8. **Pharma Industry** - the Drugmakers will also feel the pain. India is the world's largest exporter of generic drugs, but Indian manufacturers depend on china for 70% of their natural materials; moreover, this includes essential constituents for antimicrobials, diabetes medications, painkillers, and HIV's Antiretrovirals. The abandonment in accumulation could traverse to curtailments, and the values of primary medications could also shoot up.

For instance, the cost of the essential constituent for paracetamol has increased in Feb 2020.

The coronavirus lockdown in India may dent the country's economic growth majorly in the current year. The world bank expects India's

economic growth will be ranging between 1.5% to 2.8% in 2021, relying on the rigor spread of COVID-19 and the continuation of the continuous nationwide lockdown.

This will make India report its most detrimental growth production since liberalization. The global financial institutions had earlier projected the growth to be 6.1% for 2020-21, the severance to financial movement generated by the crisis occurs subsequent mediocre growth movement in the previous years. In the economic update of South Asia, the bank wants migrant workers, and stipulations of the slum area would make it challenging to adopt standard distancing measures to arrest the extent of disease.

Before the crisis struck, the economist was already predicting a recovery in the economy, and World Bank also cautioned if the current lockdown worked for a prolonged economic situation may worsen for India's economy. Earlier the World Bank had approved 1 billion dollar contingency funding for India to seize the break.

As of May 20, 2020, the world is staring at close to 5 million confirmed COVID-19 cases; people worldwide have been under some form of lockdown or another, the crisis possesses an immediate and possibly long-lasting influence on the global marketplace. Looking ahead, here is what the world might have to reconcile with

Stating the World Economic Forum's report compiled by the World Economic Forum's Global Risk Advisory Board, the COVID-19 disaster is expected to trigger a long-lasting global recession. Risk managers wren surveyed, and the results show startling observations, a moiety of the risk managers expect bankruptcies and industry consolidation, they also predict failure at industry recovery and a high level of unemployment among the youth.

Let us first lookout at the fall out of the epidemic in numbers, 500 million personages

are at the risk of poverty, a drop of 3% is anticipated in world output, global trade is presumed to fall by 13 to 32%, 80% or 1.6 billion students worldwide were without education in March 2020, 34% of adults had disadvantageous repercussions on their mental well-being throughout this lockdown. The pandemic is likely to result in a prolonged recession, high levels of structural unemployment, tighter restrictions on cross border movement of people and goods, the wearing of fiscal positions in significant economies, protected disruption of the global supply chains, a collapse of emerging or originating administrations, cyber scam due to a maintained transformation in operating guides.

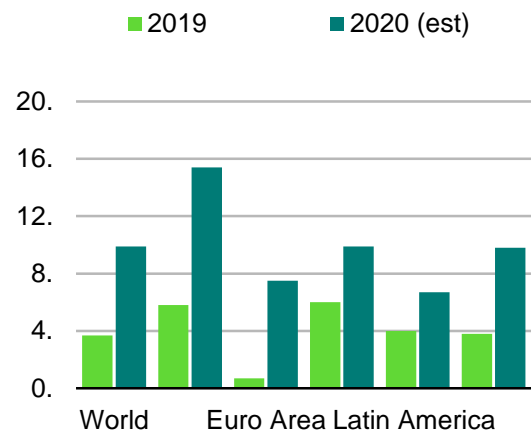
The Managing Director of the World Economic Forum, Saadia Zahidi, has said, " the disaster has ravaged careers and livelihoods. It has set off a monetary emergency with expansive ramifications and uncovered the deficiencies of the past. We currently have a unique chance to utilize this emergency to do things any other way and work back better economies that are more maintainable tough and comprehensive."

**IMPACT ON GLOBAL ECONOMY:**

In 2019, there was tension about the effect of a US-China Trade war, the US Presidential decisions, and Brexit on the world economy. Because of these, directed worldwide development of 3.4% was anticipated by the IMF. However, COVID-19, the sickness brought about by SARS-CoV-2, a novel strain of COVID from the SARS Species, changed the viewpoint suddenly. Because of dread and vulnerability, and to level-headed evaluation that organizations' benefit is probably going to be lower because of the effect of COVID-19, worldwide financial exchanges eradicated about US\$6 trillion in riches in the now week from 24th to February 28. The S&P 500 list lost over \$5 trillion in esteem in the very week in the US while the S&P 500's most prom-

inent ten organizations encountered a consolidated loss of over \$1.4 trillion, albeit a portion of these were recouped in the resulting week. A portion of the misfortune in esteem was because of sound evaluation by speculators that organizations' benefit would decrease due to the effect of the COVID-19.

The International Monetary Fund (IMF) assessed that administration spending and income measures to support financial action received through mid-April 2020 added up to \$3.3 trillion and that advances, value infusions, and ensures added up to an extra \$4.5 trillion. Subsequently, the IMF gauges that the expansion in obtaining by governments internationally will ascend from 3.7% of worldwide total national output (GDP) in 2019 to 9.9% in 2020, as referenced in Figure 1



Source: Fiscal Monitor, International Monetary Fund, April 14, 2020

Among created economies, the monetary equalization to GDP proportion is extended to ascend from 3.0% in 2019 to 10.7% in 2020; the proportion for the United States is extended to ascend from 5.8% to 15.7%. The financial equalization to GDP proportion is extended to ascend from 4.8% to 9.1%

As indicated by the IMF, France, Germany, Italy, Japan, and the United Kingdom have each reported available part to uphold measures adding up to over 10% of their yearly GDP.

There have been regular withdrawal and decrease by - 1% in the rising nations and creating economies, yet there has been a desire for development rate by - 2.2% if China has been barred from this nation's pool.

#### **ANALYSIS BY ASIAN DEVELOPMENT BANK:**

As on May 15, 2020, a report put together by the Asian Development Bank (ADB) detailed that the worldwide economy is relied upon to endure misfortunes added up to \$5.8 to \$8.8 trillion due to the COVID-19 pandemic, and such sum is comparable to 6.4% to 9.7% of the Global GDP.

In its most recent appraisal of the expected economic effect of COVID-19, ADB expressed that the GDP of South Asia will likewise drop by 3.9-6%, which chiefly mirrors the severe limitations forced by the nations like Bangladesh, India, and Pakistan.

According to the report delivered on April 3, by ADB named 2020 Asian Development Outlook, the expense of COVID-19 has been assessed, extending between \$2 trillion - \$4.1 trillion,.

Before March 6, it assessed that the worldwide monetary effect was between the US \$ 77 billion and US \$ 347 billion (0.1% to 0.4% of worldwide GDP).

ADB said its new investigation predicts that the worldwide effect will contact the US \$ 5.8-8.8 trillion, barring the effect of strategy measures.

ADB's new gauge is more than twofold the world's assessed worldwide GDP decrease, which is 2-4 times and is likewise higher than the International Monetary Fund's World Economic Outlook gauge of a 6.3% decrease worldwide GDP.

Fast reaction to the effects of this pandemic by the Governments over the globe, which incorporates measures, for example, embracing financial and money-related facilitating, expanding clinical costs and straightforwardly

supporting measures to make up for money and loss of salary. As per the new report, these proceeded with the governments' endeavors to lessen the monetary effect of COVID-19 by 30% to 40%.

The Asian Development Bank included: "This can lessen the worldwide financial misfortunes brought about by the pandemic to between 4.1 trillion and 5.4 trillion US dollars."

ADB's examination utilizes an overall harmony model that can be considered a worldwide exchange investigation venture, covering 96 economies influenced by the pestilence and including more than 4 million COVID-19 cases.

Notwithstanding the effect on the travel industry, utilization, speculation, and exchange creation linkages engaged with the ADO 2020 evaluations, the new report additionally incorporates transmission channels, for example, impacts on liquidity, expanded exchange costs for the travel industry and different ventures; Supply-side disturbances that unfavorably influence speculation; and government strategy reactions to relieve the worldwide financial effect of COVID-19.

ADB Chief Economist Yasuyuki Sawada said this new examination gives a far-reaching prologue to the substantial likely monetary effect of COVID-19.

It likewise stresses the significant job that strategy intercessions can play in lessening monetary misfortunes. These discoveries can give an appropriate approach to the administration to plan and execute measures to contain and stop the scourge and lessen its effect on the economy and individuals.

ADB expressed that approach producers should cooperate to contain the pandemic-the more it is contained rapidly, the more troublesome and more extended the recuperation will be.

#### 4. HOW HAVE COMPANIES COPEd?

As per an appraisal by the World Economic Forum (WEF), supporting SMEs and more prominent organizations is significant for keeping up business and budgetary steadiness. In India, Finance Minister Nirmala Sitharaman has declared a few subtleties of the Atmanirbhar Bharat Abhiyan bundle, to give alleviation to Medium, Small, and Micro Enterprises (MSMEs) as an expansion in credit ensures. Many progressed economies on the planet have turned out help bundles. While India’s financial upgrade bundle is 10% of its GDP, Japan’s is 21.1 percent, trailed by the US (13 percent), Sweden (12 percent), Germany (10.7 percent), France (9.3 percent), Spain (7.3 percent) and Italy (5.7 percent).

Nonetheless, the WEF notes, “ there is the worry that the size of bundles may demonstrate inadequate for the term of the emergency; that payment might be slower than is required; that not all organizations in need would be focused on; and that such projects might be excessively dependent on obligation financing.” In Asia, nations including India, China, Indonesia, Japan, Singapore, and South Korea represent around 85 percent of all the COVID-19 cases on the mainland.

To minimize the influence of pandemic on the Indian economy, there existed scant measures exercised by our authorities to provide relief to their citizens. On March 24, 2020, Union Finance & Corporate Affairs Minister announced relief measures in areas related to Banking Sector, Income Tax, Corporate Sector, etc, in a way to boost the economy. Some of these relief measures include an extension of the deadline for filing Income Tax Returns, an extension of the deadline for linking Aadhar-PAN, reduction of Interest Rate for Postponed installments of allowance tax, relations provided to the debit cardholder with a waiver of minimum balance fee, reduction in bank charges for trade transactions, moratorium period for EMIs, etc.

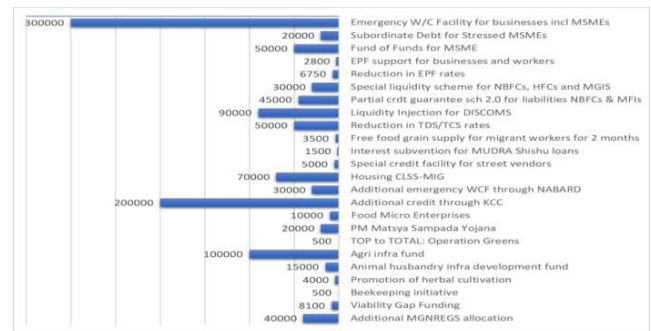


Figure 2- Atmanirbhar Bharat Package breakup

On March 27, 2020, the government declared a relief pack amounting Rs.1.7 crore to provide relief to the poor and those who hit hardest by the lockdown. Such package includes Free LPG for the next three months to the beneficiary of Ujjwala, a hike of Rs.2000 to each worker under MNREGA, Medical Cover Insurance of Rs.50 Lakhs to Health Workers, Rs.1000 shall be provided to the section of people including poor Senior Citizens, flawed, disabled beings and poor widows.

#### 5. MITIGATE THE IMPRESSION ON TOURISM:

India could be a large marketplace for voyage and tourism. It allows various holdings of recess tourism outcomes - voyages, adventure, pharmaceutical, wellness, carnivals, MICE, ecotourism, flick, agricultural and religious tourism. India has been recognized as a destination for spiritual tourism for domestic and international tourists. The tourism sector’s total contribution is envisioned to extend from Rs 15,24,000 crore (US\$ 234.03 billion) in 2017 to Rs 32,05,000 crore (US\$ 492.21 billion) in 2028 towards India’s GDP. The total earnings from the arena in India stood at US\$ 28.6 billion in 2018 and are targeted to succeed in US\$ 50 billion by 2022.

The comprehensive outbreak has affected the planet to cessation, and tourism has endured the most detrimental effect of all major economic sectors.



National Economies are laid low with travel restrictions imposed internationally, regionally, and locally including the tourism industry, i.e., international and domestic travel, day trips, and air transportation, cruise ships, transport, accommodation, cafes, and restaurants, conferences, festivities, conferences, or recreations events.

International air travel has also bogged down rapidly as a response to this crisis. Numerous nations have imposed travel bans, closed borders or imposed isolation periods, and international while domestic tourism has declined sharply within some weeks. Some countries are scrambling to send passengers home.

The disorder's hardest-hit sector is the Tourism Sector, with impacts on both travel supply and demand. This represents one more downside risk within the connection of a more vulnerable society, geopolitical, cultural, and commerce tensions and additional production amid extreme outbound travel markets.

Considering the developing idea of the circumstance, it would be significantly ahead of schedule to assess the absolute effect of the COVID-19 on worldwide the travel industry. For its underlying evaluation, UNWTO takes the SARS situation of 2003 as a benchmark, figuring inside the size and elements of overall travel and current disturbances, the geographic spread of COVID-19, and its possible monetary effect.

- Starting today, UNWTO gauges that in 2020 worldwide global vacationer appearances could decrease between 20-30%, down from an expected development of 3% to 4% conjecture toward the beginning of January 2020.
- This could convert into lost US\$ 30 to 50 billion in spending by global guests (worldwide the travel industry receipts).

- Evaluations for other world districts are, as of now, an untimely insight of the quickly advancing circumstance.

UNWTO underscores that any gauge must be treated with alert gratitude to the unpredictable and uncertain development of the episode, creating additional modifications.

### **IMPACT OF COVID-19 ON TOURISM SECTOR IN INDIA:**

The travel industry was already hit by the economic slowdown in 2019, including macro challenges and geopolitical issues, and then came the COVID-19 epidemic that did not take much time to shut the whole world down.

Most people crosswise the nation fear for their jobs given the present crisis due to the pandemic. The economic meltdown, unemployment, and liquidity crunch contain an adverse influence on almost every sector, but the primary affected sector seems to be the Travel and Tourism Industry.

Likewise, ere the 21 days, the nationwide lockdown was announced, one sector that had already been feeling the warmth of the worldwide coronavirus pandemic, which is the travel industry. It began with international travel cancellations and was made worse by the grounding of intercontinental aviation by many countries.

The industry says that given the sharp drop in booking spiraling cancellations and the latest constraints on International and domestic locomote, either air, rail, or bus, the arena is at a virtual standstill. Industry Association calls that the present situation puts in danger an outsized percentage of India's total tourism endeavor, estimated at over 28 billion dollars. Domestic tourism is estimated to be Rs. 2 lakh is additionally at the edge of risk.

The CEO of various airlines has already announced that they will take a salary cut, and this salary cut signified enlarged to the whole

staff in some airlines. Now companies more directly involved within this sector are taking similar steps; online travel firm Make My Trip top executives Deep Karla and Rajesh Maga have decided to draw Zero salaries from April 2020.

The accommodation business is not being spared either, the whole value chain from hotels to tour operators to travel agents are reeling from the restrictions imposed by the center and nation authorities insight of the infection outbreak booking for social and commercial vents like wedding, seminars, and conference have also dried up in numerous luxury hotels have resorted to slashing room rates and adopting severe cut cutting measures to make and survive the pandemic.

JLL India's report shows that the Indian hotel industry's occupancy measure dropped sharply within the first fraction of 2020 because of the COVID-19 epidemic affecting diverse divisions of the business.

The outbreak started in 2019, and also the center's containment measures have directed toward a significant and significant reduction in domestic and foreign travel within the field of tourism and enterprise travelers.

"In March 2020's 3rd week, across India, the hotel industry's occupancy measure fell by quite 65% compared with the identical stage immediate year. The report states that as global travel restrictions intensify further, the second, third division of 2020 may additionally be affected similarly.

The report estimates that if the circumstances do not develop by the edge of June 2020, a minimum of 30% of the hotel industry revenue will be affected. More innumerable than 60% of standardized hotels in India have been closed, while others are related to the occupancy of single units, and also the recovery is going to be gradual.

Industry estimates indicate that the annual revenue of brands and organized hotels is Rs 380 crore in India. (US \$ 5 billion).

"The FF & E reserve must be used with caution. Operators will support hotel owners over ever."

"As the industry goes through a period of turmoil in a pandemic, the expansion and development of Indian hotels may additionally be effected within the subsequent two years. Ramesh Nair, CEO and national head of Jones Lang LaSalle India, said that any dry powder available today will focus more on buying operational assets instead of building new assets.

Although 2019 witnessed the shift of concentration to the mid-range and affordable branded hotel sector, more well-known developers (such as owner-operators like Prestige Group, Chalet Hotels, and Lemon Tree Hotel) have activated their existing Land reserves and announced expansion plans in key corporate markets in India.

The report shows that office buildings' strong performance is the key to the strong performance of the hotel business in the top 7 commercial cities in India. Tourism has always been a crucial contribution to job creation within the country and a large root of international interchange income. The department none only hires workers in cities and provides livelihoods for people of all social classes in rural areas.

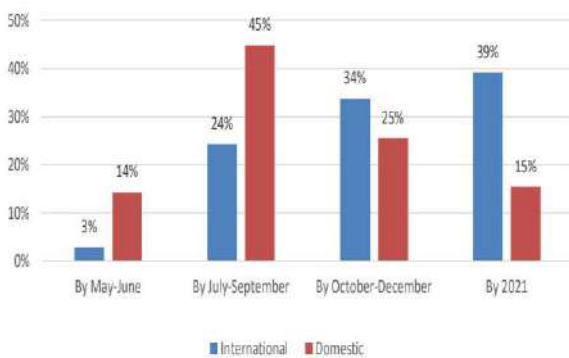
The Confederation of Indian Industry expects that the slowdown that's hurting the sector will last till October this year and cashflows will begin normalizing only by the end of the year; therefore, the CII has suggested a range of measures that may help the sector flow above the pressure, which incorporates.

1. Zero-interest loans
2. Three to a six-month extension to the halt already announced
3. Relief from paying statutory dues like GST

**IMPACT OF CORONAVIRUS ON INTERNATIONAL TOURISM:**

From Jan through March 2020, there have existed travel restrictions imposed by worldwide destinations.

As by April 20, travel restriction has been imposed by worldwide destination 100%, and therefore the borders have been partially or closed for the tourists of 97 destinations, which amounts 45%, international flights have been totally and partially suspended with regards to 65 destinations e., 30% and the rest 18%, which means 39 destinations globally are banning the passenger's entry from specific countries by closing borders.



The graph above depicts the Recover in International while in domestic demand for tourism,

As the abundance of COVID-19 cases has surged and spread globally, by the March end, travel restrictions had spread from the Wuhan area's epicenter to most countries. Using national state data, it will be assessed that above 90% of the globe's population are countries with higher international travel restrictions, many of which even have a specific period of stipulations on national mobility, including inadequate air journey and stay inside rules.

This unprecedented response has caused many industrialized countries to close borders to all foreigners, and almost all additional nations have imposed at least some travel restrictions, including travel bans from certain

countries, entry quarantine, and health certification requirements.

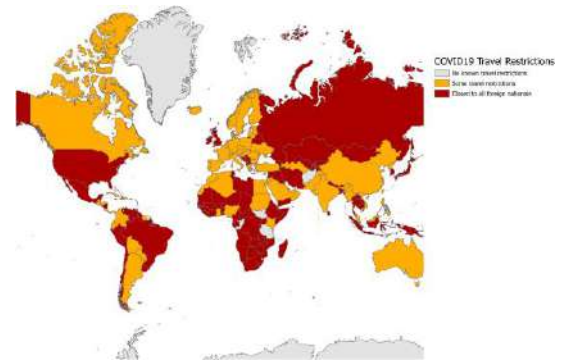


Figure 3. COVID-19 related global travel restrictions (as of March 31).

**Data sources: Authors compiled from IATA (2020), International SOS Security Services (2020), and country travel advisory/ restriction websites on March:**

With the rapid emergence of COVID-19, scientific understanding and NPI response developed in about eight weeks, tourism organizations strive to grasp what is happening: the uncertainties and changes of pandemics and policy responses helped in understanding the repercussions on tourism as represented by UNWTO, and significant revisions were made between the beginning and March's end.

The World Tourism Organisation's handout on March 6, 2020, estimated that the epidemic would diminish the number of international tourists by 1-3% (compared to 2019), instead of the expected 3-4% increase. Three weeks following, on March 26, a handout updated this assessment result to cut back international inbound tourists by 20-30%. These significant revisions illustrate these current difficulties in forecasting. Therefore, all estimates of the sector's ultimate consequences need to be extra cautious and can simply be utilized as a reference.

Due to journey limitations, including blockades, the global tourism industry has dramatically slowed, and therefore the abundance of international flights has fallen by longer than half. As the quantity of instances increases, the travel ban has put more enhanced airlines in trouble. Since many airlines have embraced distinct arrangement strategies to sustain the distance between passengers, passenger numbers decline is also even greater.

For instance, Air New Zealand's seat restrictions meet the government's requirements for social evacuation, which suggests that despite its being "full," its flying capacity is more concise than 50% (Air New Zealand, 2020).

#### **CONCLUSION:**

The coronavirus pandemic may damage the Indian economy. The GDP may decline further, mostly if India cannot survive the global economic recession. It is believed that India is more vulnerable because India's administration is previously in trouble and has experienced a severe slowdown that lasted for several quarters, well before the disorder of COVID-19. The Indian Prime Minister has talked about establishing an economic task force to formulate policy measures to administer with the economic challenges posed by COVID-19 and the stability of the Indian economy. However, specific plans must be retained to support the economy and its recovery.

However, there are chances that this Virus outbreak may be a benefit in cover for our economy to a limited extent, as the CEOs of Multinationals Enterprises in India believed that the aforementioned is the opportunity for our nation to capture 40% of their competitor's market share by manufacturing and production of indigenous products, by promoting Local Enterprises and by promoting Make in India concept, because by that point International economies are at the brink of facing a high risk of being over-dependent on one market.

As infection's extent in society and India continues to develop, we have forgotten all the ideas about economic recovery for the moment, but we have worked together to solve the results of COVID-19.

Nevertheless, it is quite strenuous to evaluate the overall financial repercussions of the Corona Virus globally due to the evolving and transforming radiation of the virus, and the skies, which made it challenging to estimate include but not limited to. How long will the crisis last? What effects crisis have at the federal and worldwide levels when economic effects will occur at their peak, etc.

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**EFFECT OF IMPLEMENTATION OF LOCKDOWN ON JUNK FOODS CONSUMPTION PATTERN IN INDIA AMID TWENTY TWENTY'S PANDEMIC: ANALYSIS OF POPULACE PERCEPTION AND PRACTICE BY DESCRIPTIVE ANALYSIS AND WITH GIS CHOROPLETH MAPPING**

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SHUATS

**INTRODUCTION:**

Junk foodstuffs supply bare calories, provides modest or none of the minerals, protein or vitamins required for a wholesome diet.[3] several foodstuffs, for instance hamburgers, pizza & tacos, can be regarded as either nutritious or junk food, depending on ingredients used & method of preparation. The more highly processed items usually fall under the junk food category,[2,3] including breakfast cereals that are mostly sugar or high fructose corn syrup and white flour or milled corn. In this time of **COVID 19** every one should not consume junk food as junk food effect immune system and health of every age group and weaker immune system means more chance of getting COVID- 19 disease.

We do our survey by sending link and via mail. WE DO OUR SURVEY LIKE THIS ON GOOGLE FORM because of lockdown we were unable to do our research by going individual's house and ask question to collect data. Lockdown not allows us to do so therefore we use Google form to create link add question in then related to our topic which will help to do our survey and send that link to our friends classmates and request to fill our survey we ask that question which are simple and everyone understands that as junk food are unhealthy for all age groups we find out topic interesting in and use full for our survey the, lockdown affected everyone life change their eating habit. we asked 20 question in which 8 are demographic and 12 are related our topic.

**SURVEY MRTHOLOGY:**

Surveys are a part of applied statistics used for research purpose to understand the opinion, perception, knowledge and practices of human beings, under survey methodology sampling of individual units from a population are studies the & associated techniques of survey are data collection, for instance construction of questionnaire and processes to improve the accuracy & number of responses in surveys.

Researchers accomplish statistical surveys with a vision to draw statistical inferences about the populace being surveyed, and such inferences depend sturdily on the questions used in the survey. (1) Polls dealt with opinion of populace, surveys based on public-health, market-research, government and censuses are all paradigms of quantitative research that utilize methodology of survey to respond questions about a populace. Though opinion polls do not contain a "sample", they do contain other features of survey methodology, for instance interviews, questionnaires, & non-response follow-up techniques. Surveys provide important information for all kinds of public-information and research fields, e.g., marketing research, psychology, health-care provision and sociology. (2)

**RESULT:**

**GENDER:**

In this question we give 4 options i) male ii) female iii) transgender iv) prefer not to revel. This question is attempted by 100

peoples in which 42% were female, 57% were male and 1 % people choose option prefer not to reveal. Question form asked this question because by this question help to know that those who are filling our survey are male, female or transgender. This will help us in doing our research and making survey result. This result will help us to compare how much are female and how much are male in our survey and it will also help us to conclude further result.

#### **STATE BELONGS TO:**

THIS question attempted by 100 peoples in which 63% choose Bihar 18% choose UP 5% choose Chhattisgarh 3% people choose MP 1% choose Rajasthan 2% choose Jharkhand and 8% people choose other option in which 3% choose Delhi 1% choose Uttrakhand 3% choose west Bengal 1% Odisha. Question form asked this question because it help in knowing that from where they belong who fill our survey this question will help to find from where who belong and help in comparing their answers in making result of our survey and our research also. By this question form get to know that which state people consume which junk food and what is the effect of lockdown on their junk food consumption habit.

#### **HIGHEST LEVEL OF EDUCATION COMPLETED:**

This question is attempted by 100 people in which 51% choose Undergraduate 40% choose secondary school 7% choose postgraduate 2% people choose other option in which they choose 1% people graduate and 1% people diploma in mechanical.

Question form asked this question because this question will help in determining how much which degree has in hundred people. And majority who fill our survey have

which degree. Majority of people in our survey have high school degree. By this question help in knowing that which degree peoples are more concerned about junk food and their health what they like before lockdown and during lockdown.

#### **“MARITAL STATUS”:**

This question was attended by 100 people in which all 100 people where single. Question form asked these demographic questions in our survey because it will help in knowing that “What is their marital status? This will help us what single and married people like in junk food and how much they are concerned about their health. And during this lockdown what change they bring in their habit.

#### **HOUSEHOLD INCOME:**

This question is given with 4 options less than that, 100000 or less than that, 200000 or less than that, more than 200000 .19.6 % people choose 5000 or less than that, 46.4% people choose 100000 or less than that, 14.4% people choose 200000 or less than that, 19.6% people choose more than 200000, Question form ask these question to check that how many gross income of members. Household income is an important for measure economic indicators

#### **CURRENT EMPLOYMENT STATUS:**

This question is given with 4 options Student, self employed, Employed full time, Not employed and seeking for opportunities 95% people are student and 5 % people are Not employed and seeking for opportunities We ask this question to check that how much people employed or unemployed for checking this will help us in determining that which category people consumption activity affected most by lockdown working or student.



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**Number of family members:**

This question is given with 2 options 4 or less than that and 8 or less than that, 41 people has 4 or less than that family member and 44 People have 8 or less than that family members and rest choose other option in which 8, choose 5 , 1 choose 6 , 1% 10 , 1 % 15 and 1% 12 respectively.

**“Variety of junk food products were element of your ration usually”:**

This question is given with 4 options Maggie, chips, sugary beverages, Burger, pizza 62.2 % people choose Maggie, 17.3% people choose Burger pizza 10.2% people choose chips and 6.1 % people choose sugary beverages. 1% chooses no junk food, 2 % spicy momos and 1 % chocolate Question form ask this question to check that how many people consume different types of junk food majority of people like Maggie in our survey. This response indicates that magi is popular among majority and they consume usually.

**Junk food products usage frequency before pandemic seven days:**

This question is given with 4 options More than 5 times, more than 10 time, Between 10 to 15 times , more than 15 times 68 people choose more than 5 times, 16 people choose more than 10 times,5 choose more between 10 to 15 times, and 4 people choose more than 15 times few people choose other options in which 5 choose once a month or less , choose mostly once and 1% choose less than 5 times Question form ask this question to check that how much junk food consume before lockdown on weekly basis majority people choose more than 5 times means in 100 people most consume more than 5 times junk food in a week.

**Usage of instant (junk) foodstuffs throughout pandemic weekly:**

This question is given with four options (i) less than 5 times (ii) less than 10 times (iii) between 10 to 15 times and (iv) not consume.

55.6 %people choose less than 5 time and 16.2% people choose less than 10 times and 8.1% people choose between 10 to 15 times and 20. 2% people choose not consume.

Question form ask this question to check that how much junk food people consume on weekly basis and majority people eat junk food less than 5 times in a weekend few of them eat more than5 times in a week they can consume 15 times junk food on weekly basis and most do not consume junk food which is good thing as junk food is not good for our health.

**Amplified consumption of instant junk foodstuffs (for instance noodles, chips etc.) was:**

This question is having four options (i) before lockdown (ii) during lockdown (iii) never (iv) at both situation.

50.5% people choose before lockdown and 21.2% people choose during lockdown and 6.1% people choose never and 22.2% people choose at both situation.

Question form ask this question to know that when most of the people eat instant junk foods. Most of the people eat instant food before lockdown as they are easily available in the market at that time, few people consume them during lockdown, few people consume instant junk food at both the situation may be they like junk foods very much, very few people are there who never eat instant food may be they are health conscious that’s why they don’t eat.

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**Is frequency of shopping for food tormented by implementation of lockdown?**

This question is having two options (i) yes and (ii) no.

67.3% people choose yes and 32.7% people choose no.

Question form ask this question because many of the things get affected during lockdown so it will help to know that did their habit of buying junk foods affected in lockdown and majority of the people reply yes as their habit of buying junk foods gets affected, few people are there whose habit did not get affected in this lockdown also.

**Spent more cash on the acquisition of junk food:**

This question is having two option (i) before lockdown and (ii) during lockdown.

77.8% people choose before lockdown and 22.22% people choose during lockdown.

It is important to know that when people spend more money on buying junk food during lockdown before lockdown majority of the people spend more money on buying junk food before lockdown very few are there who spend money on buying junk food during lockdown. By this question it will help to know how lockdown affect their purchasing habit and it was revealed that most people junk food purchasing habit affected by lockdown.

**When food was taken as substitute to break-fast:**

This question is having three options (i) before lockdown (ii) during lockdown (iii) at both situation.

This question have 97 responses 53.6% people choose before lockdown, 14.4% people choose during lockdown and 32% people to use at both the situation.

Most of the people take junk food as an alternative to breakfast as students .Everybody

do the same sometimes .It is important to know when people take junk food as an alternative to breakfast majority of the people take junk food as an alternative to breakfast before lockdown and some are taking during lockdown very few people are there who take junk food at both the situation or there regularly eat junk food as their breakfast or as alternative. As junk food become part day to day life. All age group are consuming it. Some are consuming because they have no choice and some are consuming because like to eat junk food.

**What type of instant (junk) food is quickly available in your vicinity before and through implementation of lockdown?**

We give here four option in which 51 people choose burger before lockdown and magi during lockdown and 22 people choose pizza before lockdown and chips during lockdown 11 people choose sugary beverages before and chocolate during lockdown and rest choose other option in. we asked this because we want to know that what effect of lockdown is on availability of junk food in different areas

**Preferred junk foods for munching before implementation of lockdown:**

We ask this question to know about which junk is most likely to eat by the people before lockdown the lock down and 41 people select Maggie to eat. 26 people choose pizza 8 people choose chocolate 3 people choose sugary beverages 18 people choose burger and rest choose other option. By asking this question we can compare the result with with junk food they prefer during lockdown as in this lockdown may people concern about their health and it affect their consumption? It was revealed that most people prefer magi before lockdown.

**Preferred junk food you to munch more during lockdown:**

This question gave four options in which 43 people choose homemade junk food 31 choose Maggie 16 choose chips 5 people choose sandwich and rest choose other option

Here the most choose homemade junk food which shows that how much they are concern about their health in this lockdown majority prefer homemade junk food. And the affect of lockdown on their choice.

**Effect on Sale of junk food by the implementation of lockdown:**

This question gave three options in which 65 people choose yes 18 choose has no ides, and 16 choose NO. Here the selling of junk food is affected due to the close shop and danger of spreading of diseased. And even in the lockdown situation FACTORY are close that the making of junk food is not possible. Question form ask this question so that it can be found out that the people are aware about the outside situation during the lock down, and most people are aware about the situation.

**Interest in ordering favorite junk food online provided seller ensured safety practices during implementation of lockdown:**

This question gave three option in which 22 choose 3% , 41 choose 1 percent and 33 choose 5%. It is important to know what people think about online ordering of food during this dangerous time how much they believe on online food safety but it was found that majority are not interested in ordering food online during this time ever safety practices as provides during this lockdown the business of online food also affected.

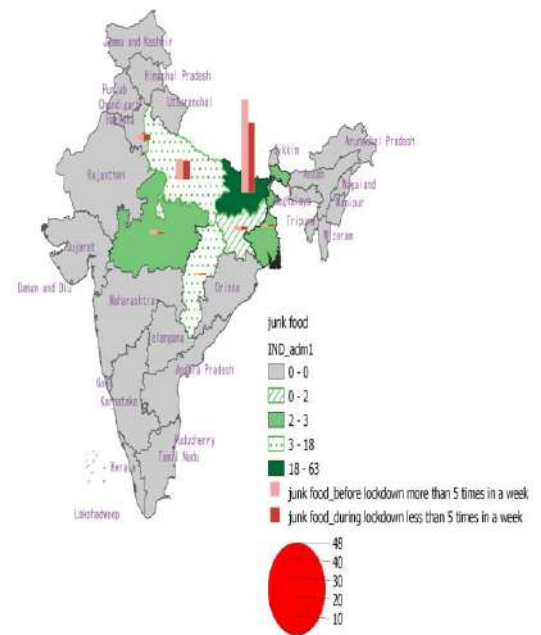


Figure: 1: Choropleth Map: showing home states of respondents and frequency histogram legend for answers to the question “frequency of junk food consumption before and during implementation of lockdown”

**GIS Choropleth mapping with FHL:**

As we can clearly state from choropleth map that majority of respondents belong to Bihar & then U.P. In Bihar where weekly consumption of junk food was more before as compared to during implementation of lockdown. It may be concluded that in the light of socio-demography facts which states that majority of respondents were students living in places other than their homes, during implementation of lockdown they were at their homes, so it can be one reason for the reduction of frequency of consumption of junk foods, with an array of reasons arises due to implementation of lockdown.

## CONCLUSION:

Junk food is unhealthy food that's high in calories from sugar or fat, with very little dietary fiber, protein, vitamins, minerals, or rest necessary nutrients though these kind of foods exciting for tongue and taking it once in blue moon is okay, but taking these too often might lead to health issues like abnormal increase in weight or life style related disorder. (4)(5)(6) the health issues caused by junk foods are principally because of the high sugar, salt and fat content in it. The current survey was conducted among a hundred individuals and the current study conclude that the internment consumption of junk food is not dependent upon gender, age, level of schooling, state and family financial condition. maggi is most liked RTC product among majority before lock down and through implementation of lockdown majority liked handmade food. Lock down has affected and pavedmodification in consumption of junk food and In buying of the ration. By and large populace of all age groups modified their eating habit of junk food during the implementation of lockdown, as home-cooked junk food was preferred. They are attentive of actuality that consumption of junk food can harm them in various ways. They even not preferred to order food online.

## POST-PENDEMIC FUTURE SCOPE OF OUR SURVEY:

Elevated demand for junk food & array of product availability are the major aspects driving the Indian as well as worldwide bazaar of junk food. Chief business groups in the market of junk food have a wide array of products to supply to children, adults, & the geriatric population.

Globally, the junk food market is booming, owing to extensive creative advertisement and branding by leading fast food chains. Junk food are one the sources of

various strategies to gain a foothold in the market and capture market share. Today's fast-paced life and availability of several junk food products are the key factors driving the global junk food market.

Junk food covered whole of the world because these food found in every part of the world and is mostly like by the people of all age group.

We can build strong our industry by preparing selling and marketing nutrition rich indigenous junk food, which most of the populace like because due to lock down populace in general were worried about health so we can also provide health-safety and increase Indian industry.

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## COMPARATIVE CHARACTERISTICS OF THE SIZES OF THE THYROID GLAND AND THE PARAMETERS OF THE PHYSICAL DEVELOPMENT OF CHILDREN 11 AND 12 YEARS OF AGE

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### ABSTRACT

To conduct a comparative characteristic of the size of the thyroid gland and the parameters of physical development of children of 11 and 12 years of age. The study examined the morphometric parameters of the thyroid gland and anthropometric parameters in 11-year-old and 12-year-old boys and girls (n = 80). We tried to establish the average value of the normal volume of the thyroid gland and find out whether there is a relationship between the volume of the organ and the parameters of physical development.

Studies have shown that in boys of 11 and 12 years old included in our group, the growth rate of parameters of physical development and morphometric parameters of the thyroid gland is less than in girls of the same age.

On the basis of the data obtained, it was established that the physical development of 11 and 12-year-old boys, in comparison with girls, tends to lag behind. The prevalence of height and body weight in girls compared with boys is possibly associated with the early onset of their puberty. Anatomical parameters of the thyroid gland (length, width, volume) in boys of 11 and 12 years of age lag behind in comparison with girls of the same age.

**KEYWORDS:** ultrasound examination, thyroid gland, anthropometry measurement, morphometric indicators.

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### INTRODUCTION:

The problem of iodine deficiency diseases is the most important global medical, socio-economic problem of our time. The significance of the problem is due to the dire consequences of iodine deficiency in people of practically all age groups [1]. Iodine is one of the most important microelements for human life, involved in the functioning of the thyroid

gland, providing the formation of hormones (thyroxine and triiodothyronine). Insufficient intake of iodine in the body leads to disruption of thyroxine synthesis. This causes a compensatory diffuse enlargement of the thyroid gland as a result of its hyperfunction, and the so-called goiter with hypothyroidism develops, accompanied by a slowdown in metabolism, stunted growth and mental development of children [2].

Diseases of the thyroid gland (thyroid gland) in endocrine pathology are the second most common, occurring in 8–20% of the adult population of the world. According to the World Health Organization (WHO), more than 200 million people suffer from this pathology, in endemic foci this figure exceeds 50% [3]. Thyroid disorders in infants, children, and adolescents are common and usually treatable endocrine disorders. Thyroid hormones are essential for the normal development and growth of many target tissues, including the brain and skeleton. [4]. So, in iodine-deficient regions, the deterioration of the main indicators of physical development is shown: in particular, an increase in the number of children with disharmonious development. Schoolchildren with endemic goiter have low stature [5].

Numerous factors affect the size of the thyroid gland. Factors such as age, gender, weight, height, body mass index and body surface area were positively associated with thyroid volume. Diets that are deficient in iodine and even smoking cigarettes also affect thyroid volume [6]. An enlarged thyroid gland is called a goiter. Goiter is also known as goiter and thyrogaly. The most common cause of endemic goiter worldwide is iodine deficiency [7]. Analysis of the literature data of recent years indicates that much attention is paid to the problem of physical, sexual and intellectual development of modern children in areas of

iodine deficiency [8]. However, despite many years of struggle with iodine deficiency, the problem of iodine deficiency is still not resolved in many countries of the world, including Uzbekistan. Iodine deficiency diseases are the most common non-infectious pathology, both in Uzbekistan, in particular in the Bukhara region, and throughout the world. The problem of iodine deficiency diseases is the most important global medical, socio-economic problem of our time [9].

The diagnosis of thyroid pathology is currently impossible to imagine without ultrasound, which allows us to assess its volume, structure and location. Thus, the thyroid gland is an operational subsystem, operatively and adaptively reacting, the biological essence of which is the variability of tissues and its adaptation to the conditions of the factors of the external and internal environment that have changed for various reasons [10].

Accurate assessment of thyroid volume in patients of all ages is important for correct diagnosis of goiter and sonographic monitoring of thyroid disease. This is especially important in pediatrics because linear measurements of the developing thyroid gland correlate poorly with age, sex, or body composition variables. Various methods are used to assess the size and volume of the thyroid gland. Sonographic volume and visual examination and palpation are used to evaluate the thyroid gland. Although the size of the thyroid gland can be easily assessed by physical examination, due to the superficial location of the gland, palpation has low sensitivity and specificity for the management and diagnosis of thyroid disease. Therefore, the volume of the thyroid gland measured by sonography is more accurate than the size of the thyroid gland determined on physical examination [11]. Thyroid ultrasound is the most common, extremely useful, safe and

cost-effective way to visualize the thyroid gland and its pathology [12]. Medical examination must be cost effective. In a hospital or emergency department, the cost of thyroid ultrasound is documented to be quite low [13]. Indicators of physical development (PD) and body type are important not only in medicine, but also in physical education, as well as in sports [14]. Continuous monitoring of RF allows you to determine the characteristics of the growth and development of children, formed in the conditions of a certain lifestyle and environment, as well as timely identify deviations from the normal level of RF and develop measures to prevent and eliminate developmental disorders [15, 16].

Thus, the thyroid gland is an operational subsystem that responds promptly and adaptively, the biological essence of which is the variability of tissues and its adaptation to the conditions of the factors of the external and internal environment that have changed for various reasons.

Purpose of the study - To carry out a comparative characteristic of the size of the thyroid gland and parameters of physical development of children of 11 and 12 years of age.

#### **MATERIAL AND METHODS:**

The research was carried out in secondary school No. 7 in the city of Bukhara on the basis of a bilateral agreement by the Bukhara State Medical Institute. (No. 517 02/05/2020). The results of examination of 80 children (40 boys and 40 girls) 11 and 12 years old were studied. All examined children were divided into 2 groups, comparable in age, sex and clinical and functional indicators. We established the average value of the normal volume of the thyroid gland and found out whether there is a relationship between the volume of the organ and the size of the body.

The correlation dependence of the size of the thyroid gland with the parameters of physical development was calculated by the formula :

$$r = \frac{\sum dx \cdot dy}{\sqrt{\sum dx^2 \cdot \sum dy^2}}$$

Double correlation coefficient (Pearson method), where

- r - correlation coefficient
- dx - the difference between the options in the first line from the average value calculated for this line.
- dy is the difference between the options in the second row from the average calculated for that row.

For anthropometric measurements, the methodology of anthropometric studies of children was used (Morphometric characteristics of assessing the physical development of children and adolescents, methodological recommendations of N.Kh. Shomirzaev, S.A. Ten and I. Tukhtanazarova, 1998). The anthropometric study included measurements of body length, body weight, trunk length, and chest circumference.

Ultrasound studies were carried out on the basis of the Bukhara Regional Endocrinological Dispensary (No. 420 01/29/2020) and was devoted to the study of the ultrasound anatomy of the thyroid gland. The study was carried out on a SONOACE R3-RUS apparatus with linear (7.5 MHz) and convex (3.5 MHz) transducers.

Mathematical processing was carried out directly from the general data matrix Excel 7.0 using the capabilities of the STTGRAPH 5.1 program, the indices of the standard deviation and the error of representativeness were determined.

**RESULTS AND DISCUSSION:**

Ultrasound parameters of the thyroid gland in children 11 and 12 years of age are shown in Table 1.

Table 1. Comparative characteristics of ultrasound indicators of the thyroid gland in children from 11-12 years of age

Indicators	11years old (n= 40)		12years old (n= 40)	
	Girls (n =20)	boys (n =20)	Girls (n = 20)	boys (n = 20)
Width (mm)	15,8 ± 0,50*	15,1 ± 0,19	16,2± 0,35*	15,9± 0,25
Thickness (mm)	19,2 ± 0,50*	19,1 ± 0,19	19,7 ±0,50*	19,4 ± 0,25
Length (mm)	40,1 ± 0,06*	38,0 ± 0,87	41,5± 1,27*	40,2 ± 0,62
The volume of the gland in the sum cm3	13,0 ± 1,01*	11,4 ± 0,40	14,5± 1,02*	13,0± 0,48

Note: \* - significant values of 12-year-old children were noted compared with 11-year-old children  $p \leq 0.05$ .

Data of anthropometric parameters of 11-year-old children

As a result of the research, it was found that the height of 11-year-old girls varied from 136.2 cm to 157.4 cm, on average  $145.3 \pm 1.31$  cm, and in boys of the same age from 135.3 to 150.6 on average  $144.3 \pm 0.95$  cm.

The body length of 11-year-old girls is in the range from 26.3 to 37.2 cm, averaging  $32.6 \pm 0.68$  cm, and in boys from 30.4 to 36.8, the average is  $34.3 \pm 0.40$  cm.

The body weight in girls ranged from 29.4 kg to 49.2 kg, on average  $35.3 \pm 1.22$  kg, in boys of the same age from 24.6 kg to 45.4 kg, on average  $34.3 \pm 1.28$  kg.

Chest girth in 11-year-old girls ranged from 60.3 cm to 77.2 cm, averaging  $66.3 \pm 1.04$  cm, chest girth in 11-year-old boys ranged from 62.2 cm to 77.4 cm , averaging  $68.4 \pm 0.94$  cm (see Fig. 1).

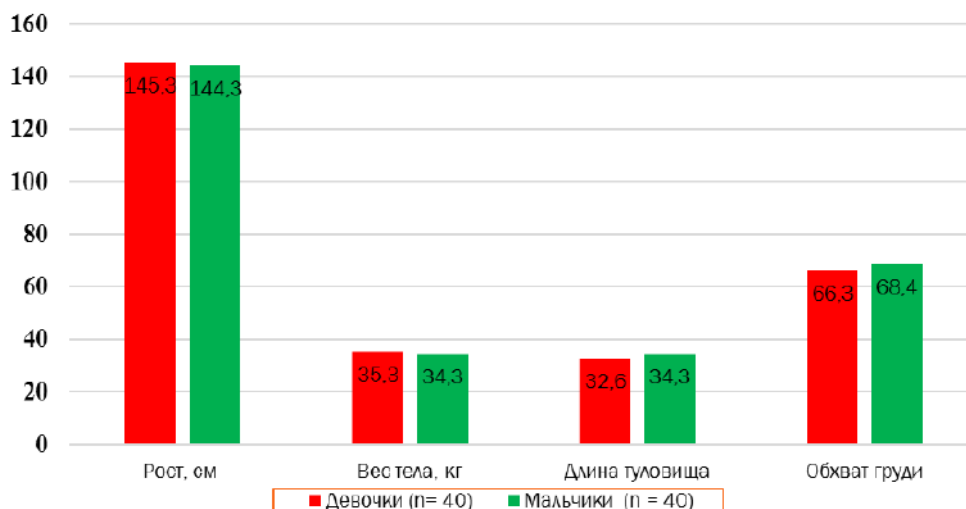


Figure 1. Comparative characteristics of morphological parameters of 11-year-old children

**DATA OF ANTHROPOMETRIC PARAMETERS OF CHILDREN 12 YEARS OF AGE:**

Studies have shown that the height of girls 12 years of age is in the range from 145.2 cm to 166.4 cm, averaging  $152.3 \pm 1.31$  cm. The body weight ranged from 28.3 kg to 66.2 kg, the average was  $40.3 \pm 2.34$  kg.

The study revealed that the height of 12 year old boys ranged from 140.3 cm to 154.2

cm, on average it was  $148.4 \pm 0.86$  cm. Body weight on average  $36.3 \pm 0.62$  kg (from 32 , 2 kg to 42.4 kg).

As a result of the research, it was found that the body length of 12 year old female children varied from 30.3 cm to 37.2 cm, averaging  $34.4 \pm 0.43$  cm, in boys of the same age from 28.4 to 36.3 the average is  $32.3 \pm 0.49$  cm. The chest girth in 12-year-old girls varied



from 60.4 cm to 86.3 cm, averaging  $68.4 \pm 1.61$  cm, the chest girth in 12-year-old girls boys

ranged from 64.3 cm to 73.2 cm, averaging  $70.3 \pm 0.55$  cm (see Figure 2).

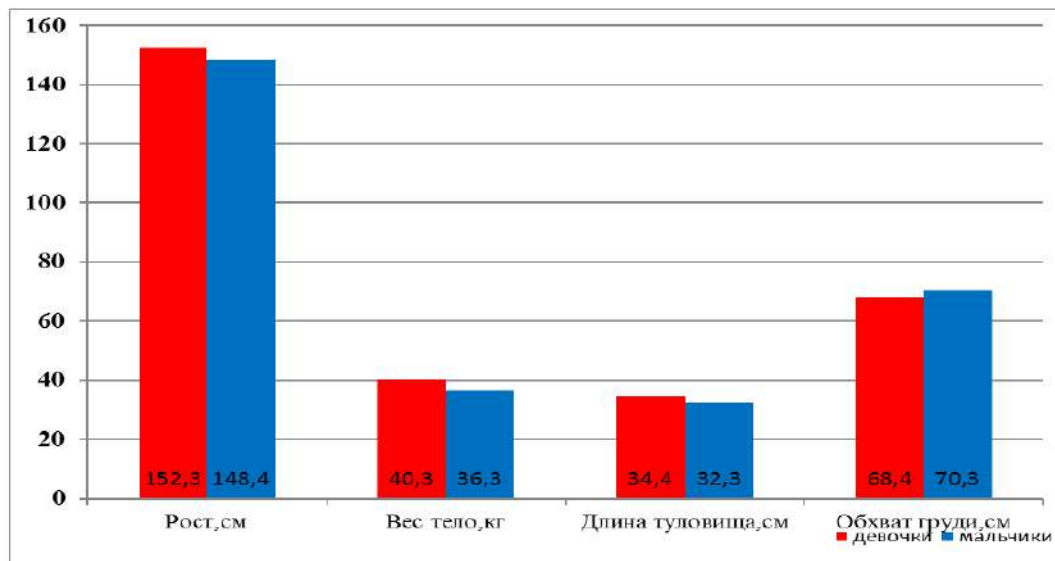


Figure 2. Comparative characteristics of morphological parameters of 12-year-old children

An ultrasound scan of the thyroid gland showed that the width of the gland in 11-year-old girls was 0.7 mm more than in boys of the same age, and 0.3 mm more in 12-year-old girls than in the opposite sex.

Ultrasound examination showed that the thickness of the thyroid gland in 11-year-old girls was 0.1 mm more than in boys of the same age, and in 12-year-old girls it was 0.3 mm higher than that of boys of the same age. The length of the thyroid gland in 11-year-old girls is 2.1 mm longer than in boys of the same age, and in 12-year-old girls it was 1.3 mm longer than in boys of the same age. It was found that the volume of the thyroid gland in girls 11 years old was 1.6 cm<sup>3</sup> more than in the opposite sex of the same age. Comparison of the volume of the thyroid gland in girls and boys of 12 years of age showed that it more on average revealed an excess of 1.5 cm<sup>3</sup> in girls (see table).

Anthropometric studies among 11-year-old male and female children showed that the growth parameters of male children are, on average, 1.0 cm less than those of girls of the

same age, and 12-year-old girls are 3.9 cm higher than boys. peers. When measuring weight, it turned out that the body weight of 11-year-old girls was 1.0 kg more than that of boys of the same age, and 12-year-old girls weigh 4.0 kg more than representatives of the opposite sex. When measuring body length in 11-year-old children, it was found that girls lag behind boys by an average of 1.7 cm, and in 12-year-old girls, on average, 2.1 cm behind boys of the same age. The chest circumference of 11-year-old girls is 1.9 cm less than that of the opposite sex, and of 12-year-old girls, the chest circumference is 2.1 cm less than that of boys of the same age.

Calculation of the correlation coefficient by the Pearson method ( $r = 0.97 \pm 0.10$ ) showed that an increase in the size of the thyroid gland increases the height and body weight. This condition has a strong positive correlation.

Our data coincide with the data of Zimmermann M.V. (2003) that the volume of the thyroid gland of the examined children increases depending on gender and age.

According to A.I. Popovsky (2005), N.A. Belyakova (2006), D.B. Demin (2006) and R.N. Trefilov. (2007) in children who live in different climatic and geographical regions, there are significant differences in the ratio of morphometric parameters and the volume of the thyroid gland, in particular, our studies conducted in the Bukhara region are clear evidence of this.

The study of the macroanatomy of the thyroid gland showed that the thyroid gland in pubertal girls from the Bukhara region has typical structural features that are described in the literature (Vasilieva O.A., 2011).

#### CONCLUSIONS:

Based on the data obtained, it was established that the physical development of 11 and 12-year-old boys in comparison with girls tends to lag behind. The prevalence of height and body weight in girls compared with boys is possibly due to the early onset of their puberty. Anatomical ultrasound parameters of the thyroid gland (length, width, volume) in boys 11 and 12 years of age are less than in girls of the same age. From this it follows that in girls with an enlarged thyroid gland, there is a natural increase in anthropometric parameters such as height and weight.

Thus, the ecological disadvantage of the Bukhara region causes changes in morphological parameters in the thyroid gland, which may be prerequisites for the occurrence of anthropometric changes in puberty in girls. Moreover, if in boys these shifts are insignificant, then in the future there is a clear tendency towards their intensification.

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## ISSUES OF COVERAGE OF CENTRAL ASIA IN THE RESEARCH OF ARAB GEOGRAPHER SCIENTISTS (OH THE EXAMPLE OF IBN BATTUTA)

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### ABSTRACT:

This article covers the trip of the Moroccan scientist Ibn Battuta to Central Asia and the lifestyle, traditions, economy, culture of the peoples of the region, as well as cities and rivers of the country. Sources written in the genre of travel (rihlat), such as Ibn Battuta, play an important role in the coverage of the history of Central Asia of the XIV century. We will analyze the history of our country in our article through Ibn Battuta's research "Tuhfat an-nuzzor fi g'aroyib al-amsor va ajoyib al-asfor".

**KEYWORDS:** travel, judge, Andalusia, Tarmashirin, dirham, dinar, Khanaqakh, Khan, Mosque, Madrasa, tribe, numismatics, etymology.

### INTRODUCTION:

The wide spread of Islam in the Middle Ages from the Pyrenean peninsula to the Chinese border, caused the growing interest of the muslim scholars in the way of living in these countries and their way of life. In the Arab-Muslim world, arab geographers such as Ibn Khurdobek, al-Ya'qubi, al-Istakhri, al-Muqaddas, al-Mas'udiy, Ibn Havqal, Ibn Khaldun, and Abu Hamid al-Gharnatiy, Ibn Fadlan, Ibn Jubayr studied the distant lands. At the same time, the services of the Moroccan Ibn Battuta in the arab-Muslim world are of particular importance. Ibn Battuta's "Travelogue" is distinguished from others by its unique data on medieval countries, cities, the culture of their peoples, their way of life, invaluable in many places. Even, Academician

I.Yu.Krachkovskiy said about Ibn Battuta "the last greatest tourist who came out of all Muslim countries" –he confessed. Indeed, Ibn Battuta has left many countries and admired the people of the world with his "Travelogue", which is considered a unique masterpiece of the genre of rihlat (rihlat – in Arabic means trip, travel; it also means departure (migration)). Ibn Battuta's "Travelogue" has a special place in the history of Arabic geographical literature. At the same time, it gives a geographical description of the countries "seen with their own eyes".

The genre of geographic literature - the first bright novel of rihlat was the research "Ibn Fadlan's Journey to the Volga", published in Baghdad in 992.

### RESEARCH METHODS:

The study is conducted using objective, analysis, synthesis, comparative, generalization, historical analysis, generalization, historical evidence, chronological methods.

### THE MAIN PART:

The full name of the Moroccan Ibn Battutais was Abu Abdullah Muhammad ibn Abdullah Al-Lavati at-Tanjiy, who was born on February 24, 1304 in Tanja, Morocco (now Tangier) in the family of Qazi (Islamic lawyer) Sheikh Abdullah al-Lavati. Since the descendants of Ibn Battuta were from the tribe of the lavat of the barbarians (the people of North Africa), they were used to adding the ratio of al-Lavati to their name. Ibn Battuta

traveled to North Africa (The Land of the Great Magreb(West)), the Middle East, Arabia, Iraq, Iran, Afghanistan, East Africa, Asia Minor, Crimea, the Golden Horde, Central Asia, India, South Asia, Southeast Asia, China, Andalusia (southern Spain) and West Sudan (West Africa). He spent 28 years of his a life traveling these lands in 1325-1354. During this period, the tourist covered more than 120,000 kilometers on three continents of the world. When Ibn Battuta returned from a trip to Sudan (The Land of the Negroes) (1354), he told all his travel impressions to the Granadian (a city in southern Spain) the scientist Sheikh Ibn Juzai. In December 1355, Ibn Juzai summarizes the memoirs of Ibn Battuta, made them into a single book. This was created the classic book of the genre of rihlat (travel) "The Journey of Ibn Battuta". This book was translated into Latin in 1818, English in 1829, and later into the various languages of the world.

Among the countries where Ibn Battuta traveled, it can be said that Central Asia also played an important role and was very rich in interesting events. The reason is that the tourist writes about Central Asia, insisting that this country is sharply different from other countries. Even to Ibn Battuta, many tourists came to Central Asia. One of them was the Venetian family of Polo.

The research of Ibn Battuta "Travelogue" consists of 18 chapters, the ninth chapter dedicated to Central Asia. According to it, in 1333 the tourist traveled to Khorezm through the Golden Horde and arrived in Khorezm in a month. Ibn Battuta says in his memoirs about Khorezm: "...passing through the desert we came to the Khorezm (Urgench). This is a big, important, beautiful and glorious city of the Turks, it has wonderful markets, wide streets, many buildings and attractive places of splendor. Life in this city is boiling, its

inhabitants are so numerous that it reminds the agitated sea...". During this period, Khorezm (the northern Khorezm subject to the higher Golden Horde) was the ruler of Kutlug Temur (ibn Battuta called him Kutludumor), The faithful Emir of the Golden Horde Khan Uzbek Khan (1312 – 1342). He has been in the position of Khorezm. His wife Turabeka Khotun (Turabek Khanim) also organized a number of events for Khorezm. For example, he built a huge mosque in Khorezm.

Ibn Battuta visited Urgench, Samarkand, Bukhara, Naxshab (Karshi), Termiz and other cities of Central Asia and managed to collect valuable information about the life of these cities at that time. In particular, Ibn Battuta wrote such sentences about the people of Khorezm in his travel book: "during my travels around the world, I did not meet people who were more evangelical, noble and hospitable than khorezms. They read the prayer in such order that I have not seen it anywhere else".

Ibn Battuta has also covered a lot of valuable information about the water bodies of Central Asia. In particular, Ibn Battuta says in his "Travelogue" about Amu Daryo: "The Jaikhun River flows near Khorezm. This river is one of the four rivers that start from heaven. It freezes in winter, like the Itil River...In the summer, ships sail along the river to the Termez, and if they sail along the stream from there to bring oats and oats, it will take ten days to work". The Traveler also notes that Khorezm`s laws are spread all over the world and writes that. "Neither in the East nor in the West (the Arab-Muslim world is caught in the Caspian) is it equal to the Khorezm melon. Except Bukhara melon, after it stands Isfahan melon. It is interesting to note that just like dried figs (shariqa) and figs of Malaga (in Spain) on our couch, these zucchini cut into slices, dry in the sun, put them in a basket, take

them to distant cities of India and China. Not all fruits are equal in melon peel”.

Ibn Battuta wrote about the Khanaqakh of Sheikh Najmiddin Kubro and the mausoleum of Imam Abul-Qasim Mahmud ibn Umar az-Zamakhshari, one of the sacred sites of Khorezm. He travels to Bukhara through the South Khorezm Center Kiyot, which is part of the Chigatoy ulus (state). Ibn Battuta crosses the Kyzylkum Desert and reaches the city of Vobkent. About Vobkent Ibn Battuta writes: “Vobkent is a beautiful city. The gardens of the ditches in it are abundant. Residents of the city store grapes in the house all year round. They have a fruit called olu. The same fruits dry and grind and take to India and China... The fruit is very fertile and neither in Andalusia (southern Spain), nor in Syria, I have seen such a fruit”. The tourist leaves Vobkent and goes to Bukhara. He describes Bukhari as follows: “Bukhari is the homeland of the muhaddis Imam Abu Abdullah Muhammad ibn al-Bukhari. This city was the capital of the land behind Jayhun...”

Ibn Battuta will visit the mausoleum of Sayfuddin al-Bokhorzi, the great saint of Bukhara on the theme of Fathabad. Finally the tourist is thrown towards the raging (against). He brings the definition of Naxshab like that: “The Naxshab is little wonderful city surrounded by gardens and ditches”. Ibn Battuta also brings information about Kepak Khan and Tarmashirins from the Chigatay Khans. For example, he said that he met Tarmashirin’s brother Kepak Khan in the mosque and wants to emphasize that in this way he is Muslim.

The trip to Samarkand in Ibn Battuta left very great impression. He writes: “I said goodbye to Sultan Tarmashirin and went to Samarkand. It is one of the very large and incredibly beautiful cities. It is located on the banks of the river Vodil-Khassarin

(Zarafshan)....”the tourist was especially admired by the architectural monuments of Samarkand and in this regard he says: “such huge places and buildings on the banks of the river (Zarafshan) bear such high standards that they are highly skilled inhabitants of Samarkand... The residents of Samarkand are friendly with feudal latitude in relation to foreigners”.

The tourist’s next trip is organized by the Termez. He describes the Termez like that: “ Termez is a large city with a lot of beautiful buildings and markets, experiencing it will cross rivers, gardens are also very many. Especially in vain with grapes is very sweet, meat, milk is very abundant.” This information about Termez explains how was the social situation of the population and it’s economy. Ibn Battuta also mentions some information about the land of Khorasan in his research. Then in 1333 he crossed the Hindu Kush Mountains and reached India. Ibn Battuta also draws attention to the etymology of this mountain. Many merchants and other people crossed the Hindu Kush Mountains on their way to India or to come from India. Not everyone survived this trip. The reason was that there was constant rain in these high mountains.

Ibn Battuta, who devoted his life to science and the history of nations on the basis of his own experiences, died in 1377 at the age of 74. Ibn Battuta is proud not only Moroccans, but of all Muslim countries. In order to perpetuate the name of the tourist, one of the largest shopping malls in Dubai was named after Ibn Battuta. Some of the information in Ibn Battuta’s “Travelogue” has aroused great interest among historians and numismatics. For example, Ibn Battuta writes in his work that this Khorezm dirham is equal to three hundred western dinars. Numismatics scientist G.A.Fedorov – Davidov based on this information came to the conclusion that in the

30s of the XIV century the ratio of gold to silver was 1:3,65.

#### CONCLUSION:

It should be noted that Ibn Battuta, with his description of the countries, peoples and nations, the scale and diversity of customs and traditions, the simplicity of his statement, the closeness to the truth, and the fact that it is based on evidence. The Travelogue is a unique work not only in the Arab-Muslim geographical literature up to the fourteenth century, but in the history of pictorial geographical literature of the world as a whole. It is also a unique masterpiece of the Muslim and non-Muslim world with its richness and accuracy of geographical, ethnographical, cultural, economic, toponymic, anthropological, historical, religious, urban planning and other information. The play contains historical information about ancient Khorezm, Bukhara, Samarkand, Nakhshab (Karshi) and Termez. Well-known German geographer Richard Henn praised the tourist's services to scientist, he saying: "Ibn Battuta, a Moraccan who lived in the XIV century, is undoubtedly...to be recognized as the greatest of the tourists. Even Marco Polo's success is in the face of the amazing work that this travel fan has dedicated his entire life to ... it is no exaggeration to call this Moroccan the greatest tourist of all time before Magellan", - he said.

For us, this work is a unique masterpiece that provides information about the regions of our country, the economic activities of the population. The existence of such works serves as an important basis for the study of our history.

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## CLASSIFICATION AND TYPES OF EUPHEMISMS

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### ABSTRACT:

**The study of euphemisms in linguistics. Naming of euphemisms in Turkish linguistics and differences in terminology. Types of euphemisms by subject. Taboo and euphemisms are one of the topics that have not yet been studied in depth in Turkish linguistics, the terminology of which has not been formed.**

**KEYWORDS: euphemisms, taboo, Classification of euphemisms, linguistic signs; nonlinear characters**

### INTRODUCTION:

Translation issues concerning euphemisms have always been very actual. It is important for translators and interpreters to know specific peculiarities of euphemisms' translation. This issue is being investigated by number of investigators and translators these days. It will remain actual for many years as languages are all the time in progress and new words appear in them and translators are, and will be working on transferring them from one language into another. There are many articles on this topic in linguistics. Along with Western linguists, Turkic linguists are also conducting in-depth research on this topic. There are more explanations, terms, and terminological problems than solutions to the linguistic problems associated with euphemisms.

### MATERIAL METHODS:

The facts show that the systematic study of euphemism as a whole as a speech layer, revealing all its speech-inner possibilities, describing its functional-methodological features, especially its relation to types of

functional styles, is one of the most important and urgent problems of our methodology today. G'.Abdurahmanov's view that "one of the most important issues facing literary critics and linguists now is to reveal the general and specific aspects of literary style and speech style" also emphasizes the relevance of this topic. In general linguistics, euphemisms have been studied by many Turkic peoples, especially Kazakh, Turkmen, Altai, Azerbaijani, Uzbek and Russian linguists. Among them are such linguists as S.Altayev, N.Ismatullayev, N.M.Jabbarov, V.B.Darbakova. Turkish linguists such as K.Demirci, A.Gungor, U.Soylomez studied euphemisms that are relatively little studied in Turkish linguistics.

Euphemisms (Greek *yeirpegsha* - soft expression) are words that appear as synonyms for words and phrases that seem awkward, inappropriate, or rude to the speaker. The euphemism is to avoid calling a negative reality, to mitigate the negative effects of such a reality, to minimize the negative effects of situations that offend, offend, disrespect, or violate moral norms, or to conceal them; it is used to convey an unpleasant message in a softer, softer form. For example, instead of saying he died, he died, died, died; Use expressions such as tearful, relieved instead of saying born. The use of euphemisms in language has been shaped as a historical and ethnographic phenomenon in connection with the taboo phenomenon. Euphemism is associated with the development of traditions, cultural levels, aesthetic tastes, and ethnic norms. As a language develops, so does its euphemistic layer. New forms of euphemism emerge on the basis of new morals and new worldviews. There is also the



euphemism for language, which arises from the demands of a particular speech situation, the meaning of which is often clarified through the text. For example, in the sentence "It seems that it will not be poured until we hand over Rano to its owner," said Nigor's mother (A.Qadiri), from the point of view of speech etiquette, the euphemism in the form of handing over to the owner is used instead of giving. Euphemisms are widely used in scientific and formal methods.

#### MAIN PART:

Classification of euphemisms. Dealt with the phenomenon of euphemism each of the linguistic scholars is based on its different characteristics tried to make their classifications to one degree or another. This is as the case is as multifaceted as other linguistic units the classifications focus on different aspects of euphemisms and the results obtained also vary. It's diversity although it may seem contradictory, it actually serves to complement each other It should be noted that Russian linguist R.A.Budagov divided euphemisms into two major types suggests to be: a) euphemisms of literary language; b) different jargon euphemisms. R.A.Budagov groups contextual euphemisms separately. They are relatively more perfect and are based on the character of the person expressing the thought as well as the condition of the text .E.P.Senichkina calls contextual euphemisms occasional euphemisms. They always occur in speech and meet all the requirements of the euphemism event, but do not have a ready-made template. Typically, such euphemisms are figurative and metaphorical in nature. These kinds of euphemisms are A.M.Katsev is also out of focus left In his view, occasional euphemisms have a strong euphemistic effect (paint). They are new-not in shape. Along with occasional euphemisms, E.P.Senichkina distinguishes the following categories: euphemisms that have their own pattern in language and are known to the expressive, euphemisms whose origin is unknown to the expressive (related to a person or thing-event), as well as historical euphemisms and dysphemisms. The weight of the classifications is the thematic classification.

In this regard, the classification made by R.Holder is noteworthy. He lexically and semantically divides euphemisms into 60 subclasses. This classification indicates the diversity of the denotative content of euphemisms. AM Katsev divides euphemisms into 10 themes:

- 1) The name of the divine powers;
- 2) Units representing death and disease;
- 3) Names associated with the defect;
- 4) Names related to gender;
- 5) Names denoting poverty;
- 6) Names denoting certain professions;
- 7) Names of mental and physical disabilities;
- 8) Names of clothing parts.

According to the ontological nature of M.A.Katsev again euphemistic means There is also a classification:

- 1) Euphemisms that take shape;
  - 2) Naturally occurring euphemisms;
  - 3) Formed naturally on the basis of stylistic dye (irony or humor)
- Euphemisms.

Social classification has a special place in revealing the essence of euphemisms holds. It is based on the fact that the word belongs to a certain social group separated. An example is the classification of B.A.Larin:

- 1) National, literary euphemisms;
- 2) Class and professional euphemisms;
- 3) family-household euphemisms.

Linguistics of euphemisms by some researchers Classification is also carried out:

- 1) According to the structure (word, phrase, sentence);
- 2) According to the methodological nature (high, neutral, low);
- 3) According to the word structure: a) migration (metaphor, metonymy, based on the narrowing of the essence, etc.); b) by changing the shape formed (phonetic distortion, conversion, affixation, abbreviation and h.); c) on the basis of assimilation units.

Below we divide the classification features of speech-specific euphemisms into two major groups:

- 1) Linguistic signs;
- 2) Nonlinear characters.

Classification based on linguistic signs is based on thematic, semantic, formal, structural, methodological features of euphemistic units. In the classification based on zero-numerical signs, the external factors occurring in the dialectical unit in the speech phenomenon of euphemistic units are taken into account. These include pragmatic factors related to speech conditions and situation, along with purely linguistic factors such as the worldview, level, positive or negative image of the speaker and listener, gender, age. The implicit appearances of the euphemisms also evoke the impression that they are non-linguistic in nature. However, since the value of the implicit euphemism is perceived on the basis of the original term of the denotation, it is also appropriate to consider it as a linguistic means. Euphemistic means of denoting a person. Just as changes in social life have led to the emergence of new speech units, attempts to avoid expressing political figures directly in general morally and culturally can lead to the emergence of new units or the acquisition of new meanings and functions of existing units. These means are reflected in the political-journalistic or artistic style, depending on the requirements of a particular historical period. This can be seen again on the basis of the author's works created in an environment of great social and political change. The word valine'mat can be found in two different senses: a satirical euphemistic meaning and a taboo euphemistic meaning. Both meanings appear in the text on the basis of the siege: So why do you and I, as workers and peasants, serve as a foot in our favor?(A.Q.).The word deserves to be considered as a metaphor-based euphemism. In the following sentence, unity arises in its own sense and evokes a euphemistic "tone": One of his slaves says that I have two words worth my valine'mat. (A.Q."Scorpion from the altar") The fact that the name "Valine'mat" is used to indicate its euphemism. The word Jannatmakon also has a euphemistic meaning to express the personality of Amir Umar Khan:- Have you seen "Jannatmakon"? (A.Q."Monument of 1819").In addition, the "big" unit is seen as a euphemistic tool for expanding the range of political figures: Rahimberdi Khudoiberdiev, Nuriddin Zokirov, Berkin Azimov, Karim Abdurahmanov and Vali

Usmanov and they did as they pleased.(A.Q."He raises his fist before he is afraid")

From the euphemisms of the euphemistic units denoting the person, which are the norm for literary speech, the adulterous, dishonest, liquid foot, and "separate" forms are common in our language, and in speech we find special expressions:, Such as "flirt". The influence of the Russian language is also observed. The thematic group of euphemistic means representing such a person can be further expanded. For example, the oppressed, the weak, associated with the concept of woman; there is a reason that signifies the concept of mother; a weak, karma expression as a euphemistic means of expressing the concept of a girl; nomadic euphemistic units of "beard" meaning false believers, hypocrites; such as the ironic euphemistic means of "cultural nations" used against the colonialists. Euphemistic expressions representing human organs. No matter how softened or refined the parts of a person that should be euphemically expressed, that content remains in the human mind as a shameful, awkward concept.

A euphemism for the physical defects of man expressions. Deaf, which means "deaf", means "deaf" one eye is euphemistic meaning in the west, one eye in the east including the combination. Among the euphemistic units that express defects in the appearance of a person, such as unhappy (cold-blooded), prematurely created (prematurely born), the figurative combination "husni Yusuf" is also significant: next to him hangs a gray yacht tie and strangles his right throat the adorned middle-aged man looked another "beautiful Joseph." (A.Q."Scorpion from the altar") The same expression, which softens the meaning of "ugly", "ugly", is given in quotation marks and has a satirical meaning.

Euphemistic expressions denoting the physical condition of a person. Pregnancy-related expressions include pregnancy, fetal, heavy leg, double; forms such as tumsa, qisr (infertile or infertile woman). It is known that instead of the words hez, hezalak, euphemistic means such as barren, bezurriyot, "red groom" are reflected in the speech. In Abdullah Qadiri's novel "Last Days", the weak combination of my

client, spoken in Otabek's language, also expressed the man's physical condition on a euphemistic basis.

Euphemistic expressions denoting the spiritual defects of man. Euphemistic expressions such as empty-headed, fat man, greasy, angry, simple, naive, semi-cultured people, raw man are observed in fiction. Euphemistic units such as nervous pain (mentally ill, insane), childhood (simple, stupid, raw), lack of courage (cowardice), and lack of credentials (betaine) are also considered in this system.

Euphemistic expressions denoting human behavioral and relationship defects. In general, a certain amount of insult, irony is reflected in most of the units in which a person's behavioral and relationship deficiencies are refined. No matter how much the lack of culture, the failure in upbringing, softens the mood of protest against the object: Have you ever seen the absence of our humanity somewhere, or is it futuristic?(A.Qad."The scorpion from the altar")Or, to put this case of the Judge to the readers' discussion, I say for my part: if you believe the word of the book, your conscience is a little off.(A.Qod."Shallaqi")In both cases, euphemistic devices expressing the concepts of "twist" or "unscrupulousness" are used in the form of a syntactic device.

Among the euphemistic means of theft are "income" (stolen money), chaka chaka (money collected as a way), shilib gone (stolen), "honest profession" (theft), "profession" (theft), squandered (looted, stolen). The neck is thick (violent), sharp, representing spiritual defects (to be able to speak), without a skirt (betaine, without a trick), a speculator (a salesman, a swindler), a ser-ishtaha (a womanizer), a woman with a light soil (light), euphemistic units such as safil (inferior, lowly), nafsi shaytan (extremely greedy), mir kuru (stingy, greedy) are widely used in speech.

#### **CONCLUSION:**

The classification of euphemisms allows for a deeper study of its essence, it serves to observe, to study, to shed more light on the structure of this phenomenon from different perspectives, and the different classifications

indicate that euphemisms are multifaceted and the product of a complex process. Euphemistic units are a multifaceted phenomenon, which allows them to be classified differently on the basis of each sign. After all, individual speech-specific euphemisms are a combination of linguistic and non-linguistic factors, and only the generalization of the results obtained on the basis of these factors allows to determine the individual nature of each euphemism, as well as individual idiolect euphemisms.

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## LAW MAKING BY INTERNATIONAL ORGANIZATIONS

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### ABSTRACT:

**This article discusses the concept, forms and theories of law-making in international organizations, as well as the processes of lawmaking in international organizations.**

**KEYWORDS: international organizations, law-making, national legal system, CIS, doctrine of international law, law-making process, types of law-making.**

### INTRODUCTION:

Today, the role of international organizations is growing in complex and diverse international relations. In contemporary world, without international organizations we cannot imagine either international relations or international law. Because to solve vital global problems can be carried out only by organized team activities.

Objective basis of increasing international organizations role in international relations is economic factors and the process of internationalization continues to encompass other aspects of society.

This situation is creating number of problems which should be solved within the framework of international organizations and international conferences around the world. The activities of international organizations cover all areas of cooperation between its member states. At present, although the scope of areas regulated by international law between states is less, there are organizations or coordinating bodies that coordinate cooperation in existing areas.

Until recently, international organizations were seen more as the basis of diplomatic relations. However, the activities of international organizations are much broader than international diplomatic relations, and so far they have increasingly gone beyond the traditional system and the powers of coordination, and have acquired their own operational functions. The scale of international organizations is expanding to cover every area of human life. In terms of its mandate, international organizations also carry out law-making, law-making and protection functions, as well as investigation, arbitration, judiciary, oversight, international peace and security, and in some cases the maintenance and management of certain territories.

### MATERIALS AND THEORIES:

In the doctrine of international law, the creation of international law means the process by which states agree on the content of norms and their entry into force.

One of the most important features of international law-making is that each state has the right to recognize or not to recognize the agreed content of a norm as legally binding. International law-making process consists of collegial actions in the negotiation level and individual acts of member states which is relevant to admit norms [1].

In the legal literature, the legislative activity of international organizations is often referred to as a regulatory function. The regulatory function of international organizations is to establish norms and models of an ethical, political and legal nature designed

to shape the behavior of the participants in international relations.

When it comes to law-making, international organizations need to take into account the particular features of their legal nature. The single position on the legal nature and legal personality of international organizations has developed slowly in accordance to international law. It should be noted that international law does not contain general norms which determine the legal nature and legal personality of international organizations.

We can see this from the example of the Commonwealth of Independent States, the organization as a independent subjects of international law, has its its peculiar property and the availability factor of the properties. CIS as a subjects of international law adj during the creation of norms known in the field of rights and other international organizations will also be able to conclude international agreements. The system of CIS has independent decision-making bodies [2] .

Today about the law-making of international organizations can be drawn a number of general conclusions. In particular , it is not possible to set priorities and clear terms of reference for all international organizations to participate in the rule-making process ; the specific degree and forms of participation in such order shall be determined by the founding States in respect of a particular organization at the time of its establishment , depending on the functions it performs; it is possible to determine the powers granted to any international organization in the field of lawmaking through a thorough analysis of its founding act[3] .

Doctrine of international law recognized at the following provisions: States shall establish international organizations, grant them certain legal nature and legal capacity,

and recognize their ability to exercise their rights and obligations and international organizations participate in the creation and application of international law and monitor the observance of international law by member states

#### **DISCUSSION:**

In accordance with the above recognition, states co-create a new subject of international law. At the same time, international organizations simultaneously perform the functions of lawmaking and law enforcement in the field of international cooperation. The fact that international organizations act independently and legally in international relations shows that they have a special legal will. In other cases, the actions of the members of the organization, relying on their personal will, do not allow for the formation of a merger process or solidarity. The agreed will of the international organization will be of an interstate nature.

Potential actions of international organizations based on the expression of their will, the assumption of rights and obligations under international law - the source of a relatively isolated will, its legal basis - is the founding act.

Today, the rules on the existence of two types of components of the legislative activity of international organizations are widely recognized: a) direct participation in the creation of norms of international law; b) participation in the legislative process of the state

However, these rules are not a single concept because other circumstances may reflect other aspects of these processes. The doctrine of international law forms various criteria for the correct assessment of the legislative activity of international organizations. In particular, the forms of

participation of international organizations, methods, directions, types, aspects and etc.

The theory of international law includes treaties adopted within an international organization and treaties sponsored by an international organization in accordance with the method of development. In the first case, the establishment of existing rules of conduct is carried out entirely within an international organization; in the second, this is done in its organs and directly at a conference organized to address the issue[4]. Generally speaking, in fact, traditionally, the process of concluding agreements is mainly carried out at international conferences.

In modern international law, international organizations have effective mechanisms for the participation of states law-making activities. This is due, firstly, to the fact that due to the constant study of the positions of states in matters of its competence, the organization will have better information about the need to prepare a draft agreement. Second, the ongoing process of interaction and consultation of member states in the organization will help to form a legal motive and, in the future, to develop an initial draft of the convention. Third, an important task gives to the secretariats to study the problem, prepare and distribute the necessary documents, and in some cases prepare a draft agreement. Fourth, international organizations have the ability to attract highly qualified professionals on a permanent or temporary basis.

In the process of creating norms governing relations between states, an international organization may act in different roles according to the initial stages of the process of concluding an international treaty. The final stage of law-making, or the making of agreed norms binding on an interstate treaty, can only be the result of the

specially expressed will of the States concerned.

In modern practice and the theory of international law, their participation in the codification of international law is recognized as an auxiliary function of international organizations in the process of creating norms.

The process of codification is the systematization and improvement of general norms of international law, which is carried out by defining and clearly defining the content of existing norms, revising outdated and developing new norms, taking into account the needs of international relations and combining these norms at the international level. The Convention is a legal act designed to regulate as fully as possible a certain area of international relations in the interests of peaceful relations and cooperation between states, regardless of differences in the social structure of states.[5].

Historically, there have been two types of codification processes: codification, which takes place as a special process without the participation of an international or intergovernmental organization, and codification, which takes place within an international organization. The United Nations' initiatives to codify areas of international relations are an example of such processes. Modern codification processes are widely reflected not only in the activities of universal international organizations, but also in the activities of regional international organizations.

The legislative activity of international organizations also has to play an important role in the domestic legislative initiative of the member states. The participation of international organizations in the law-making of states covers a variety of powers and circumstances. Depending on the goals and objectives of the organization, this participation is defined in the constituent

documents and other documents governing their activities.

Normative legal acts regulating the activities of regional international organizations do not always directly provide rules for the procedure for adopting international agreements. Examples of such organizations are the Commonwealth of Independent States. The normative documents regulating the activities of this organization contain only references to the procedure for adopting international agreements concluded within the CIS. Thus, in accordance with Rule 16 of the Regulations of the Council of Heads of State and the Council of Heads of Government, the conclusion and entry into force of agreements by the Council of Foreign Ministers and the CIS Economic Council is carried out in accordance with the 1969 Vienna Convention on International Agreements. The agreements will be signed at the meetings of the Council of Heads of State, the Council of Heads of Government, as well as the CIS Council of Foreign Ministers and the Economic Council in accordance with the instructions of these bodies.[6] .

The specifics of the process of concluding treaties within international organizations do not change the legal nature of the treaty process as the coordination of the will of the states involved in the development of the treaty. Even in cases where the draft agreement has previously been developed by experts (for example, in the UN Commission on International Law, the ILO, the relevant bodies of UNESCO), it is submitted to the bodies of international organizations consisting of representations for consideration and discussion, not by authorized representatives of states. At the UN, these are the committees of the General Assembly.

In the process of such a discussion, there is a process of conciliation of the will of states

on the content of an international treaty, that is, a process of conciliation between states as a way of creating international legal norms.

In carrying out an ancillary function in the legislative process of states, international organizations often act as a depository of international agreements concluded within the organization.

In addition to its ancillary function, international organizations also carry out direct law-making activities (sometimes referred to as actual rule-making). There are three main types of direct legislative activity: a) the conclusion of international agreements by international organizations (in the legal literature, this type is sometimes referred to as the external law of international organizations); b) making decisions which determine the principal matters of the organization or the conduct of the Member States in regard to external regulation; c) decision-making on internal organizational issues or the creation of internal law[7] .

The legislative work of international organizations is not limited with this. The common efforts of states towards a common goal require the development of a strategy of actions that they must take in the future. As long as there is a need to define its legal norms in any field, the role of international organizations in these processes continue to grow. The emergence of new branches of international law in the future and the establishment of organizational and legal bases and norms of these branches are important trends that should be addressed by the legislative mechanisms of the bodies of international organizations and member states.

#### **CONCLUSION:**

In conclusion, the law-making by international organizations is a process that can not only set standards for the international

community, but also make significant changes in the domestic legal system of states. With this in mind, the law-making of universal and other regional international organizations should have features that develop the national legal system of states, have a common character for all societies, and can solve social and other problems. To do this, it is necessary not to use the legislative activity of international organizations in the interests of one or two of its member states, and to direct the legislative activity of international organizations to the ability to meet the legal needs of all states. Indeed, in the future, the documents adopted by international organizations will become the main basis of universal legislation.

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## TOOLS AND METHODS OF TRAINING YOUNG VOLLEYBALLERS

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### ABSTRACT:

**This article deals with the physical characteristics of young volleyball players. Conclusions have been developed to improve the effectiveness of the learning process. Volleyball training tools and methods have been analyzed and given recommendations.**

**KEYWORDS: Educational-training process, physical quality, dynamics, volleyball.**

### INTRODUCTION:

A number of normative and legal acts aimed at the development of physical culture in our country have been adopted and are being implemented. In particular, the Laws of the Republic of Uzbekistan "On Education", "On Physical Culture and Sports", the Resolution of the President of the Republic of Uzbekistan dated June 3, 2017 No PP-3031 on measures for further development of physical culture and mass sports. [1, 2, 3]. As a result, a healthy lifestyle is gaining popularity among young people, and the popularity of sports is growing. Athletes of Uzbekistan demonstrate the sports potential of our country to the world, winning high victories in prestigious world competitions.

Among sports, volleyball is distinguished by its uniqueness, spectacle and fun. Particular attention should be paid to the sequence of

exercises in the organization of training in this sport. Therefore, coaches, specialists and professionals should always pay attention to the exercises that help to improve the functional capacity of the body and the formation of many positive qualities of volleyball players.

According to experts, volleyball requires a high level of preparation for competitions and the ability to apply the special factors that the team needs, depending on the situation during the game.

The main purpose of quality volleyball training is to ensure the victory of the team in the competition. In order to succeed in competitions, coaches, especially those who work with young athletes, should pay attention to the following aspects:

**The first, the main stage:** since volleyball is a team game, the actions of team members to achieve a certain goal are compatible, to form the skills of volleyball players to get out of different situations together.

**The second stage** is for teachers and coaches to develop a strategy for training young volleyball players and, based on this strategy, to thoroughly prepare technical, tactical and mental attack projects against the opposing team.

**The third stage:** in order to be able to perform group and individual actions in attack and defense, it is necessary to select volleyball players according to their abilities and place them on the field.

**The fourth stage:** to get the young volleyball players to master the ball in a month, such as receiving the ball perfectly, delivering it to the connecting player and organizing the attack. In addition to attacking, they must have the skills to block and return balls that hit the barrier and pass them to the connecting player, as well as to organize a re-attack.

**The fifth stage** consists of physical ability and mental state and characteristics of volleyball players as well as morphofunctional traits. Young volleyball players are required to develop such qualities as jumping, strength, speed, endurance, agility, along with increasing their mental stability, based on the use of all-round developmental tools.

**Power ability** - the ability to move dynamically using a variety of exercises, often serves to develop the ability to control high-speed force (throwing the ball to the moon, passing the ball, hitting the ball, etc.). Therefore, strength skills play an important role in an athlete's professional training.

**The ability to speed** is maximal in all parts of the moon. Offensive (individual and group), blocking (individual and group) and agility play an important role in the defense.

**Flexibility** - It is important for young volleyball players to stay in the training process, to develop the perfect flexibility of the body, as

well as to develop tools and techniques related to flexibility.

**Agility** - is manifested in young volleyball players by performing complex movements in a short time and effectively. There are three levels of agility.

with the suitability of the action case;  
short-term motion compatibility and spatial accuracy;  
short-term accuracy under changing conditions;

All three levels of agility are manifested during the race. The appearance of a third level, which has a certain position, is necessary for high sportsmanship.

Endurance is about ensuring the effectiveness of participation in the competition. Aerobic, anaerobic energy is required for young volleyball players to achieve high results in the competition. However, specific levels of endurance are determined not only by energy supply, but also by changes in the activity of the central nervous system endocrine system, the state of the basic musculoskeletal system, specific muscle activity.

The mood and character of young volleyball players play an important role in participating in competitions. The morphofunctional characteristics of the players are characterized by the uniqueness of the competitive activities in volleyball. The training tools and methods for young volleyball players are required to be as follows (shown in Table 1).

Table 1. Means and methods of training volleyball players

1- means	2-means	3-means	4-means	5-means
<b>Competitive exercises</b>				
Opportunity	<b>Competition and play tools</b>			
General training tools	Physical training	Means for developing technical training	Tactical training development tools	Preparations for the play development tools
Special training tools	Additional tools	Improving technical training skills	Doing exercises	Doing general exercises during the play
Competitive exercises in training	Games like volleyball	Means of clear performance of assigned tasks	Tactics of individual and group work	Team management in friendly matches and competitions
Method	Distribution of downloads per month	Proper execution of game technical methods	Choosing the right tactics during the game	Control games
A real competitive exercise	Skill of the game	Increasing game skills	Connection between players	Follow the team in training and competitions

In addition to further improving the volleyball training system using the method presented in the table, it is shown that the training exercises for young volleyball players cover all aspects from simple to complex. Such sequences would be appropriate if used in the training process and training cycles for skilled volleyball players, depending on age and gender.

**General training means:** mental training along with physical training is carried out for comprehensive training of athletes. These include:

- Exercises that help the emergence of technical and tactical experience and the growth of the necessary physical qualities;
- Exercises that increase general fitness;
- Exercises that accelerate recovery from fatigue.
- Psychological instructions that will be needed during the month and training.

**Special training tools:** competition in the course of training, during the performance of special exercises, the elements of movement, that is, actions that are similar to the exercises

of competition, depending on the nature of the manifestation of abilities. Training exercises have a great impact on the overall training of volleyball players, leading to the automation of some necessary actions.

**Competitive exercises in training:** these are exemplary forms of holistic movements, competitive exercises, consisting in the simplification of exercises performed with mental fatigue in athletes who are less interested in this sport.

**Methods:** Proper distribution of loads, training in the correct execution of each exercise in the classroom, as well as the organization of each session according to the plan, once a week or after each session to conduct control months. A real competitive exercise is a sport competition in full compliance with the rules in the form of a competition under the moon in certain conditions, in which the means of physical training reflect the characteristics of the player to cultivate certain qualities.

Based on the above considerations, it should be noted that the use of special exercises in the training of young volleyball players, the development of a system of exercises that fully meets the characteristics of adolescent volleyball players is of paramount importance. These exercises have a positive effect on the development of physical training and technical and tactical methods in young volleyball boys and girls. These exercises include:

**Exercise 1** Perform a state of precise reception of the ball hit in different zones in all zones of the same area. Note: Only one player on the field will attempt to receive any ball, penalized for inaccurate balls (perform the exercise for 5-10 minutes).

**Exercise 2** When defending the zone, the practitioners send the ball to certain zones 10-20 times in a row from 2-3-4 zones with an attacking shot on the net. The player who receives the most balls is declared the winner.

**Exercise 3** Exercises in pairs: Players in zones 1-6-5 hit the ball sharply in zones 2-3-4 against players facing the net. Players in zones 1-2-3 receive and turn back to block and return to the starting position (this exercise is performed 10-12 times).

**Exercise 4** Prerequisite: - Two pairs of players are placed in front of the net in zones 4 and 2 facing the net. When the player who throws the ball to the moon throws the ball, the players of the first pair quickly move to zones 1 and 5 and receive the ball being entered (simultaneously entering the balls 1 and 5)

**Exercise 5** Exercises in pairs: one player throws the ball up and forward, the other players run, stop, hang the ball on the head with both hands from above, stretch the legs, throw the ball to the partner with wrist-palm

movements and run back a little (6-7 times.) ) [7,8,9].

Studies show that long and uninterrupted training in recent years sometimes causes a feeling of boredom in young volleyball players. It is important to train athletes of this age with the use of competitive exercises aimed at improving their physical, technical, tactical and mental preparation [8, 9].

As mentioned above, in addition to knowing the direction and norm of loads, it is important to consider the compatibility of exercises in different directions in order to achieve a positive result of emergency exercises. It is expedient to select means that act in one direction [5,7].

These exercises help to significantly increase the physical and technical tactical capabilities of young volleyball players. Development of a complex system of exercises in the organization and planning of training, to determine the effectiveness of these exercises, the intensity and performance of ongoing exercises, the amount of exercise in a given lunar exercise, the size of the field, lunar devices (individual or group defense, ball reception accuracy, rapid attack, etc.) ) should be taken into account. Because there is a significant difference in the intensity of these parts. Young volleyball players participating in continuous training can change the task as needed due to the shortening or lengthening of the break between exercises [4,6,9].

By performing these exercises on young volleyball players, we tried to determine the average heart rate and the average energy purification value. This is reflected in the following table: (Table 2).

Table 2. In performing complex exercises for volleyball players intensity indicators  
(According to Prof. Hiroshi Toyoda) (n = 12)

№	Complex exercise	Average YUQS hit minute		Opportuni-ty spending (Intensity)%	Average energy purification kkal / minute	
		Maximum score	Average score		Teenagers	Girls
1	Exercise 1	193	179	92,7 %	19,4	14,4
2	Exercise2	186	167	89,7 %	18,0	13,9
3	Exercise 3	191	178	90,0 %	18,2	14,3
4	Exercise 4	189	173	90,4 %	18,1	14,1
5	Exercise 5	184	166	92,2 %	17,8	12,8

An analysis of the literature and the best practices of coaches in various sports show that young volleyball players are required to use high-intensity exercises in training sessions.

The use of special exercises in the training of young volleyball players creates conditions that are fully consistent with the mental characteristics of adolescents. This helps young volleyball players to develop their motor skills optimally and maintain the potential to improve them at the stage of high sportsmanship.

The correct use of the above-mentioned model exercises, to determine the effect of exercise on the body of the participants, will help them to be fully prepared for the competition, not only physically but also mentally. serves as the main engine in the output.

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## WHAT IS INTELLIGENCE, HOW WE UNDERSTAND - INTELLIGENCE

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### ABSTRACT:

The article reveals a model of an interactive lesson on the topic "What is intelligence?" With the help of role-playing games, different life situations are given. In conclusion, there was an attempt to reveal the image of an intelligent person. To consolidate the material, various tasks of a creative nature are given.

**KEYWORDS:** intelligence, interactivity, life situations, role-playing games, culture of behavior, quality.

### INTRODUCTION:

Intelligence (from Lat. Intelligens (intelligentis) knowing, understanding, reasonable) - a high level of intelligence development, education, high culture of behavior.

Intelligence is a very broad concept. It implies not only good education, broad erudition, knowledge of the basics of culture and ethics of behavior, but also the importance of how a person uses all this "wealth" - for the benefit or harm of the people around him.

There are many examples from life and from works of art and literature, when a "common man from the people" who has never read the works of great humanists, in critical circumstances (for example, during a war), without hesitation, goes to death to save other people. But there are other examples when an educated person with the deepest knowledge in the field of any science uses them for his own selfish purposes, without thinking that this harms other people and can even lead to their death. So which of them can be called an

intelligent person? What is the main thing in this concept? Having reasoned, we inevitably come to the idea that humanity lies at the heart of intelligence, and everything else is attached to it.

Over the centuries, the idea has been confirmed that intelligence and humanism are inseparable. This is evidenced by the greatest works of literature, painting, music, sculpture, science.



**Task 1.** Read the text. On the basis of its content, briefly formulate the definition of "intelligence". Write it down.



**Task 2. Answer the questions!**

1. What is intelligence?
2. Who is such an intelligent person?
3. What qualities should an intelligent person have?
4. What is the difference between an intelligent person and a non-intellectual?
5. Is it easy to be an intelligent person?
6. Do you consider yourself an intelligent student? Why?

### INTERACTIVE MINUTE

**(situational role-playing games)**

**"I try to be intelligent"**

Comment:

- \* Divide students into groups as desired. Assign roles to situations.
- \* Groups discuss the proposed situations, express their opinion, and argue.

**We solve life situations:**

**1-situation:**

You are having a business conversation with a colleague. Suddenly, someone third asks you a question. **What will you do?**

**2-situation:**

You are a military training teacher. Enter the gym, and the students are excited - running, making noise, not paying attention to you. **What will you do?**

**3-situation:**

You are in a hurry to get to class. At the bus stop just you and an elderly woman with a heavy bag. A crowded bus was come up. **What will you do?**

**4-situation:**

Huge queue is at the box office for plane tickets. Suddenly a man comes right to the cashier and hands the cashier money for a ticket. The whole line begins to resent. An elderly woman, standing first in front of the window, asks why a man takes a ticket out of line. After hearing the answer, she skips him to buy a ticket. At the end of the lesson, the teacher, after listening to the reasoning and arguments, summarizes and assesses the work of each group.

**Modeling the image of an intelligent person**

• Let's try to write down the qualities of an intelligent person and draw them in the form of a cluster!

**Remember!**

Intelligence is a rare and valuable personality trait that includes many important qualities, both intellectual and moral:

- Education, knowledge;
- Politeness;
- Self-respect;

- The ability to understand another person;
- Tolerant attitude towards the world and towards people;
- Kindness;
- Responsiveness;
- Good breeding;
- Critical thinking;
- High culture of behavior;
- Heightened sense of justice;
- Decency;
- Following the dictates of conscience;
- Tact, excluding rudeness;
- Intolerance of injustice;
- Patriotism;
- Heroism;
- Modesty;
- Generosity;
- Good faith;
- A responsibility;
- Devotion in everything.

Express your position - can a formed one of the listed qualities, signs turn a person into an intellectual?



**Task 4. Translate the words into Uzbek**

Education, politeness, respect for oneself, the ability to understand another person, tolerant attitude towards the world and towards people, kindness, responsiveness, good breeding, critical thinking, high culture of behavior, heightened sense of justice, decency, following the dictates of conscience, tact, excluding rudeness, intolerance, patriotism, heroism, modesty, generosity, conscientiousness, responsibility, devotion in everything.



**Task 5. Make phrases with the given words**

Education, politeness, kindness, responsiveness, good breeding, justice,

decency, intolerance, patriotism, heroism, modesty, generosity, conscientiousness, responsibility, devotion.

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## शोध-आलेख

### आधुनिक परिप्रेक्ष्य में अमृतलाल नागर और उनका उपन्यास

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अमृतलाल नागर हिन्दी के एक कथाकार है जिन्होंने आदर्श की जगह यथार्थ का हाथ थामते हैं। नागर जी अपने कथा-साहित्य में यथार्थ पर बल देते नजर आ रहे हैं। इसी क्रम में कई बार इनके पात्र 'आत्महत्या' तक कर लेते हैं। ऐसा नहीं है कि नागर जी पूर्ण यथार्थवादी उपन्यासकार हैं और आदर्श को बिलकुल भी नहीं जगह दिया है, लेकिन ज्यादातर इनके साहित्य में खासकर उपन्यास में यथार्थ ही देखने को मिलता है।

अमृतलाल नागर साहित्य के एक ऐसे फलक के जनक थे जो कभी अपने सिद्धांतों से समझौता नहीं कर सकते थे। यह बात इनके उपन्यासों को पढ़ने के बाद पता आसानी से चल सकता है। नागर जी के उपन्यासों में पात्र ढेर सारे मुसीबतों को झेलते हुए नजर आते हैं। प्रेमचंद के बाद अत्यंत मजेदार मुहावरेदार लखनवी भाषा का प्रयोग करनेवाले नागरजी आज भी हिन्दी साहित्य जगत में प्रसिद्ध हैं। इनके सभी उपन्यासों में कहानी लगभग एक नहीं है सभी की समस्याएँ लगभग एक नहीं है सभी की समस्याएँ भी अलग-अलग हैं। जीवन के हर मर्म को समझने वाले उपन्यासकार कहे जा सकते हैं। जो आधुनिक हैं और आज जीवन-जीने के

लिए एक सहायक भी। उपन्यास आज के समाज के लिए सबसे यथार्थ और मार्मिक चित्रण प्रस्तुत होता है। यह एक सफल विधा है और सशक्त भी कहानी और उपन्यास में बस यही अंतर है कि कहानी किसी एक घटना पर आधारित होता है किसी एक पात्र पर केन्द्रित होता है, जीवन की किसी एक सच को उभारा जा सकता है जबकि उपन्यास में कई घटनाएँ होती हैं, पात्र की अधिकता होती है और सबसे मूल बात कि इसमें जीवन की कई सारी सच्चाईयों को एक साथ उभारा जा सकता है। इसलिए ऐसा कहा जा सकता है कि आधुनिक समाज के जटिल जीवन की प्रस्तुतति उपन्यास के द्वारा ही संभव है। अमृतलाल नागर हिन्दी साहित्य के इतिहास में एक ऐसा नाम है जिसने हिन्दी साहित्य की अनेक विधाओं जैसे—व्यंग्य, कहानी, उपन्यास, नाटक, रूपक यात्रावृत्त, संस्मरण, साक्षात्कार आदि की वृद्धि की है। परंतु मूलतः इनकी ख्याति एक उपन्यासकार के रूप में है। जिस उपन्यास के कारण अमृतलाल को एक पहचान मिली उनका संक्षिप्त वर्णन निम्नलिखित हैं:—

1. **महाकाल**— अमृतलाल नागर का यह प्रथम उपन्यास है। इस उपन्यास में बंगाल में 1943 ई० में भीषण अकाल का यथार्थ और जीवंत चित्रण किया है। यह उपन्यास मध्यवर्गीय समाज की घृणा, पीड़ा, संघर्ष और आर्थिक विपन्नता का अंतर्द्वंद्व की यथार्थ करुण गाथा है। इस उपन्यास का नायक पाँचू हैं, जो शिक्षक है, इस उपन्यास में भूख के आगे विवश समाज कैसा रूप ले लेता है इसको दिखाया गया है।

यह एक सामाजिक उपन्यास है। नागरजी ने इस उपन्यास में 'भूख' को मनुष्य के जीवन की सबसे बड़ी दुर्बलता के रूप में दिखाया है। इस उपन्यास का एक और नाम है और वो है— भूख।

पाँचू एक आदर्शवादी और ईमानदार शिक्षक है। इस गाँव में अकाल पड़ जाने के कारण लोग भूख से तड़प रहे हैं। दाने-दाने के लिए लोग इधर-उधर भाग रहे हैं। मास्टर पाँचू को भी अपने पापी पेट को भरने की चिंता है। इस उपन्यास में भूख के कारण एक आदर्श और सच्चे शिक्षक का किस प्रकार इन सब चीजों से धीरे-धीरे मोहभंग हो जाता है। इस पर नागरजी गंभीरता पूर्वक दिखाया है। भूख के कारण पाँचू की सारे आदर्श और संस्कार धीरे-धीरे यथार्थ की कटुता से टकराकर भयानक रूप ले लेती है। भूख के कारण रिश्तों के बीच में दरार तो हो गई लेकिन इन रिश्तों के खोखलेपन भी दिख गया। अन्न के अभाव में लोग मर रहे हैं, चीख रहे हैं, चिला रहे हैं, लेकिन मदद के लिए कोई नहीं है। सब अपने स्वार्थ साधने में व्यस्त है। इस प्रकार हम देख सकते हैं कि नागरजी अकाल के बहाने लोगों की इंसानियत को भी टटोलने का प्रयास किये हैं और उसमें वे सफल भी रहे।

2. **बूँद और समुद्र**— यह उपन्यास नागर जी ने 1956 ई0 में लिखा था। इस उपन्यास की कथा भारतीय मध्यवर्गीय जीवन परिवेश का यथार्थ के कैनवास पर रखा गया है। नागर जी कहीं न कहीं उसी मध्यवर्गीय

जीवन को भोग भी रहा था और अपने अनुभव से इसे व्यापक फलक पर ला भी रहे थे। उन्होंने खुद 'बूँद और समुद्र' के भूमिका में कहते हैं— "इस उपन्यास में मैंने अपना और आपका, अपने देश के मध्यवर्गीय नागरिक समाज का गुण-दोष भरा चित्र ज्यों का त्यों आँकने का यथामति, यथासाध्य प्रयत्न किया है, अपने और आपके चरित्रों से ही इन पात्रों को गढ़ा है।"<sup>1</sup> इस उपन्यास में नागरजी ने एक खास मोहल्ले के माध्यम से सम्पूर्ण भारतीय जीवन को बड़ी ही कुशलता के साथ प्रस्तुत किया है। यह कहानी लखनऊ के एक मुहल्ले में राजाबहादुर सर द्वारका दास के पुरखों की हवेली में उनकी पहली पत्नी 'ताई' अपने पति से अलग होकर रहती हैं। राजाबहादुर जाने-माने रईसों में गिने-जाते थे। लेकिन जब इनकी शादी 'ताई' से हुई थी तो उस समय इनके यहाँ खाने के भी लाले पड़े हुए थे। घरवालों की चाह थी कि ताई 'बेटा' देंगे और वारिस भी। लेकिन ताई ने एक बेटी को जन्म दिया और आठ महीने बाद वह चली भी गई। फिर क्या था घर के लिए वारिस की चाह में राजा बहादुर की दूसरी शादी कर दी गई। जिस दिन नई पत्नी घर से ताई उसे छोड़कर चली गई। तभी से सारे मुहल्ले की ताई बन गई थी। ताई के जीवन में जो करवाहट उत्पन्न हो चुकी थी अब उसका प्रभाव सारे मुहल्ले पर पड़ने लग गया था। लड़ाई-झगड़ा, टोना-टोटका, और आटे के पुतले बना-बनाकर लोगों के घरों में रखकर उनका अनिष्ट चाहने

लगी थी। अंततः कहा जा सकता है कि बूँद व्यक्ति का प्रतीक है और समुद्र समाज का। नागरजी ने बड़ी कुशलता के साथ इस मुहल्ले के माध्यम से संपूर्ण भारतीय सामाजिक जीवन को प्रस्तुत किया है।

3. **शतरंज के मोहरे**— अमृतलाल नागर का यह उपन्यास 1957 ई0 के गदर क्रांति के बाद 1959 ई0 में लिखा गया। यह ऐतिहासिक उपन्यास 1959 ई0 में लिखा गया। यह ऐतिहासिक उपन्यास है जिसमें लखनऊ के नवाबी संस्कृति का यथार्थ चित्रण किया गया है। इस उपन्यास में यह दिखाया गया है कि कैसे लखनऊ का नवाब अपने स्वार्थ नीतियों के कारण विलय हो गया।
4. **सुहाग के नुपूर**— यह उपन्यास 1960 ई0 में प्रकाशित हुई। यह उपन्यास तमिल महाकाव्य 'शिलप्पादिकारम' पर आधारित है। इस उपन्यास में कुलवधू के सुहाग के नुपूर और नगरवधू के नृत्य धुंधरुओं का संघर्ष ही प्रमुख है। इस उपन्यास में त्रिकोणिय प्रेम के माध्यम से नागर जी ने दक्षिण भारतीय सामाजिक समस्याएँ, राजनीतिक संघर्षों, संस्कृति एवं कला आदि के विधि रूपों का चित्रण किया है। नागरजी ने इस उपन्यास में मुख्य रूप से वेश्या बनाम कुलवधू की समस्या को उठाया है।
5. **अमृत और विष**— यह उपन्यास अमृतलाल नागर की प्रसिद्धि का कारण बना। यह उपन्यास 1966 ई0 में लिखा गया है। नागरजी ने इस उपन्यास में अरविंद शंकर के बहाने अपने विचारों को पाठक के

समक्ष पेश किया है। राजनीतिक दाव-पेचों को वे कभी नहीं मानते थे। अरविंद शंकर का गुस्सा इन नेताओं पर फूट पड़ा है— “वे सरकारी दरबारी काँग्रेसी बेड़ों की भीड़ होगी जिन्हें नगर काँग्रेसी अध्यक्ष महोदय मेरी खुशामद में हाँक कर लायेंगे। उन्हें गलतफहमी है कि मैं पण्डित जवाहरलाल जी का दुलारा हूँ।”<sup>2</sup> इस उपन्यास में नागरजी दोहरे कथानक को साथ लेकर चलती नजर आती है। एक तरफ अर्थाभाव से पीड़ित लेखक और स्वतंत्रता संग्राम के सेनानी अरविन्द शंकर की आत्मकथा है तो दूसरी तरफ आज के नौजवान पीढ़ी और पुरानी मान्यताओं के संघर्ष पर आधारित। इस उपन्यास में अरविन्द शंकर एक लेखक है जो जीवन संघर्ष से जूझ रहे है। वह अपने पारिवारिक जीवन के संघर्ष से लड़ते-लड़ते उदासीन हो चुके है। अरविन्द शंकर के लिए लेखनी ही जीवन है। अगर आप इस उपन्यास को पढ़ें और देखें तो पता चलेगा कि इस उपन्यास का जो पात्र है अरविन्द शंकर वो नागरजी के जीवन संघर्ष से काफी मेल जाता है।

6. सात घूँघट वाला मुखड़ा – यह 1968 ई0 में अमृतलाल नागर ने लिखा। इस उपन्यास में मूल रूप से एक नारी मसरू बेगम के हृदय के मर्म को यथार्थपरक रूप में दिखाया गया है।
7. एकदानैमिषारण्ये— यह उपन्यास 1972 ई0 में लिखा गया। यह पौराणिक पृष्ठभूमि पर रचित उपन्यास है। नागर जी इस उपन्यास की

भूमिका में अपने उद्देश्य को स्पष्ट करते हुए लिखा है— "नैमिष आंदोलन को ही मैंने वर्तमान भारतीय या हिन्दू संस्कृति का निर्माण करने वाला माना है। वेद, पुनर्जन्म, कर्मकाण्डवाद, उपासनावाद में ही हुआ। अवतारवाद रूपी जादू की लकड़ी धुमाकर परस्पर विरोधी संस्कृतियों को धुला-मिलाकर अनेकता में एकता स्थापित करने वाली संस्कृति का उदय नैमिषारण्ये में हुआ और यह काम मुख्यतः एक राष्ट्रीय दृष्टि से ही किया गया था।"<sup>3</sup>

8. **मानस का हंस** – यह 1972 ई0 में लिखा गया जीवनीपरक उपन्यास है। इस उपन्यास में तुलसीदास के जीवन एवं व्यक्तित्व को प्रमाणित रूप से बताने का प्रयास किया गया है। इस उपन्यास से भी नागर जी को काफी प्रसिद्धि मिली। तुलसी को जानने के लिए यह उपन्यास मुख्य रूप से याद किये जाते हैं। इस उपन्यास में नागरजी ने जो तुलसी के जीवन के विविध पक्षों का सजीव चित्रण किया है वो काफी सराहनीय है। तुलसी के जन्म के साथ ही उनकी माँ मर गई थी दूसरे दिन ही उनकी पिताजी भी चल बसे। बच्चे को एक भिखारिन ने पाल-पोस कर बड़ा किया। वहीं तुलसी आज भारतीय जनमानस का चहेता बन गया। नागरजी ने जहाँ एक ओर मानस का हंस में तुलसी जी की प्रमाणिक जीवनी प्रस्तुत करने का प्रयास किया है वहीं दूसरी ओर मध्ययुगीन भारतीय समाज के अलग-अलग पक्षों को भी प्रस्तुत करने का सफल प्रयास किया है।

9. **नाच्यौं बहुत गोपाल**— यह उपन्यास नागर जी ने 1978 ई0 में लिखा। यह उपन्यास एक सच्ची घटना पर आधारित है। इस उपन्यास में मेहत्तर जाति की समस्याओं का दर्द मार्मिक रूप देखने को मिलता है। यह उपन्यास एक दलित-उपन्यास है। इस उपन्यास में नागर जी दलित कहें जाने वाले एक ऐसे जाति को उपन्यास के फलक पर लाने का प्रयास किया है, जो समाज के सबसे नीचले हिस्से को जीने को अभिशप्त है। इस उपन्यास में नारी की भी कम भूमिका नहीं है। निर्गुनिया जो ब्राह्मण घर की लड़की रहती है एक बुजुर्ग से शादी कर देने पर कैसे एक मेहत्तर जाति मोहना के साथ भाग जाती है, और भागने के बाद किन परिस्थितियों का सामना करना पड़ता है। इसको दिखाया गया है, मेहत्तर कहे जाने वाली इस समाज की स्थिति यह है कि वे अपनी बीवियों को साहब के खुशामदी में भेजने को तैयार थे—  
“जाना तो तुझे पड़ेगा ही हरामजादी। चाहे हंस क जा, चाहे रोके जा। मेरे पास पन्द्रह सौ रूपये नहीं है कि जमादार और दारोगा और चीप साहब को चटाकर अपने लिए काम पा सकूँ।”<sup>4</sup>
10. **खंजन नयन**— यह उपन्यास 1981 ई0 में लिखा गया है। यह भी जीवनीपरक उपन्यास है। इस उपन्यास में सूरदास के जीवनी और व्यक्तित्व पर यथार्थपरक ढंग से लिया गया है। इस उपन्यास के माध्यम से नागरजी सूरदास के राम पक्ष और काम पक्ष को दिखाने का काम किया है। इस संसार की कोई भी व्यक्ति अपनी कमियों को



पूरा करके ही महान बन जाता है। सूरदास ने भी यही किया। इस उपन्यास में नाव खेमे वाली बालिका से सूरदास के प्रेम संबंधों को दिखाया गया है।

11. **बिखरे तिनके**— यह उपन्यास 1982 ई0 में लिखा गया है। इस उपन्यास में युवा-पीढ़ी के भटकने का यथार्थ चित्रण हुआ है। कथावस्तु की दृष्टि से नागर जी यह उपन्यास उतना विकसित नहीं कर पाए है। इस उपन्यास में नागरजी ने पुरानी पीढ़ी और युवा पीढ़ी के बीच चलने वाली अपनी-अपनी मान्यताओं को लेकर चल रहे संघर्ष को चित्रित किया है। उस उपन्यास में मुख्य रूप से नौकरशाहों, भ्रष्टाचारों और रिश्वतखोरों पर करारी चोट की गई है।
12. **अग्निगर्भा**— यह उपन्यास 1983 ई0 में प्रकाशित हुई। इस उपन्यास में शादी के समय दिया जाने वाला 'दहेज' पर यथार्थपरक विचार किया है। इस उपन्यास में एक आधुनिक लड़की की स्वाधीनता पर भी सवाल खड़ा किया है— "यह शादी-ब्याह, कैरियर, सबके बिल्कुल अलग होते हैं। कुसुम से तो खैर तुलना कर ही नहीं सकती, हाँ तेरे समान में भी विद्याशास्त्र संपन्न पति चाहती हूँ पर मेरे चाहने से क्या सब हो सकता है।..... क्या विचित्र है, यह व्यवस्था कि एक अट्ठाइस वर्ष की बालिग युवती अपनी इच्छा के अनुसार अपने भविष्य के लिए भी कोई निर्णय नहीं ले सकती।"<sup>5</sup>

13. **करवट**— यह उपन्यास 1985 ई0 में लिखा गया। इस उपन्यास में लखनऊ के एक खत्री परिवार की तीन पीढ़ियों का चित्रण किया गया है।
14. **पीढ़ियाँ**— यह उपन्यास 1990 ई0 में लिखा गया है। यह नागर जी का अंतिम उपन्यास है। इस उपन्यास में 'करवट' की कहानियाँ का विस्तार किया गया है।

निष्कर्षतः कहा जा सकता है कि अमृतलाल नागर आधुनिक युग के उपन्यास में महत्वपूर्ण भूमिका निभाये है।

#### संदर्भ—ग्रंथ

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## ‘मैला आँचल’– एक विवेचन

अंशु कुमारी

अतिथि व्याख्याता,

हिन्दी विभाग

भूपेन्द्र नारायण मंडल विश्वविद्यालय, मधेपुरा।

साहित्य सृजन के माध्यम से तमाम साहित्यकारों ने अपनी रचनाओं द्वारा हिन्दी साहित्य जगत् को अमूल्य निधियों से भरा है और इन्हीं समस्त साहित्यिक निधियों के बीच कुछ ऐसी रचनाएँ विद्यमान हैं जो साहित्यकार को अमर बना देती हैं जैसे प्रेमचंद कृत ‘गोदान’, जयशंकर प्रसाद की ‘कामायनी’, पंत कृत ‘पल्लव’ इत्यादि। ‘मैला आँचल’ फणीष्वरनाथ ‘रेणु’ जी की इन्हीं रचनाओं की भाँति अमर कृति है। तभी तो उपन्यास जगत में ‘गोदान’ के पश्चात ‘मैला आँचल’ को ही सर्वश्रेष्ठ रचना की श्रेणी में शामिल किया जाता है।

1954 में प्रकाशित ‘मैला आँचल’ अपनी रचनाकाल से आज तक न केवल साहित्यिक जगत में अपितु अपने पाठक वर्ग के हृदय में आँचलिकता की महक को यथावत बनाये हुए है। हालांकि रेणु जी से पूर्व आचार्य शिवपूजन सहाय ने 1926 में अपनी रचना ‘देहाती दुनिया’, तथा नागार्जुन ने 1952 में ‘बलचनमा’ के माध्यम से आँचलिक उपन्यास के क्षेत्र में कदम जरूर रखा था किन्तु इस प्रयोग में सफलता ‘मैला आँचल’ को ही मिली। जिसने फणीष्वरनाथ रेणु जी की ‘मैला आँचल’ को आँचलिकता का पर्याय बना दिया। दरअसल ‘आँचलिकता’ शब्द का तात्पर्य किसी रचना में एक क्षेत्र विशेष के शब्दों और परम्पराओं का बहुतायत में पाए जाने से है। मूल रूप से समझा जाए तो उस रचना का कथानक कोई व्यक्ति विशेष नहीं बल्कि एक क्षेत्र विशेष होता है और उस क्षेत्र में रहने वालों की सामाजिक, मानसिक, सांस्कृतिक आदि दशाओं के माध्यम से रचनाकार अपनी रचना को सार्थकता प्रदान करता है। ठीक ऐसा ही हमें उपन्यास ‘मैला आँचल’ में देखने को मिलता है जिसका कथानक है— नेपाल की सीमा से सटा उत्तर-पूर्वी बिहार का एक छोटा-सा गाँव ‘मेरीगंज’। तभी तो स्वयं फणीष्वरनाथ रेणु अपने इस उपन्यास के विषय में लिखते हैं—“यह है

‘मैला आँचल’, एक आंचलिक उपन्यास।’ कहा जाता है कि एक महान रचनाकार अपने द्वारा रचित हर पात्र के भीतर पैठ जाने की क्षमता रखता है और इसी समावेशी शक्ति के धनी फणीष्वरनाथ रेणु ‘मैला आँचल’ के हर पात्र को सजीव बना देते हैं तभी तो साहित्यिक शब्दों एवं भाषाओं से अपनी लेखनी को सुसज्जित करने वाला साहित्यकार ग्रामीण परिवेश की नब्ज में समा कर ग्रामीण बोली, परिवेश, रीतियाँ—कुरीतियाँ, परम्परा, आडम्बर इत्यादि सभी की सफल अभिव्यक्ति करता दिखता है। और इसी कारण पूरे उपन्यास की कथा यात्रा के दौरान ग्रामीण शब्दों की प्रचुरता मिलती है जैसे— पुरैनिया (पुर्णिया), टीसन (स्टेषन), गनही (गाँधी), सुराज (स्वराज) इत्यादि इत्यादि। ऐसे शब्द जहाँ कुछ पाठकों के लिए दुरुह बन सकते हैं पर ये शब्द आंचलिक उपन्यासों के प्राण तत्व साबित होते हैं। इसीलिए ये शब्द इस उपन्यास की कमजोरी नहीं अपितु इसकी शब्द शक्ति हैं और जब आंचलिकता इस उपन्यास की विशेषता ही है तो ऐसे अनेक शब्दों के भंडार इसमें प्रयुक्त मिलेंगे। इसी प्रकार क्योंकि हर क्षेत्र विशेष की अपनी कुछ मान्यताएँ एवं परम्पराएँ होती हैं। वैसी ही इस उपन्यास के संदर्भ में भी देखने को मिलती है जैसे—कमला नदी से जुड़ी मान्यताएँ, जाती—पाती का ढकोसलापन, सामाजिक भोज के अवसर पर बड़ी जातियों का छोटी जातियों के साथ न खाना आदि।

इस उपन्यास में घटित अनेक घटनाएँ हैं जो यह अहसास कराती हैं कि मानसिक एवं सामाजिक रूप से पिछड़े इस ग्रामीण परिवेश में भी सामाजिक बुराईयाँ एवं कुरीतियाँ बिमारी की भाँती ही इस गाँव में अपने पैर पसारे हुए हैं। मंदिर एवं मठों के पुजारियों के भेस में छिपे महंत जी द्वारा राधा नामक युवती का शोषण ऐसी ही बुराईयों का प्रमाण है जो इस उपन्यास में स्पष्ट किया गया है। गाँव में विद्यमान विभक्त्य चेहरे को भी दिखाया है जो पूरे उपन्यास में हमे यदा—कदा देखने को मिल ही जाते हैं जैसे डॉ० प्रषान्त के गाँव आने पर लोगों में उनकी जाति जानने की आतुरता, सभी जातियों के रहने के अलग—अलग स्थान भी इस गाँव में जातिवाद के दुराचार की ओर संकेत करते हैं। इसी कारण उपन्यास में जाति को लेकर राजनीति भी दिखाई देती है। उसको लेकर सभी अलग—अलग गुटों में बँटे हुए थे। कांग्रेसी तथा सोषलिस्ट पार्टियों की गतिविधियाँ, विचारधाराएँ एवं कार्य करने के तरीके को भी दिखाया गया है। साथ—ही इस उपन्यास में यह

भी दर्शाने का प्रयास किया गया है कि अधुनिकता का रंग किस प्रकार क्षेत्र व अंचलों पर भी कमोवेश रूप में अपना असर छोड़ रहे थे। जहाँ आधुनिकवादी संक्रमण के इस दौर में भी डायन कह कर एक औरत की हत्या कर दी जाती है, दवाओं का निर्माण गाय के खून से होने की अफवाहों का सच माना जाना जैसी हरकते इस बात को स्पष्ट करती है कि गाँव में आधुनिकता के इस दौर में भी अशिक्षा और अंधविश्वास का ही वास था। जिस कारण वहाँ आज भी ब्राह्मणवादी और सामंती व्यवस्था विद्यमान थी। जिसका गलत लाभ समकालिन जमींदार, तहसीलदार, धृत ब्राह्मण आदि उठाते थे। इस प्रकार रेणु जी ने ग्रामीणों के दयनीय एवं शोषित दशा का चित्रण अपने इस उपन्यास के पात्रों के माध्यम से कर दिया है। तो साथ ही फणीश्वर नाथ रेणु ने कुछ किसानों में उत्पन्न हो रहे अधिकार चेतना और संघर्षशील व्यवहार का भी वर्णन किया है। कालीचरण जैसा पात्र इस नवीन चेतना का उदाहरण है। स्वतंत्रता संग्राम एवं सत्याग्रह के प्रभाव से ग्रामीण परिवेश भी अछूता न रहा जिसका प्रतीक है उपन्यास में बावनदास, बालदेव आदि जैसा पात्र जो सुराज(स्वराज्य) के खातिर जेल जाते हैं तथा अनेक प्रकार की तकलीफों का सामना भी करते हैं। यहाँ के ग्रामीणों के विषय में हम डॉ० प्रषांत (जो इस उपन्यास का अहम एवं शिक्षित पात्र है) के द्वारा इस गाँव के लोगों के विषय में कही गई इस बात से जान सकते हैं जिसके अनुसार “गाँव के लोग बड़े सीधे दिखते हैं, सीधे का अर्थ यदि अनपढ़, अज्ञानी और अंधविश्वास हो तो वास्तव में सीधे है। जहाँ तक सांसारिक बुद्धि का सवाल है वे हमारे और तुम्हारे जैसे लोगों को दिन में पाँच बार ठग लेगे और तारीफ यह कि तुम ठगी जाकर भी उनकी सरलता पर मुग्ध होने के लिए मजबूर हो जाओगे।” इस कथन में समस्त ग्रामवासियों के स्वाभाव का अंतर्विरोध स्पष्ट व्यक्त होता है। जहाँ तक डॉ० प्रषान्त के निजी अनुभव की बात की जाए तो वह गाँव वालों के व्यवहार से आश्चर्यचकित है। उसके व्यक्तित्व की बात करे तो रेणु जी ने इस पूरे उपन्यास में सबसे उज्ज्वल एवं प्रगतिशील चरित्रा के रूप में डॉ० प्रषान्त को ही रखा है जो ग्रामीण अंधकारों को अपने चारित्रिक प्रकाश से दूर करने हेतु प्रयासरत रहता है। न तो वह रूढ़ियों को मानता है और अपने सम्पर्क में आए हर किसी को ऐसा ही करने की प्रेरणा देता है। वही विष्वनाथ मलिक जो गाँव का तहसीलदार तथा फिर कांग्रेस के नेता के रूप नजर आता है वह पूर्णतः एक शोषक वर्ग का प्रतिनिधित्व करता है। अपने दमनकारी जमींदारी के चक्र में वह कई

मासूमों को पीसता है और सामाजिक तौर पर एक शराफत का मुखौटा धारण किए हुए रहता है। सिर्फ यही नहीं बल्कि अज्ञानता एवं जागरूकता के अभाव में इस गाँव में मलेरिया, कालाजार, पायरिया आदि से ग्रसित है और दीनता के कारण इन बिमारियों से लड़ने की असमर्थता है जिससे कई लोग पीड़ित है। और इससे होने वाली मौतों को कभी डायन का नाम दिया जाता है तो कभी कुछ और। भूत-प्रेतों की साया की छाया भी मानने वाले इस गाँव के पात्रों में शामिल है। इस प्रकार मिथकों और रूढ़ियों से घिरा यह गाँव अनेक समस्याओं से जुझता नजर आती है। जहाँ पीड़ित भी है और पीड़ित करने वाले भी है। और इन्ही द्वंद्वों से जुझते दिखते है। और नए पात्रों के साथ नई प्रवृत्तियों का भी उद्घाटन होता चला जाता है।

पात्रों की बात की जाए तो उपन्यास में कई पात्रों की भूमिका है। जिनमें से कुछ पात्र अपनी हरकतों से गुदगुदाते है, कुछ उच्च जातियों को प्रदर्शित करते पात्र हमें इतिहास की पुस्तकों में वर्णित जालिम जमीदारों की याद दिलाते है तो वही इस उपन्यास के केन्द्र पात्र पढ़ा-लिखा डाक्टर प्रशांत नैतिकता का परिचायक नजर आता है जो इन ग्रामीणों की वर्तमान स्थिति में सुधार हेतु प्रयासरत है, साथ-ही क्योंकि इस उपन्यास की कथावस्तु स्वतंत्रता प्राप्ति के दो-एक वर्ष पहले से लेकर उसके लगभग एक वर्ष बाद तक की है इसीलिए इस उपन्यास में हमें राजनीति का कुचक्र भी देखने को मिलता है। सभी पात्रों में हमें मोटे तौर पर अलग-अलग वाद दृष्टिगोचर होते है जैसे- जातिवाद, समाजवाद, पूँजीवाद, विकासवाद आदि। अतः डॉ० प्रशांत, कमला, विष्वनाथ, कालीचरन आदि पात्रों से मिश्रित यह उपन्यास जहाँ एक ओर प्रचलित जातिवाद के वीभत्स चेहरे को दिखाता है जिससे निराशा उत्पन्न होती है तो वहीं जमीदारों के क्रूर व्यवहार पाठकों में क्रोध का भाव उत्पन्न करती है, मठ के मालिकों का नीचपन जहाँ धृणा उत्पन्न करती है तो साथ-ही डॉ० प्रशान्त एवं कमला का सात्विक प्रेम हृदय में एक मधुरता उत्पन्न करती है।

इस प्रकार यह उपन्यास कई भावों एवं रस को प्रस्फूटित करती है किन्तु कहीं भी कोई घटना अस्वाभाविक या नकली नहीं लगती है जो इसे सर्वग्राह्य बनाती है। साथ-ही प्रदर्शित करती है रेणु जी के परकाया प्रवेश की असीम क्षमता को। साथ ही क्योंकि यह उपन्यास विषेय नायक प्रधान नहीं है, अपितु पूर्ण अंचल ही इसके प्रधान नायक के रूप में

वर्णित हुआ है। अतः उस अंचल में पनप रहे एवं पनप चुके मनोवृत्तियों पर प्रकाश डालना निश्चित रूप से अनिवार्य हो जाता है, जिसमें जैसा कि उपर बताया गया है महन्तो के चारित्रिक पतन की भी चर्चा है जो अपनी कुत्सित मानसिकता से ग्रसित होने के कारण मठ को अंदर से वेष्टालय बना दिया है जहाँ मठों की सेविकाओं के मान सम्मान एवं इज्जत का मर्दन किया जाता है। जहाँ पर दूसरों का उद्धार करने वाले गुरु एवं चेला दोनों ही एक से बढ़कर एक भ्रष्ट एवं चरित्रहीन हैं। किसी ग्रामीण परिवेश में घटित ऐसे घृणित क्रिया का उद्घाटन करना निःसंदेह ही एक साहसी प्रयास है और रेणु जी ने निश्चिंता से इस पक्ष का वर्णन इसीलिए भी किया है क्योंकि उनका मानना है कि 'घृणित-अश्लील पशुता पर मंगल कामना का जयघोष अवश्य गूँजगा।'

इस उपन्यास में चेतना और रूढ़िवाद का विरोधाभास देखने को मिलता है। जिसमें निःसंदेह प्रासंगिकता भी है क्योंकि आज के परिवेश में भी हम जातिवाद की भीषणता, बलात्कार, शोषण जैसे जघन्य कृत्यों का अस्तित्व भी पाते हैं, जमींदारी समाज का ऐसा प्रभाव आज भी विद्यमान है जहाँ अमीर और अमीर और गरीब और भी निर्धन ही होते जाते हैं। एक दमनकारी शक्ति है जो इस खाई को पाटने में नहीं देती है। इस अंतर को कभी मिटने नहीं देना चाहती है। मूल रूप से कहा जाए तो उपन्यास 'मैला आँचल' में जिस गरीबी, गुलामी, शोषण, नस्लवाद, जातिवाद, दमन आदि की बात कही गयी है। वह समस्या आज के भारत की भी है। यह मूल भारत की बात है जहाँ शक्तियाँ कुछ हाथों में केंद्र हैं और शेष का अस्तित्व यँ ही खतरे में है। जहाँ आज भी बहुसंख्यक ग्रामीणों को आर्थिक विपन्नता एवं पिछड़ेपन से जूझना पड़ता है। ग्रामीण परिवेश के इर्द-गिर्द घुमी इस उपन्यास की कथावस्तु उस अंचल विशेष के लगभग हर पहलू को छूती हुई गुजरती है जिसका वर्णन इसमें किया गया है और इस क्रम में उपन्यासकार बिल्कुल निष्पक्ष होकर अपनी भूमिका निभाता दिखता है। चाहे वह यहाँ की प्रकृति को वर्णित कर रहा हो या फिर यहाँ के लोगों की प्रकृति की कहीं भी वह अपने इस वर्णन क्रम में किसी का पक्षधर नहीं जान पड़ता। लोगों का भोलापन हो या उनकी चतुरता दोनों ही वर्णन के लिए रेणु जी ने उनके संवाद का सहारा लिया है जिसमें कि उनके पात्रों का चित्रण खुद-ब-खुद पाठकों के समक्ष कुशलतापूर्वक हो

जाए। और इस संवाद का उन्होंने माध्यम भी अपने पात्रों के अनुसार भिन्न-भिन्न बोलियों को बनाया है। जैसे डॉ० प्रषान्त की भाषा शैली ही उसके योग्यता का परिचय दे देती है तो वहीं कुछ ग्रामीणों के संवाद हमें उनकी स्थिति से अवगत करा देती है। इस कारण यह कहीं नहीं लगता कि उपन्यासकार स्वयं की तरफ से कुछ प्रदर्शित करने का प्रयत्न कर रहे हो अपितु सब कुछ अत्यंत स्वाभाविक प्रभाव से बढ़ता जाता है। इसी कारण 'मैला आँचल' को न केवल आंचलिकता के क्षेत्रा में अपितु समस्त साहित्य जगत का श्रेष्ठ और सषक्त रचना माना गया है।

इस प्रकार इस उपन्यास में हमें समाज के धूप-छाँह, फूल और काँटों का मेल मिलता है इसी कारण रेणु जी कहते हैं कि—“कथा की अच्छाईयाँ हो या बुराईयाँ में किसी से अपना दामन बचाकर नहीं निकल पाया।” किन्तु इन्हीं विरोधों के सामन्जस्य से बना यह उपन्यास प्रतिकूलता में अनुकूलता की ओर इषारा करता है जो इस उपन्यास को अद्वितीय एवं आंचलिक उपन्यासों में सिरमौर का स्थान दिलाती है।

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## ایہام گوئی اور اردو شاعری

محمد راشد، ریسرچ اسکالر، کلکتہ یونیورسٹی

اردو شاعری میں ایہام گوئی کے اسباب و محرکات پر بحث کرنے سے پہلے یہ ظاہر کرنا ضروری ہے کہ ایہام کسے کہتے ہیں؟ دراصل ایہام ایک صنعت کا نام ہے۔ ایہام کا شمار محاسن کلام میں ہوتا ہے چنانچہ فن بدیع کی بیشتر کتابوں میں اس صنعت کا ذکر ملتا ہے۔ یہ عربی لفظ ہے جس کے معنی گمان اور غلطی کے ہیں۔ فن بدیع میں کی کتابوں میں اس لفظ کے لغوی معنی بھی دیئے ہوئے ہیں چنانچہ فارسی کی قدیم کتاب ”حدائق السحر فی دقائق الشعر“ مؤلفہ رشید و طواط (متوفی 1177ء) میں ایہام کے معنی ”بدگمان اقلندن“ بتائے گئے ہیں۔ فخری بن امیری نے (964ھ) ”ضائع الحسن“ میں ایہام کے لغوی معنی بھی بتائے ہیں اور اصلاحی بھی۔ یعنی شعر کی بنیاد کسی ایک لفظ پر ہو اور اس لفظ کے دو معنی ہوں ایک قریب، دوسرا بعید اور شاعر کی مراد بعید سے ہو۔

ایہام کی تعریف کے بعد اس کے اسباب و محرکات پر روشنی ڈالنا ضروری ہے۔ اس کے پیچھے بہت سارے اسباب و محرکات ہو سکتے ہیں۔ جیسے سیاسی، سماجی، اقتصادی، معاشی اور تہذیبی لیکن ان میں سیاسی اور سماجی محرکات اہم ہیں جسے تفصیل سے بیان کیا جا رہا ہے۔ کسی ملک کی تہذیب کے پیچھے سیاسی محرکات رونما ہوتے ہیں۔ سترہویں صدی اس تہذیب کا نقطہ عروج ہے اور اٹھارہویں صدی اس عظیم سلطنت کا زوال کے اسباب ہیں۔ وہ نظام خیال جس نے اس عظیم سلطنت کو جنم دیا تھا اب وہ قوت عمل اور آگے بڑھنے، پھیلنے کی صلاحیت سے محروم ہو گیا تھا اور اس لئے تاج محل والی تہذیب کی دیوہیکل عمارت کے ستون ایک ایک کر کے گرنے لگے تھے۔ اورنگ زیب عالمگیر کی وفات اس صدی کا پہلا اور سب سے اہم واقعہ ہے۔ جس کے بعد پچاس سال کے عرصے میں نااہل جانشینوں کی بے طاقتی، خانہ جنگی، عیش پرستی، اماء کی باہمی آویزش، عسکری قوت کی کمزوری اور سلطنت کے وسیع تر مفاد میں اتحاد کے جذبے کا فقدان نے اس وسیع و عریض سلطنت کو پارہ پارہ کر دیا۔ جب اورنگ زیب کی آنکھ بند ہوئی جانشین کی جنگ شروع ہو گئی اور بڑا بیٹا معظم کامیاب ہو کر بہادر شاہ کا لقب سے تخت پر بیٹھا۔ چار سال گزرے تھے کہ اس کا انتقال ہو گیا۔ اس کے بیٹوں میں لڑائی شروع ہوئی۔ اور اس کی لاش مہینوں تک ایسی ہی پڑی رہی۔ جہاں دارشاہ تخت پر بیٹھا۔ وہ شراب کا رسیا تھا۔ فیم کا عادی، عادات و اطوار میں نہ شاہانہ وقار تھا نہ توازن، دن رات عیش پرستی میں رہتا۔ طوائفوں کا دربار میں آنا جانا لگا رہتا تھا۔ ننگی ناچ ہوتی تھی۔ شراب و کباب چلا کرتا تھا۔ بادشاہ کے ساتھ ساتھ تمام امراء بھی اس میں ملوث رہتے تھے۔ اس کے بعد جتنے بھی بادشاہ آئے کم و بیش اسی طرح کے عادات و اطوار رکھنے والے تھے۔ ان میں فرخ سیر بھی بہت عیش پرست بادشاہ گزرا ہے۔ یہ بہت ظالم بادشاہ تھا۔ اس نے بہت لوگوں کو قتل کرایا۔ ان میں ایک مشہور شاعر جعفر زٹلی بھی ہیں۔ اس کے خلاف جو بھی کہتا وہ اسے قتل کروا دیا کرتا تھا۔

اس کے بعد جو بادشاہ تخت و تاج پر بیٹھا ہے وہ فرخ الدولہ بہادر شاہ کے پوتے جہاں دارشاہ کا بیٹا روشن اختر ہے جسے محمد شاہ کے خطاب سے تخت سلطنت پر تمکن کیا گیا۔ اورنگ زیب کی وفات کے بارہ سال بعد یہ چھٹا بادشاہ تھا۔ محمد شاہ جو عرف عام میں محمد شاہ گلیلا کے نام سے معروف تھا۔ 1748ء تک اس تخت پر بیٹھا رہا۔ اس کے دور حکومت میں ایوان ستون، ایک ایک کر کے گرتے گئے اور وہ اس زوال کو محض تماشائی بنا ”غرق مے ناب“ کرتا رہا۔ تقریباً تیس سال کے عرصے میں سارے برعظیم میں پھیلی ہوئی مغلیہ سلطنت بکھر گئی اس لیے اسے ”خاتم السلاطین بابر یہ“ کہا جاتا ہے۔

محمد شاہ رنگیلا کے عہد میں جتنے بھی امراء تھے وہ اس کے خلاف رہتے تھے۔ محمد شاہ رنگیلا بہت رنگین مزاج تھا۔ اس نے ایک بازار و عورت کو محل میں بٹھا دیا تھا۔ وہ بہت عیش پرست بادشاہ گزرا ہے۔ رات دن شراب نوشی اور عیش پرستی میں ملوث رہتا تھا۔ جب اس نے بازار و عورت کو محل میں جگہ دی اس وجہ سے معاشرے میں اس کا اثر بہت گہرا ہوا۔ اس وقت وہاں امرد پرستی اور جنسی رجحان عام ہوا۔ رنگیلا خود شاعر تھا۔ اس نے اپنے مزاج کے مطابق امرد پرستی کی شاعری کی۔ عاشق و معشوق کا زمانہ عنفوان شباب کا زمانہ ہوتا ہے۔ اس کا اظہار بہت عریانی اور فحاشیت کے ساتھ ابہام گو شعراء نے کیا ہے۔ اس وقت تمام لوگوں کا ذہن جنسی تلذذ کا شکار ہو گیا۔ اسی کے زمانے میں نادر شاہ نے دہلی پر حملہ کیا جب وہ حملہ کرنے والا تھا تو محمد شاہ کو یہ بات معلوم ہو چکی تھی۔ اس وقت اس نے کہا تھا کہ دلی ابھی بہت دور ہے۔ اور وہ عیش گوشی میں مصروف رہا۔ دیکھتے ہی دیکھتے نادر شاہ کی فوج دہلی میں داخل ہوئی۔ اور ہر طرف قتل و خون کا بازار گرم کیا۔ سارے معاشرے میں بے چینی اور بد حالی پھیل گئی۔ نادر شاہ کے حملے نے پوری دہلی شہر کو برباد کر دیا۔ بہادر شاہ رنگیلا کے آخری ایام میں احمد شاہ ابدالی بھی حملہ آور ہوا۔ اس نے بھی خوب تباہی مچائی، خوب لوٹا گھسوتا، رہی سہی کسر اس نے پوری کر دی۔ دلی پوری طور پر ٹوٹ چکی تھی۔

دلی کا حال بد سے بدتر ہو گیا۔ یہاں کی سماجی زندگی، معاشی زندگی، اقتصادی زندگی سبھی خطرے میں پڑ گئی۔ سماج میں ہر طرف برائی پھیلنے لگی، معاشی حالت خراب ہو گئی، نظم و نسق کی حالت دگرگوں ہو گئی، نظم و نسق کی حالت دگرگوں ہو گئی۔ سلطنت کا چراغ بجھتا ہوا نظر آ رہا تھا۔ جس کے جی میں جو آ رہا تھا وہ لوٹ رہا تھا۔ سماجی سطح پر انسانوں میں دوہرا پن آ گیا تھا۔ پورے معاشرے میں بناوٹی پن آ گیا۔ بڑے بڑے امراء اپنے کرتوتوں کو چھپانے کے لئے شرافت کا لبادہ اوڑھنے لگے۔ ان لوگوں کا کہنا تھا کہ بے پردگی نہیں ہونی چاہئے یہ صرف ان کی ماؤں، بہنوں اور بیبیوں کے لئے تھا۔ وہ سبھی دربار کے اندر رہتی تھیں لیکن عام عورتوں کے ساتھ یہ پردہ نہیں تھا۔ بڑے بڑے امراء جنسی تشنگی اور جنسی خواہش کے لئے بازار و عورت کو اپنے محلوں میں دعوت دیتے اور نگنی ناچ ہوتی تھی۔ عیش پرستی اور جنسی تلذذ سبھی کے ذہن میں بیٹھا ہوا تھا اس وجہ سے پورا معاشرہ اس رنگ میں رنگ گیا۔ ہر طرف عریانی اور فحاشیت بڑھنے لگی۔

ادب یا شاعری سماج کا آئینہ ہوا کرتا ہے اور شاعر سماج کا پروردہ۔ تمام شعراء اسی ماحول میں جی رہے تھے۔ چہاں طرف دورنگی کا منظر نظر آ رہا تھا۔ اسی دورنگی کو شاعروں نے اپنی شاعری کے ذریعہ بے نقاب کیا۔ تمام شاعر نے ساری فحاشی، بدنام معاشرے کو اپنی آنکھوں سے دیکھ رہے تھے۔ اسی معاشرے سے متاثر ہو کر شاعروں نے ابہام گوئی کا رواج عام کیا۔ انھوں نے اپنی شاعری میں معاشرے کی بد حالی کو ابہام کی شکل میں پیش کرنے کی کوشش کی۔

اب صورت حال یہ تھی کہ ایک طرف مغلیہ سلطنت کے زوال کے ساتھ فارسی زبان بھی کمزور ہوتی گئی اور دوسری طرف نئی نسل کے دل میں یہ بات بیٹھ گئی تھی کہ ہم کتنی بھی کوشش کریں ایرانیوں کے معیار فارسی تک نہیں پہنچ سکتے۔ اس لئے مناسب یہ ہے کہ ریختہ کا آئین اپنایا جائے۔ اس رجحان نے شمالی فضا کو ایسا بدلا کہ اردو زبان و ادب عوام و خواص کی معاشرت میں داخل ہو گئے۔ لیکن اس رجحان کی پیدائش میں جہاں ان سب عوامل نے کام کیا وہیں دکنی ادب کی روایت نے بھی شمال کی ادبی روایت کے لئے مضبوط بنیادیں فراہم کیں۔ اورنگ زیب عالمگیر کی فتح دکن کی بعد شمال و جنوب کے درمیان جو دیوار کھڑی تھی وہ دور ہو گئی تھی اور یہ دونوں علاقے گھر آگن ہو گئے تھے۔ فارسی کے مشہور شاعر ناصر علی دکن گئے تو وہ بھی دکنی اردو میں غزلیں کہنے لگے۔ میر، جعفر زبکی کی شاعری کے زبان و بیان پر دکنی ادب کی روایت کا اثر نمایاں ہے، فائز، بتلا آبرو، ناجی اوشاہ حاتم کے ”دیوان قدیم“ کی شاعری پر یہ اثرات نمایاں اور واضح ہیں، محمد شاہ کا دور آتے آتے ان اثرات کی آرجا کو تقریباً پون صدی کا عرصہ گزر چکا تھا کہ محمد شاہ کے دوسرے سال جلوس میں دیوان دلی پہنچا۔ یہ دیوان ریختہ میں تھا اور فارسی روایت کے عین مطابق حروف تہجی کے اعتبار سے ترتیب دیا گیا تھا۔ اس میں زبان تو اردو تھی لیکن بندش و تراکیب استعارات و تشبیہات کا حسن، لفظوں کا جماؤ اور استعمال کرنے کا انداز، سادگی و تازہ گوئی، مضمون آفرینی اور ابہام میں وہی دلکشی تھی جو فارسی شاعری کی طرح امتیاز تھی۔ ولی کی غزل صرف عورتوں سے باتیں کرنے تک محدود نہیں تھی بلکہ اس میں فارسی غزل کی طرح صوفیانہ و حکیمانہ اور اخلاقی مضامین بھی باندھے گئے تھے۔ اس میں غزل کے علاوہ دوسری اصناف سخن بھی تھیں۔ شمالی ہند کے شعراء کو اس دیوان میں اپنی تخلیقی

آرزوؤں اور اپنی شاعرانہ آدرش کا جلوہ نظر آیا۔ اس دیوان نے ذرا سی دیر میں آگ سی لگا دی۔ ہر محفل میں اس کے چرچے ہونے لگے اور ہر جگہ ولی کے اشعار پڑھے جانے لگے۔ قوال اور گویے بھی ولی کی غزل گانے لگے۔ مصحفی نے شاہ حاتم کے حوالے سے لکھا ہے کہ ”فردوس آرام گاہ (محمد شاہ) کے دوسرے سال جلوس میں دیوان ولی شاہجہاں آباد آیا اور اس کے اشعار چھوٹے بڑوں کی زبان پر جاری ہو گئے“ مرزا محمد حسن قتیلی نے بھی کلام ولی کی مقبولیت اور گلی کوچوں میں پڑھے جانے کی گواہی دی ہے۔

دیوان ولی نے شمالی ہند کی شاعری پر گہرا اثر ڈالا۔ اور دکن کی طویل ادبی روایت شمال کی ادبی روایت کا حصہ بن گئی۔ اٹھارہویں صدی شمال و جنوب کے ادبی و تہذیبی اثرات کے ساتھ جذب ہو کر ایک نئی عالمگیر روایت کی تشکیل و ترویج کی صدی ہے۔ اردو شاعری کی پہلی ادبی تحریک یعنی ایہام گوئی بھی دیوان ولی کے زیر اثر پروان چڑھی۔ ولی نے اپنی شاعری میں ایہام کا استعمال کیا ہے۔ جس کی مثال درج ذیل ہے:

اس کے رخسار دیکھ جیتا ہوں  
عارضی میری زندگانی ہے

رخسار اور عارض دونوں کے معنی ہیں گال۔ اس لئے عارضی لفظ سے ذہن عارض کی طرف جاتا ہے۔ لیکن یہاں شاعر کی مراد عارضی سے غیر مستقل ہے۔

اس طرح کے بہت سے اشعار ولی کی دیوان میں موجود ہیں۔ ان سب تہذیبی، سیاسی اور معاشرتی عوامل نے مل کر اس صدی میں اردو کو وہ رواج دیا کہ صدی کے ختم ہونے تک یہ برعظیم کی سب سے ممتاز زبان بن گئی اور اس کا ادب نہ صرف دوسری علاقائی زبانوں کے لئے ایک نمونہ بن گیا بلکہ سارے برعظیم میں اس زبان میں ادب تخلیق ہونے لگا۔

ولی کا دیوان آنے سے شمالی ہندوستان میں اردو شاعری شروع ہوئی۔ یہ کہنا کہاں تک درست ہے! ولی کی شاعری نے شمالی ہندوستان کی شاعری کو متاثر ضرور کیا لیکن اچانک پندرہ بیس سال میں اتنی بڑی تبدیلی لے آ سکتی ہے۔ یہ کوئی جادوئی چھٹری تو نہیں تھی۔ کہنے کا مطلب یہ ہے کہ ولی کے دیوان کے آنے سے پہلے وہاں پر ٹوٹی پھوٹی ریختہ کی شکل میں شاعری ہو رہی تھی۔ بلکہ اگر جعفر زکی کے کلام کو دیکھیں تو ایسا معلوم ہوتا ہے کہ آج کی شاعری ہے۔ اس سے قبل شمالی ہندوستان میں امیر خسرو نے ایک مصرع فارسی کا تو دوسرا مصرع دیوناگری میں کہا ہے۔ اس سے پتہ چلتا ہے کہ شمالی ہندوستان میں اردو میں شاعری ہو رہی تھی۔ لیکن کم کیوں کہ اس وقت وہاں کے شاعر فارسی میں شاعری کر رہے تھے۔ ولی کا دیوان آنے کے بعد ریختہ کی طرف متوجہ ہوئے۔ جو ریختہ نہ بھی کہنا چاہتے تھے ان شاعروں نے بھی ریختہ کی شکل میں شاعری کی۔

ایہام گوئی کے رواج کے سلسلے میں یہ بات قابل غور ہے کہ ہر ایسے دور میں جب محفل نشاط گرم ہو اور عیش و مستی کی طرف لوگوں کی توجہ مبذول ہو، الفاظ کے پہلو دار استعمال کی طرف ذہن منتقل ہونے لگتا ہے۔ اس کی دو وجہیں ہوتی ہیں: ایک اس وجہ سے کہ عشق و عاشق داخلی جذبہ کے ساتھ ساتھ ایک اجتماعی عیش و نشاط کا موضوع بن جاتی ہے اور میلے ٹھیلوں، مجلسوں اور محفلوں میں بھی زیر بحث آتی ہے۔ عشق کا بیباں رمز و کنابے میں مزہ دیتا ہے اور اس لئے پہلو دار الفاظ کا استعمال لامحالہ زیادہ ہونے لگتا ہے۔ دوسرے اس وجہ سے کہ ایسے دور میں جب محفلیں آباد ہوں اور اجتماعی زندگی کا راگ رنگ ہر طرف بکھرا ہوا ہو، ضلع جگت اور دو معنی الفاظ سے پھبتی، کنایہ اور بدیہہ گوئی میں لطف پیدا ہو جاتا ہے۔ عمدۃ الملک امیر خاں انجام اور برہان الملک کا جو لطیفہ ”صاحب“ مفتاح التوارخ نے نقل کیا ہے اس میں:

نواب آئے ہمارے بھاگ آئے

”بھاگ“ دو معنوں میں استعمال ہوا ہے ایک خوش قسمتی دوسرا شکست کھا کر بھاگ آنے کے معنی میں۔

ایہام اور صنعت گری زبان کے سن بلوغ تک پہنچنے کے لئے پہلے کی منزل ہے جہاں الفاظ کی اہمیت اور معنوں قدر و قیمت کا احساس نمایاں ہونے لگتا ہے۔ اور ناہمواری اور شتر گری کے بجائے ربط کلام اور مناسب الفاظ کی طرف توجہ مبذول ہوتی ہے۔ اردو کی

نشوونما میں ایک ایسی منزل آئی جہاں اسے لسانی طور پر چھان پھٹک کی ضرورت محسوس ہوئی اور الفاظ کی مناسبت اور اور ان کے روابط اور متعلقات کا احساس بیدار ہوا۔ اردو میں یہ ضرورت ایہام گوئی کے دور میں کسی حد تک پوری ہوئی اور اس کی تکمیل لکھنؤ کے دبستان، شاعری نے کی۔ اس لئے ایہام گوئی کے رواج کے لئے محض ہندی ادب یا فارسی شاعری کے اثرات کو ذمہ دار قرار دینا صحیح نہ ہوگا بلکہ اس کی ترویج میں جہاں یہ دونوں اثرات کسی حد تک شریک تھے وہاں خود ریختہ کی نئی شاعری کا تقاضا یہ تھا کہ اس کا شعری اور لسانی پیکر تراشنے کے سلسلے میں الفاظ کی معنوی اور اضافی اہمیت کا احساس پیدا ہو۔ اسی احساس کو اس دور کے مجلسی زندگی اور عشق و عاشق کے ہنگاموں نے تاریخی بنیادیں بخش دیں، اور شاعری صنعت گری کے چنگل میں پھنس گئی۔ ان عوامل کو اردو شاعری کے پہلے دور کے ایہام گوئی ہونے کا سبب بتایا جا سکتا ہے۔

ایہام کے بارے میں مختلف لوگوں نے اظہار خیال کیا ہے۔ ایہام کی مقبولیت کا ثبوت اس دور کے تمام شعراء کے کلام میں بھی ایہام کے نمونے مل جاتے ہیں جنہوں نے ایہام گوئی کے خلاف علم بغاوت بلند کیا مثلاً حاتم، مرزا، مظہر، سودا، میر وغیرہ۔ اس کے علاوہ ایہام گوئی کی مقبولیت کا ایک ثبوت یہ بھی ہے کہ محمد شاہی دور کی بیاضوں میں جو کلام جمع کیا گیا ہے اس میں بھی ایہام کی مثالیں زیادہ ہیں۔ اس میں شک نہیں کہ جن شعراء نے ایہام گوئی کے ذریعہ شعریت اور تغزل کو مجروح کیا ہے ان میں آبرو، ناجی، مضمون بٹ اور حاتم اہم ہیں۔ ان لوگوں نے ہی ایہام گوئی کی روایت کو عام کیا لیکن بعد میں حاتم اس سے الگ ہو گئے۔ اور انہوں نے اپنے دیوان کو صاف ستھرا کیا۔ اور اس کا نام ”دیوان زادہ“ رکھا۔ لیکن اس سے قبل وہ بھی ایہام گوئی میں شاعری کیا کرتے تھے۔ شاعری کی بے ساختگی اور جذبات نگاری کے راستے میں جب صنعت گری اور آرائیگی حائل ہو جاتی ہے تو اس کی تاثیر اور لطافت میں کمی آ جاتی ہے۔ یا ذہن جذبے اور احساس کے بجائے الفاظ کے دروبست میں الجھ کر رہ جاتا ہے۔ لیکن اس کا دوسرا پہلو بھی نظر انداز نہیں کرنا چاہئے۔

ایہام گو شعراء نے الفاظ کے پیکر تراشنے میں نمایاں حصہ لیا ہے۔ ایک لفظ کی معنوی حیثیت میں کتنا تنوع ہو سکتا ہے۔ وہ بیک وقت کتنے مفہوم ادا کر سکتا ہے اور کتنے پہلوؤں کو سمو سکتا ہے، محاورہ کا جزو بن کر کس طرح اس میں معنوی تبدیلی آ جاتی ہے اور الفاظ کس طرح دوسرے الفاظ سے مربوط ہو کر اپنے معنی تبدیل کر سکتے ہیں، ان لطیف نکات کی طرف جس طرح ایہام گو شعراء توجہ کی اس سے قبل نہیں کی گئی تھی۔ ایہام گو شاعر کے نزدیک لفظ گنجینہ معنی طلسم کی حیثیت رکھتا ہے جس سے مختلف آوازیں اور مختلف معنی پیدا ہوتے ہیں۔ لفظیات کا نیا ادراک زبان اور ادب کے ابتدائی دور میں ایک بڑی خدمت کی حیثیت رکھتا ہے۔ ایہام گوئی کی چند مثالوں پر غور کرنے سے یہ بات اور بھی واضح ہو جائے گی:

یہ شعلہ عشق کا حسن ازل کا نور ہے گویا  
جلا ہے جب سے سینا تب سے کوہ طور ہے  
آبرو، لفظ کا معنوی تنوع  
نظر آتا نہیں وہ ماہ رو کیوں  
گزرتا ہے مجھے یہ چاند خالی  
مضمون۔ لفظ کے کئی پہلو  
دیکھ تجھکو کہیں گے سب مورکھ  
تم اپنی بات کے راجہ ہو پیارے  
ناجی۔ لفظ کے کئی پہلو

آخری دونوں اشعار میں لفظ کے کئی پہلو سامنے آئے ہیں۔ خالی کا لفظ بہ یک وقت تعمیر دیدار کے معنوں میں بھی استعمال کیا گیا ہے۔ اور ذی تعدد کے معنوں میں بھی۔ اسی طرح مورکھ ہندی میں بیوقوف کو کہتے ہیں۔ اور وفارسی میں بال کے معنی میں استعمال ہوتا ہے اس

طرح مورکھ کے معنی ہو سکتے ہیں کہ بال بڑھاؤ، اسی طرح سوائی زیادہ ہونے اور سوا ہونے کو کہتے ہیں۔  
اور جے سنگھ سوائی جے پور کا مشہور راجہ تھا۔ ان تین مثالوں کے تنوع پر غور کیجئے۔ ایک میں لفظ لغوی معنی اور بول چال کے  
معروف معنوں میں استعمال ہوا ہے۔ اور مورکھ ڈولسائین کی مثال ہے جس میں ایک معنی فارسی سے لئے گئے ہیں اور دوسرے ہندی  
سے۔ تیسرے میں لفظ کے معنی اور تاریخی تلمیح کے تعلق کی بنا پر ایہام پیدا ہو گیا ہے۔

مجاورہ کسی طرح الفاظ کے معنی کو بدل دیتا ہے۔ اس کی مثالیں بھی ایہام گو شعراء کے ہاں کثرت سے ملتی ہیں۔

فلک نے جس کوں دیکھا جگ میں یکتا  
کیا تیغِ ستم سے اوسکے تئیں دو  
آبرو

کبھو آنکھیں بھر آتی ہیں کبھو جی ڈوب جاتا ہے  
خوبوں کو جانتا تھا گرمی کریں گے مجھ سوں  
مضمون

کیا فردا کا وعدہ سرو قد نے  
قیامت کا جو دن سنتے تھے کل ہے  
ناجی

بعض جگہ ایہام صرف الفاظ کی ظاہری شکل و صورت اور املا کی مدد سے پیدا ہو گیا ہے۔ مثلاً  
نازک پنپے پہ اپنے کرتے ہو تم غروری  
موسیٰ کمر سے اپنی فرعون ہو رہے ہو  
آبرو

رابطہ الفاظ اور ترتیب کلام سے بھی ایہام پیدا کیا گیا ہے۔ اور اس سلسلے میں اس دور کے شعراء نے مختلف ترکیبیں استعمال کی  
ہیں۔ کہیں ترکیب کلام کسی ایک لفظ کی مناسبات سے عبارت ہے۔ کبھی ایک شے یا تصور کو کسی چیز سے تشبیہ دی گئی ہے اور پھر اس تشبیہ کی  
مناسبت سے پوری تصویر مرتب کی گئی ہے۔ اس طرح تشبیہ در تشبیہ اور استعارہ در استعارہ سے وہ کیفیت پیدا ہو گئی ہے جسے لکھنؤ کے  
شعراء نے رعایت لفظی کی شکل میں کمال تک پہنچایا۔  
ترتیب کلام کے لحاظ سے معنی میں تبدیلی:

خدا وندا اٹھا دے درمیان سین بجر کے پردے  
ہمارے دام میں صیاد کر لیا یا ہمیں پردے  
آبرو

ریختہ اس کو ہوا جادو مرا  
سبز جامے سے میرے من کو ہرا  
بلند آواز سے گھڑیاں کہتا ہے کہ اے غافل  
کئی یہ بھی گھڑی تجھ عمر سے اور تو نہین چیتا  
ناجی

صائب کے طرز میں ایک مصرعے میں دعویٰ اور دوسرے میں حسن تعلیل سے اس دعوے کا ثبوت پیش کرنے کا انداز بھی ایہام

گوئی کی ایک نمایاں خصوصیت ہے:

جسے ہو زیب ذاتی اوسکے تئیں ہے عیب آرائش  
کرے ہے بدنماں البتہ حسن ماہ کو گہنا  
آبرو

دیکھ ہم محبت کی دولت سے نہ رکھ چشم کرم  
لب صدف کے تر ہیں ہر چند گوہر میں آب  
ناجی

گرفتاری سے اس سرکشی کو آزادی میں ہرگز  
موے سے بھی نہ نکلے گا یہ طوق گردن اے قمری  
مضمون

فائز کا ذکر کئے بغیر ایہام گوئی کی تاریخ ادھوری رہ جائیگی۔ انھوں نے بھی اپنی شاعری میں ایہام گوئی کا استعمال بہت زیادہ کیا ہے۔ اس لئے یہ ایہام گو شاعر کے نام سے جانے جاتے ہیں۔ آبرو اور فائز میں یہ کہنا دشوار ہے کہ دونوں ہمعصروں میں کس کی غزلیں کس کے پیش نظر تھیں لیکن ظاہر ہے کہ آبرو ایہام گوئی کی تہ داری اور فنی پختگی کی بنا پر فائز کے مقابلے میں بہتر ہیں۔ ایک شعر میں دونوں ایک دوسرے کے بالکل قریب معلوم ہوتے ہیں۔

جب سچیلے خرام کرتے ہیں  
ہر طرف قتلِ عام کرتے ہیں  
فائز

نازنین جب خرام کرتے ہیں  
تب قیامت کا کام کرتے ہیں  
آبرو

فائز کے یہاں رعایت لفظی کا استعمال زیادہ ملتا ہے۔ جیسے:

چودھواں اس چندر کا سال ہوا  
جس میں بدرِ با کمال ہوا  
فائز

وحشت اے آہوئے حرم مت کر  
رام ہونا براں سوں رم مت کر  
فائز

اس کے ساتھ ساتھ ایہام گوئی کی ایک اور تاریخی خدمت کو پیش نظر رکھنا ضروری ہے، ایہام اور رعایت لفظی کی وجہ سے اس دور کی شاعری میں بعض تاریخی تلمیحات، سماجی حوالے، لباس، میلے ٹھیلے، نشست و برخواست، عام گفتگو کے انداز، محاورے، عام روایتیں اور اصطلاحیں نظم ہو گئیں۔ یوں تو تاریخ اور معاشرتی اصطلاحیں اور جملکیاں بعد کے دوسرے شعراء کے کلام میں بھی ملتی ہے۔ لیکن یہاں فرق یہ ہے کہ ایہام گوئی کی بدولت یہ حوالے اپنے دوسرے متعلقات اور مناسبات کے ساتھ آئے ہیں اور اس لئے زیادہ واضح ہو گئے ہیں۔

حاتم کا شروع میں ایہام گوئی کی طرف رجحان تھا لیکن جب اس صنعت کی خرابیوں کا اندازہ ہوا تو اپنے کلام کا انتخاب کر کے ایک

مختصر مجموعہ تیار کیا اور اس کا نام ”دیوان زادہ“ رکھا۔ انھوں نے اپنے کلام کو ایہام سے پاک کیا۔ ترک ایہام گوئی کی طرف اشارہ کرتے ہوئے کہتے ہیں

یہ دل کب عشق کے قابل رہا ہے  
کہاں اس کو دماغ و دل رہا ہے

انعام اللہ خاں یقین وہ پہلا شخص ہیں جنہوں نے نئی شاعری کے رجحانات کو اردو شاعری میں اس طور پر برتا کہ دوسرے شعراء کو اپنی تخلیقی صلاحیتوں کا مستقبل اسی رنگ سخن میں نظر آنے لگا۔  
مصحفی نے لکھا ہے کہ:

”ایہام گو یوں کے دور میں جس شخص نے صاف و پاکیزہ ریختہ کہا وہ یہ جوان تھا۔ اس کے بعد دوسروں نے اس کی پیروی کی جیسا کہ وہ خود کہتا ہے:

حق کو یقین کے یارو برباد مت دو آخر  
طرزیں سخن کے اس کی تم نے اڑیاں ہیں“

یقین کی غزل میں لطافت و شائستگی کے ساتھ ایک شگفتگی و شیرینی کا احساس ہوتا ہے۔ یہ شاعری وصف و حسن محبوب تک محدود نہیں ہے بلکہ عشق کے تجربے کو بیان کر رہی ہے۔ یقین کی غزل میں فارسی غزل کی طرح اہتمام کے ساتھ بات کو سجا کر بیان کرنے کی کوشش کا پتہ چلتا ہے۔ الفاظ نہایت ہی سادہ ہیں جس سے شعر میں سادگی کا احساس ہوتا ہے

اگرچہ عشق میں آفت ہے اور بلا بھی ہے  
نرا برا نہیں یہ شغل کچھ بھلا بھی ہے

ان کے اس شعر کو پڑھنے کے بعد یہ اندازہ ہوتا ہے کہ وہ سادگی بیان کی طرف مائل تھے۔ اس دور کے مزاج میں چونکہ غم و الم کی لے، پساپیت، بے یقینی اور گہری افسردگی کا اثر موجود تھا۔ اس لئے یہ اثر اس دور کے ادب میں بھی سرایت کئے ہوئے ہے۔ مضطرب، منتشر اور نڈھال معاشرے کی روح زخموں سے چورتھی۔ طوفان نے اسے ہر طرف سے گھیر کر زندگی اور موت کے فرق کو مٹا دیا تھا۔ میر اور درد کی آوازیں اس کیفیت کی ترجمان ہیں:

زندگی ہے یا کوئی طوفان ہے  
ہم تو اس جینے کے ہاتھوں مر چلے

(درد)

موت اک ماندگی کا وقفہ ہے  
یعنی آگے چلیں گے دم لے کر

(میر)

طوفانوں کی زد میں آیا ہوا یہ معاشرہ ایک ایسی منزل کی تلاش میں تھا۔ جہاں اُسے سکون میسر آسکے۔ تصوف نے اس دور کو اپنے آغوش میں لے لیا۔ جس کی گود میں زخمی انسانیت نے ذرا اطمینان کا سانس لیا۔ تصوف اس دور کی بھنگی اور عرفان ذات کا راستہ دکھایا تھا۔ اسی طرح اس دور میں تصوف نے زخمی روح کو امید کی روشنی دکھائی۔ اس دور میں تصوف نے بے عملی کا فلسفہ حیات نہیں تھا۔ بلکہ با معنی و با مقصد طور پر زندہ رہنے کا نیا حوصلہ دینے کا وسیلہ تھا۔ یہی سبب ہے کہ غم و الم کے ساتھ بے ثباتی دہر، فنا اور تصوف کے دوسرے نکات بھی شاعری کے عام موضوعات بن گئے۔ جنہیں میر اور سودا نے اس طور پر پیش کیا کہ ان کی آواز میں سب کی آواز شامل ہو گئی۔ میر نے سادہ گوئی کی طرف خاص توجہ کی۔ انھوں نے بیشتر اشعار سادہ کہے ہیں۔ انھوں نے دہلی کو اجڑتے ہوئے اپنی آنکھوں سے دیکھا۔ انھیں جہان کہیں بھی

کھلتے ہوئے پھولوں کے مناظر دیکھنے کو ملتے تھے وہاں انھیں اب خزاں کا موسم نظر آتا ہے۔ دہلی پوری طور پر تباہ و برباد ہو چکی تھی۔ انھوں نے اپنے خیال کو اس طرح پیش کیا ہے:

شہاں کہ کحلِ جواہر تھی خاکِ پا جن کی  
انھیں کی آنکھوں میں پھرتے سلائیاں دیکھیں

میر اپنی شاعری میں ایسے الفاظ استعمال کئے ہیں جو عام بول چال کی زبان ہے جیسے:

پتہ پتہ بوٹا بوٹا حال ہمارا جانے ہے

جانے نہ جانے گل ہی نہ جانے باغ تو سارا جانے ہے

میر کی شاعری میں سہل ممتنع کا رنگ دیکھنے کو ملتا ہے جو دیکھنے میں سادہ اور عام فہم ہوتا ہے لیکن اس میں گہرائی اور گیرائی دونوں کی

کارفرمائی نمایاں ہوتی ہے:

لے سانس بھی آہستہ کہ نازک ہے بہت کام

آفاق کی اس کارگہ شیشہ گری کا

میر کی شاعری نے سادہ گوئی کی تحریک کو آگے بڑھانے میں اہم رول ادا کیا جو بعد میں سرسید جیسی تحریک کے لئے راستہ ہموار

ہوئے اور اس کے بعد سادہ گوئی کی لہر بیشتر ادیبوں اور شاعروں کے دلوں پر چھا گئی۔ اور اس طرح سے سادہ گوئی کا رواج عام ہوا اور ابہام

گوئی ہیشگی کی نیند سو گئی۔





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## TOOLS AND WAYS OF DESIGNING INFORMATION SYSTEMS OF PUBLIC AND ECONOMIC ADMINISTRATION, LOCAL AUTHORITIES

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### ABSTRACT:

**This article contains educational news related to the development of information and communication technologies in Uzbekistan, educational technologies, basic guidelines for use in the system of local government.**

**KEYWORDS: Communication, e-government, information security, interactive government services, information technology, development, trends.**

### INTRODUCTION:

Uzbekistan is taking a number of measures to further develop information and communication technologies (hereinafter - ICT), in particular, through the official websites of public and economic administration, local government and government portals "Electronic Interactive services are being provided to the population and legal entities on the formation of the "government" system.

According to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated December 31, 2013 No 355 "On measures to introduce a system for assessing the state of development of information and communication technologies in the Republic of Uzbekistan" from the first quarter of 2014 Experts of the Center for e-Government Development and the Center for Information and Public Security of the Ministry of Information Technologies and Communications of the Republic of Uzbekistan (hereinafter - the Ministry) quarterly

introduction and development of ICT in public administration, local government The situation is being analyzed and rating assessments are being carried out.

The objectives of the rating assessment are to analyze the current state of ICT implementation in organizations, identify barriers, eliminate them and provide practical assistance in developing an action plan to improve efficiency, and then prepare priority proposals for the introduction and development of ICT.

As of the end of the second quarter of 2018, a total of 103 state and economic administrations, local public authorities (hereinafter - public authorities), including 47 public administration bodies, 42 economic management bodies and 14 local public authorities The status of the introduction and development of ICT was assessed.

The Guarantee Insurance Company has the highest rating among government agencies in terms of ICT implementation and development. (96.85 points out of 100). At the end of the second quarter of 2018, he scored 95.04 points and took 2nd place in the ranking of JSCB "People's Bank of the Republic of Uzbekistan". JSC "Uzbekistan Non-ferrous Metal Scrap, Waste Processing and Processing Plant" took the third place with 94.20 points, the average growth in the final indicators compared to the same period in 2017 was 9.80% formed.

Also, according to the results of the rating, the top five, the State Committee for Motor Roads of the Republic of Uzbekistan - 92.49 points (an increase of 6.43% over the

same period last year), as well as Uzpromstroybank ATB - 90.65 points (an increase of 22.71% compared to the same period last year) (Table 1).

The Council of Farmers, Dehkan Farms and Landowners of Uzbekistan took the last place in the ranking with a score of 12.53 points, while the results of the rating decreased by 19.48% compared to the second quarter of 2017.

Table 1. According To the Results of the Rating, the Top Five Government Agencies

Nº	Names of government agencies	2nd quarter of 2018	2nd quarter of 2017
1	Guarantee Insurance Company Joint Stock Company	96,85	96,45
2	People's Bank of the Republic of Uzbekistan JSCB	95,04	83,94
3	Uzbek plant for preparation and processing of non-ferrous metal scrap, waste	94,20	84,40
4	State Committee for Motor Roads of the Republic of Uzbekistan	92,49	86,06
5	Uzpromstroybank JSCB	90,65	67,94

The average rating in the second quarter of 2017 decreased from 70.73 points in the second quarter of 2018 to 68.22 points, while the decrease was 2.51% (Table 2).

Approved by the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated December 31, 2013 No 355 "On measures to introduce a system for assessing the state of development of information and communication technologies in the Republic of Uzbekistan" In accordance with the structure of the rating system for evaluating the effectiveness of the introduction

and development of information and communication technologies in the activities of local authorities, the official website and the provision of interactive public services, information systems, information resources and electronic document management, information security Information on the work done to ensure the availability of action plans for the introduction and development of information and communication technologies, the attitude of the state body to citizens' appeals, the state of implementation and development of ICT in state and economic management, local government Interdepartmental automated information system for receiving, processing and storage of borate NIS.UZ analyzes the quality and reliability of the information provided.

According to the results of the II quarter of 2018, due to the systematic violation of the deadlines for consideration of applications for the provision of interactive public services through the Single interactive public services portal (hereinafter - UIDXP), the official website and interactive There was a deterioration in the performance of public services (hereinafter - IDX).

In particular, the quality of public interactive services, introduced on the official website of the organization and IDX in accordance with the law and other regulations, has deteriorated, with an average score of 50 to 31, 44 (a decrease of 2.77% compared to the second quarter of 2017). In this regard, the analysis shows that the lack of a unit responsible for the implementation of ICT in government agencies or the involvement of qualified specialists is a major factor in the shortcomings associated with the effective introduction and development of information and communication technologies in organizations. "Teeth are appropriate.

Experts of the Center for e-Government Development provided quarterly information on the results of monitoring and evaluation of the effectiveness of the introduction and development of ICT for government agencies, which conducted a rating, and recommended to address shortcomings. In order to increase the effectiveness of work in this area, seminars and video conferences, distance learning on the effective implementation of ICT, the methodology of filling out the questionnaire are organized with the participation of responsible specialists of government agencies. There is an opportunity to exchange information by telephone and electronic forms with experts on issues related to monitoring and evaluation of the effectiveness of the introduction and development of ICT.

The results are regularly discussed in the Cabinet of Ministers of the Republic of Uzbekistan with the participation of officials of state and economic administration, local authorities, representatives of the Ministry, and instructions and recommendations are given to address the identified shortcomings.

The Decree of the President of the Republic of Uzbekistan dated February 4, 2015 No PF-4702 "On the establishment of the Ministry of Information Technologies and Communications of the Republic of Uzbekistan" adopted by the Ministry within its competence includes ministries, departments, companies, associations, local public authorities, as well as business entities and citizens. Heads of state and economic administration and local authorities are responsible for the timely and complete implementation of comprehensive ICT development programs, the introduction of "e-government" services and information systems, the results of evaluations, effective and interactive public services in industries and sectors of the economy. is personally responsible for the quality implementation. In

case of deficiencies in the implementation of the above indicators, it serves as a basis for considering the suitability of the heads of ministries, departments, companies, associations, large enterprises and associations, public authorities in the field.

In case of unsatisfactory organization of work on ICT by the state and economic administration, local authorities, the Ministry of Information Technologies and Communications has taken appropriate decisions on the activities of state organizations, which have been delayed. has the power to make a proposal for the imposition of a penalty or dismissal.

According to the Resolution of the Cabinet of Ministers No. 256 of November 22, 2005, the Regulation on the Procedure for Creating Information Systems of Government Agencies was approved. This Regulation defines the general requirements for information systems of government agencies, the requirements for the procedure for their creation, as well as the responsibilities of government agencies in the creation of information systems. Chapter V consists of 32 articles and Article 25 stipulates that "the work of public authorities in the information system using cryptographic means of information protection, including electronic-digital signatures, must be carried out in the manner prescribed by law."

The Ministry of Information Technologies and Communications of the Republic of Uzbekistan and the UNDP joint project "Improving the quality of public services through the development of e-government" have developed a manual "Agile approach to creating e-services: the British experience." The document is based on data from the UK Government Digital Service, published on the portal <https://www.gov.uk/service-manual>.

The manual focuses on Agile's methodology of compact software that is fundamentally different from traditional methods of manufacturing information systems. Agile is a set of values and principles for software development, according to which the software product is self-regulating and is formed step by step as a result of cooperation of a team of different specialists.

This guide provides methods for studying service users, principles for designing and developing e-services, and a project evaluation system for the introduction of online services in the UK. The text of the document is presented in the form of practical recommendations and instructions. The guide is intended for managers and specialists of government agencies providing e-government services, business analysts, independent experts, scientists and anyone interested in e-government.

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## ENVIRONMENTAL SAFETY ISSUES IN THE AVESTA

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### ABSTRACT:

**The article provides detailed scientific information on the religion of Zoroastrianism and its holy book "Avesto" on the environment, nature, conservation of wildlife, in general, the ecological views of ancient peoples.**

**KEYWORDS: Avesto, Zoroastrianism, Zoroaster, Ahuramazda, ecology, ecological education, fire, mazdoparast, fire, philosophical wisdom, love and respect for the blessings of contemplation.**

### INTRODUCTION:

From time immemorial, ecological culture has been a characteristic feature of the peoples of Central Asia. This is evidenced by ancient manuscripts and the works of our great scholars. They contain valuable insights into water, nature, plants, creatures, and their interactions, relationships, and more with the environment.

Although ecology was not formed as a science at that time, but at that time it was emphasized that nature and its natural balance, the importance of cleanliness, flora and fauna, the need to respect nature. They even considered nature, water, fire, wind, and other elements sacred. They were worshiped.

For example, the Avesto describes seventeen different types of water. It is said that the accumulation of all water ensures the existence of the body. Of course, each era had its own customs. One of the customs of the Zoroastrian period is the custom of "Sidranushlik". According to the custom, girls were sworn in at the age of 15 and boys at the

age of 17 in a specially sewn silk white dress of the believers. They swore by the name of their one god, Ahuramazda, next to Water and Fire. Those who took the oath in this case were never arrogant and did not betray their neighbor's trust. So, in Zoroastrianism, water, like fire, was a symbol of light, purity, life, growth.

They understood that the main task of God was to protect the water from impurities and to ensure its constant flow. That is why in their hotels there are frequent calls to keep nature and water clean, to preserve it, to save it. It reads: "A person is obliged to keep water, fire, earth, air, in general, everything in the world, the oil of purity, clean and tidy ... Anyone who violates the rules of respect for land, water, fire and air is sentenced to 400 lashes." will be done. "

Not only that, the monument has a lot of items that encourage the cleanliness, care and protection of water resources. In particular, in Vendidad, special attention is paid to the cleanliness of canals, ditches and pools. It is recommended to plant only protective shrubs on the banks of ditches, pools and wells, where drinking water flows, and the cultivation of fruit trees is strictly prohibited. Spitting in water, throwing weeds or leaves is a strong stain. If something dirty falls into a pool or well, it is recommended to resin it by filling it several times with clean water or rainwater. Only then was drinking allowed. Water sources are not allowed to wash various fabrics on or around the lips, to feed cattle, to tie camels and horses, to wash. If a mirab catches sight of someone taking water from a pool, well, or ditch with an unclean vessel, he is punished

with "25 lashes." Because water is sacred, it is not allowed to rob animals. For example, if a seagull is killed, there will be such a drought that the pastures will turn into barren deserts, and prosperity will be lost. Such a person is told in Vendidad that Zoroaster's dialogue with God - a question and answer - will be fined 18 points. "O Ahuramazda! What is the sin of the one who kills the seagull and what is the punishment for him ?!

Ahuramazda replied:

He must be beaten with a thousand lashes. Ten thousand gardens of firewood must be prepared for the campfire. Ten thousand pests can wash away their guilt by killing a snake."

It is also a great sin to catch fish, which are always purifying the water, and to catch individual aquatic animals.

In some fargards, the definition of fire water is quite strong, urging them to be careful when given side by side. "Zoroaster asked:

"Is it permissible for a Mazda worshiper to wash away his sins if he throws something polluting into water or fire?"

Ahuramazda replied:

No, the sin of such a person cannot be cleansed by anything, he will remain impure and sinful forever. Such a person is from Hell. He wants a boom in the coast, which will kill mosquitoes and locusts."

It is known that the Avesto is not only a sacred book of Zoroastrianism, but also a source of philosophical-social and natural-scientific ideas that serve the interests of all mankind. The great ideas and philosophical wisdoms expressed in this eternal book amaze us even today with their vital meaning.

Avesto's environmental ideas are one such viable idea. These ideas attest to the fact that the thinking of our distant ancestors was so high that the blessings of this thinking had a strong influence on the specificity of the

relationship between man and society. The ideas put forward in the book, including environmental teachings, still educate people today in the spirit of loving and respecting beautiful nature and its blessings.

The reader of the Avesto will be amazed by the songs praising the earth, nature and being. They are repeatedly told that the land is a great wealth, the essence of its fertility. It is noteworthy that the book states that if the land is not cultivated, if it is not "fed" and not irrigated, it will remain at its potential (as an opportunity). The Avesto emphasizes the need to maintain the potential of irrigation, fertilizers and tillage. "A land that has not been planted for a long time and has not been plowed is unfortunate," the book says. - He dreams of a hammer. Such a ground is a beautiful girl who has entered puberty. She wants to have a baby and a good pillow."

The interpretation of the doctrine through artistic means, that is, the likening of a fertile land to a beautiful girl and a farmer to an alpine young man, serves to strengthen the interest in the idea, to deepen man's understanding of the value of the land. "Whoever plows the land ... the land will bring him prosperity. She looks like a beautiful and pure girl. This girl goes into the husband's house and gives birth to children on her honest pillow in her bed. The earth also bears much fruit."

The Uzbek people's appreciation of the land and the creation of proverbs about it may be influenced by such ideas of Avesto. "Mother Earth", "husband + wealth", "The young man does not sell the land", "If the husband feeds the land, the husband feeds you". The roots of such blessings of the people's thinking go back to the Avesto. It is no exaggeration to say that the current level of agricultural culture of the Uzbek people is the result of the ability of our

ancestors to know the language of the land and use it wisely.

The Avesto calls on people to be faithful to the land, to consider water sacred, and to use knowledge to increase soil fertility. In particular, the teachings of the book on respecting the soil, keeping it clean, and using it wisely have preserved the community in our time. "For Zoroastrianism, polluting the soil is the worst evil. The earth was considered sacred. Therefore, the body was not allowed to be buried in the ground. The corpse was placed on special planks made of stone in places far away from the dwellings. It was eaten by dead birds in 2-3 days, the bones were left and it was thrown into a pit under a special tower called assuariy (bone) and covered with stone. They are a kind of tomb, called the Tower of Silence.

The Avesto also gives rules for where to build cemeteries and what trees to plant there. It was required to grow only shade trees in the cemetery, and to plant fruit trees at least 50 meters away.

In the sacred book of Zoroastrianism, water is interpreted as the source of life. In the "Khurshid Yasht" part of the book, water is described as equal to the sun. "O blessed waters! He exclaims. "We call on you for help. You are an example of mothers, caregivers like dairy cows, and you are better and happier than all the food."

In the Avesto, there are opinions about the differences between rivers, lakes, seas and springs. It is said that water is a healing drink that washes the creature and purifies it. The book contains the following inspiring verses about water:

Flowing waters are sacred,  
The springs are also sacred.  
Lakes and seas,  
All waters are sacred.

The ideas in these lines have educated people in the spirit of appreciating water and keeping rivers and canals clean.

Land, water and air pollution are prohibited in Avesto. Those who throw rubbish, garbage, or dead animals into the water are punishable by 100 to 200 lashes or large fines.

In the Vendidad section of the Avesto, the cause of various diseases in the human body is interpreted as pollution of the air, water, soil, and the spread of microbes. Therefore, people were required to keep and keep: pets, water, air, soil, food, fruits and vegetables, clothing, household items, shelters clean and tidy. Garbage and mosquitoes have been shown to be a source of microbial transmission. It was required to cover the litter with soil or sand and kill mosquitoes and water beetles. Those who adhered to such requirements were rewarded. Those who did not comply were punished.

The Avesto sets out the rules for keeping and caring for animals. For example, the person who killed a hunting dog was required to give 10,000 barsum (a unit of weight) of a plant leaf that lifts the human spirit.

Therefore, in the Zoroastrian book "Avesto" a lot of ideas about ecological education are put forward. For almost three thousand years, they have served the purpose of preserving, appreciating and keeping nature clean, in modern parlance, ecological education.

The ecological ideas of the Avesto were widespread among the peoples of ancient Greece, Rome, the Middle East and the Volga region in BC, and effectively influenced the development of scientific and religious ideas. The ideas of the book have left their mark on the traditions and ceremonies of our people's life. Some of them have survived to the present day. For example, in today's Uzbeks, sweeping

the yard and streets in the mornings and evenings during the summer months and sprinkling water is an expression of Avesto's commitment to keeping the land clean. The courtyards and streets, which are swept and watered in the morning, look beautiful, the mood of the person who sees such a scene rises, the spirit of the girl and the bride who swept and sprinkled water is thanked. Or another example: spreading fabrics given to women in cold ceremonies at home, lighting lamps for 40 days in rooms where babies are born, brides are taken, corpses are washed, the tradition of lighting fires at weddings is an expression of Zoroastrian ideas of killing germs and protecting human health.

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## PHONETICS IN RUSSIAN AND UZBEK

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### ABSTRACT:

**Phonetics is the lowest linguistic level, which provides the smallest constituent units for other levels. Phonetics studies speech sounds from three perspectives - physical (acoustic), physiological and social (functional, linguistic). Therefore, it has three types - acoustic, articulatory and functional.**

**KEYWORDS: Phonetics, Russian, sound, vowels, consonants, language levels.**

### INTRODUCTION:

When comparing the phonetic structure of the Uzbek and Russian languages, these three aspects of phonetics should be taken into account. These include:

1. Acoustic aspect. It examines the physical side of speech sounds - airflow fluctuations, pitch, power, timbre, shortness or length, the presence of sound and noise.
2. Articulatory aspect. In this case, the movement and state of speech sounds in the formation of speech sounds are studied.
3. Functional (linguistic) aspect. It explores the social role of speech sounds - their specific functions in the process of communication.

A phoneme is the smallest phonetic unit that distinguishes morphemes, words, and grammatical forms. For example, in Uzbek the meanings of the words bor and bor differ in the phonemes o and o in these words, and in Russian the meanings of the words luk and luk differ in the phonemes hard l and soft l'. The occurrence of phonemes in speech becomes sound. In this case, they can be pronounced with

different variations. For example, the i sound in the word idora is similar to the i in the Russian word iva, and in the word kir, it is pronounced differently, that is, closer to the Russian y sound. This means that phonemes can be pronounced differently according to their place of expression, that is, under the influence of their surroundings, but this does not lose their ability to differentiate words and phrases.

### MAIN PART:

Because speakers are usually able to distinguish phonemes, no matter how they are pronounced, zero sound is the only variant of the linguistic phoneme in speech. Phonemes form a specific system in each language and are compared to each other accordingly. There are 30 phonemes in modern Uzbek literary language, which are represented by 26 letters and 3 letter combinations, because the letter j in the Uzbek alphabet is both a mixed explosive consonant and a mixed syllable in compound words. Reflects the recipient consonant. The number of Russian phonemes is 42, which are represented by 31 letters of the Russian alphabet. (Both alphabets contain special characters. For example: tutuk in Uzbek alphabet, 'and symbols in Russian alphabet). This means that the phonemes in Uzbek and Russian differ both in their articulation and in their quantity. There are six phonemes in both Uzbek and Russian, which is a coincidence, of course. However, the number of consonants in Uzbek is 24, while the number of consonants in Russian is 36. This difference is determined by the fact that the Russian consonants are in conflict not only with the sign "loudness-

soundlessness", but also with the sign "hardness-softness". The vowels in Uzbek and Russian are very different. The Uzbek language has the following phonemes: a, o, i, e, u, o'. There are also six phonemes in Russian, which are: a, o, i, e, u, y. These vowels are classified threefold in both languages:

1. Depending on the level of language development (upper, middle, lower).
2. According to the presence of laboratories (laboratory, non-laboratory).
3. According to the horizontal movement of the tongue (front row, middle row and back row).

The signs of vowels according to the horizontal position of the tongue are not considered basic, because these signs change under the influence of their surroundings. The phonemes of both languages are compared separately below. Consonantal phonemes in Uzbek and Russian languages differ not only in quantity, but also in pronunciation and classification. For example, instead of being formed, Uzbek vowels are divided into three groups - lip consonants, tongue consonants and throat consonants, and in Russian - into two groups - lip consonants and tongue consonants. In Russian, the following consonants, which are in conflict according to the sign of resonance, form a pair:

Consonants: b, b', v, v', g, g', d, d', z, z', j

Consonants: p, p', f, f', k, k', t, t', s, s', sh (' sign indicates softness of sound). The remaining consonants (y, m, m', n, n', l, l', r, r') and consonants (x, ts, ch, shch) do not have pairs. In addition, voiced and unvoiced consonants in Russian also form a pair of contradictions in terms of hardness and softness:

Solid consonants: b, v, g, d, z, k, l, m, n, p, r, s, t, f, x, sh

Soft consonants: b', v', g', d', z', k', l', m', n', p', r', s', t', f', x', shch

(The sounds ts, j are always pronounced hard, while y and ch are always pronounced softly). This contradiction is not unique to Uzbek consonants. It is true that in the Uzbek language, sometimes consonants can change under the influence of their surroundings and become a little softer or harder, but this is only a combinatorial variant of them (consonants), which is characterized by a difference in meaning. does not have. Some consonants are pronounced almost the same in both Russian and Uzbek (m-m, n-n, r-r, s-s), but the pronunciation of most consonants is very different in these two languages. The differences between Uzbek and Russian consonants are as follows: Lab-lab consonants. In Uzbek, these consonants are not divided into hard and soft types. Consonants in Uzbek are pronounced softer than in Russian, and harder than soft consonants. For example, the hard consonants b, p, m are close to the Uzbek sounds b, p, m, but the soft consonants b', p', m' need to be more expensive in order to express them in speech. These sounds are pronounced longer than their hard pairs. Lab-tooth consonants. The difference between the Uzbek v, f and the Russian consonant v, f is also significant. In Russian, these phonemes belong to the group of lip-tooth consonants, the inner side of the lower lip is extended to the upper row of teeth to pronounce them. The consonants lab-tish v and f are found in Uzbek only in words borrowed from other languages: bus, wagon, football, factory and others. In the original Uzbek words, these consonants are formed only in the presence of them. Therefore, v in Uzbek does not sound like v in Russian when it comes at the end of a word or before a consonant: ov, suv, birov, jilov. The consonant f does not exist in the old Uzbek language, but occurs only in words borrowed from Arabic, Persian-Tajik and other languages, so this sound is sometimes replaced

by p in live speech: only-only, notebook-notebook, lantern-ponar style.

Consonants. The pronunciation of hard consonants d, t, z, s, r in Russian is almost the same as in Uzbek d, t, z, s, r. However, the phonemes d', t', z', s', r' do not exist in Uzbek. When pronouncing soft consonants d, t'z', s', the middle part of the tongue rises upwards. This is not the case when producing solid d, t sounds. As a result, the sound d is pronounced as dz, and t as ts, and z' and s' are relatively softer and shorter. The strict n in Russian is almost indistinguishable from the Uzbek consonant n: nor-nara, queue-nabat, kanat-kanat, and dovon-divan. However, the soft n consonant is unique to Russian, and the articulation of this sound is slightly different from that of the hard n consonant. When pronouncing a hard n, the tip of the tongue touches the upper cheek, when pronouncing a soft n, the tongue moves backwards and away from the gums, and the two sides of the tongue rise towards the hard palate: net, nelzya, Nina, nitka.

In both languages, the consonant l is a slippery, resonant sonorous sound. However, there are differences in the articulation of the sounds l, l, and l', which are manifested in the following ways: when pronouncing the hard l in Russian, only the tip of the tongue rises and touches the upper gum closer to the tooth. During the pronunciation of the soft l, the shoulder of the tongue also rises and the tip of the tongue touches the upper part of the gums. Accordingly, these two consonants have the sign of hardness and softness, creating a contradiction between them. In Uzbek, l is a consonant sound between hard l and soft l in Russian.

## **CONCLUSION:**

The Uzbek consonant sh is between the Russian consonant sh and shch in terms of hardness and softness. Therefore, the consonant shch in Russian words is sometimes translated into Uzbek as sh (shchavel-shovul), sometimes ch (shchëtka-brush), and in some words shch (meshchane-meshchanlar). . The consonant j in Russian is pronounced in Uzbek as a sliding j consonant in words borrowed from other languages (dragon, conscience, magazine): jizn, jajda, Jora. The Uzbek word chicken and the mixed explosive j in the words jora are not found in Russian. The consonant Ts is unique to the Russian language and does not have a letter in the modern Uzbek alphabet. Due to the fact that such a sound is not typical of Uzbek speech, until the beginning of the XX century in Russian words it was pronounced as ch sound (church-church, tsarist tsarism). Later, along with the Cyrillic alphabet, the consonant j, sh in the letter w in it is always rigid, and in any case it retains its rigidity without being affected by the sounds that are close to it. The pronunciation of the phoneme ch (ch), which exists in both languages, is almost the same: chayla-chay, chora-chyorny, soch-noch. Ch in Russian is a soft sound and it retains its softness even in the presence of any sounds.

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## **AUTHOR'S SPEECH AS WELL AS RELIGIOUS WORDS AND PHRASES IN MUHAMMAD ALI'S HISTORICAL NOVELS**

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### **ABSTRACT:**

**This article discusses the author's speech as well as religious words and phrases in Muhammad Ali's historical novels.**

**KEYWORDS: author's speech, character's speech, linguistic view of the world, historical words, narrative style, religious words and phrases.**

### **INTRODUCTION**

As long as a person lives in a society, he lives, thinks, acts under the influence of an ideological being that is a priority in the life of the society. It is safe to say that the depiction of reality in historical works, taking into account the ideology of the time, is one of the conditions for ensuring its vitality, a convincing interpretation of the activities of the heroes. One of the main conditions for convincing the reader in the writings about the past life, to satisfy his artistic and aesthetic needs is to accurately depict the historical environment and reality. In other words, it is important for the author to ensure that the protagonists, as well as the reader, begin to live in "... the artistic reality created through the elements of language." The existing ideological legacy, which is reflected in the speech, thoughts, actions of the protagonists, is expressed through words and phrases that are specific to him.

Archaic words have a special significance in historical works. "... if the authors of the

work used too many words and phrases typical of that period, which are still considered archaic, in order to preserve the color of that period, the modern reader would not be able to master these works, and therefore the impact of these works would be reduced. On the contrary, when the authors expressed the events of the distant past in words and phrases used today, the color of the historical period would not be noticeable, and therefore, even in it, would undermine the artistic influence of the work. So, in this regard, as noted in the literature, it was very important that writers find a certain norm. The correct definition of such a normative gap in the author's speech is a characteristic feature of the well-known writer, author of historical works Muhammad Ali's tetralogy "Sarbadorlar", "Ulug Sultanat" - historical novels. While some of the archaic words in them merge into one nest with some of the spiritual groups in the historical word system mentioned above, most of them consist only of words in another spiritual group, the nest, which is different from the use of historical words. Also, while some of the archaic words are equivalent to their modern language meanings, most of them have some degree of semantic change.

### **MAIN PART:**

The active use of lexical units and expressions related to the Islamic concept in the novels of Muhammad Ali is also directly related to this point. The first novel of the

tetralogy was originally described in convincing episodes as the protagonist Amir Timur's lifestyle, attitude to life, beliefs, as well as the prelude to his success, at the same time, the main factor is the Islamic worldview. We consider the importance of religious words and phrases used in the author's speech in the example of some of the episodes described in the first sections of the first chapter of this section.

Drawing a portrait of the great Temurbek in the first pages of the first book of the tetralogy "Ulug Sultanat", the author says that there is some charm and magic in his voice, "When the Qur'an was revealed, his voice was as juicy and pleasant as that of famous poets" (U.s. -1 : 10) clamps the sentence. From a pragmatic point of view, this statement paves the way for a vivid, convincing narration and acceptance of subsequent episodes, in general, the events in the plot system of the work, in the context of the author-reader relationship. As stated in the linguistic literature, "... a speech act is a linguistic address of the speaker to the listener in a certain environment, for a specific purpose", the idea of the speaker (writer) to the listener (reader) through the novel is revealed one after another in the following pages. It should be noted that the words "Qur'an" and "qori" in the sentence are of an initial deictic nature. If the Holy Qur'an indicates that the protagonist has programmed the main book of Islam and the theoretical and practical realities related to it for his life and activity, the lexeme "qori" means that this vital principle is imprinted on his heart and memory. In the following pages, the situation of the Sahibkiran, who observed himself in a dream, is noteworthy: "My face is prostrating and asking Allah for salvation, who listens to the cries of the poor." (U.s. -1: 13) The words in this sentence are not expressed verbally according to their semantic connection, but

refer to the essence that is understood through the subtext under the text. The above-mentioned source of the Qur'an verbally confirms that Temurbek, who prostrated before Allah, listened to the cries of the poor. The expressions of asking for salvation and bowing down to prostration confirm that he is one of the poor who is listened to, the owner of power and conquest that shook the world, a great master, but a weak servant before the Creator, and he confesses it with all his being.

Throughout the text, we read: "Temurbek woke up ... The clerk prepared water, Temurbek took ablution and washed. Then he wrote a velvet prayer in the tent and began to perform the morning prayer. He then prayed to Allah for a long time, believing that the Creator was the only support for Muslims; He prayed earnestly for the prophets and saints, wishing them success in their endeavors. He could not estimate how long he sat. Suddenly, between half-sleep and half-wakefulness, he disappeared: "Temurbek! May victory be with you!" (U.s.-1:13)

The anthroponym "Temurbek", which means a historical figure, and "May Fathu Zafar be with you!" the citation serves as a reference to the ideological, ideological foundations of the maze realities (i.e., the triumph of the master) that are now known to the whole world, while at the same time serving to ensure the vitality and reliability of subsequent images associated with their emergence.

"Makkai Mukarrama, the respected leader of the Naqibs, the great, the noble, did not announce or promise before the arrival of Mir Sayyid Baraka. Temurbek later saw that his arrival was as sharp as a death sentence, but how viable it was. Wherever he went, he stopped in amazement!" (U.s. -1: 22.) In the first sentence of this passage, we see that religious words and phrases, combined with words of historical and archaic color, are a

means of clearly embodying the spirit and environment of the past. Makkai Mukarrama (qibla of the Islamic world), naqib (great lineage, ie descendant of the Prophet), murtazai a'zam (greatness of those who abstain from riyaa, i.e. great pir) the name (hence the historical word) Mir Sayyid Baraka, a compound verb that did not promise to have an archaic color, reinforced the historical accent in this passage. This aspect is even more vividly expressed in the following sentences: "Sheikh Shamsiddin, the piri and teacher of Temurbek Padar Buzrukvori, the qibla of the Muslims, was holding the skirt of a potter. Recently, Hazrat - the mystery of Jerusalem - passed away and handed over his deposit to its owner. The Lord is gracious, incomparably merciful, and always eats the sorrows of His servant. Temurbek still believes in it. Here, the blessed Mir Sayyid Baraka himself delivers to the future of Temurbek. He will now turn to Mir Sayyid Baraka." (U.s.-1: 22.)

#### **CONCLUSION:**

Thus we are convinced that the historical, archaic and religious words and phrases formed by various paradigms in the text of the novel complement and interpret each other both in meaning and form, and serve to perfect the linguistic landscape of the period.

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## LOMBARD MICROCREDIT ORGANIZATION: ITS CONCEPT AND ITS IMPORTANCE TODAY

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### ABSTRACT:

**This article covers the main place of small business and business in today's market economy. Including scientifically analyzed the development of small business and business, and the legal basis, at this time financially support small business and business, the latter is amended and the rules for this branch of national legislation are added.**

**KEYWORDS: Mini business, pawnshop, businessmen, credit, private property, bank, state, family, economy, money, syllable, debt, physical person.**

### INTRODUCTION:

Pawnshops - provide short-term (for a period not exceeding three months) loans to citizens, pledging movable property for personal consumption in the form of a mortgage.

The pawnshop has the right to carry out work with precious metals and precious stones on the basis of a registration certificate issued in the manner prescribed by law.

The pawnshop concludes contracts with citizens upon presentation of a passport or other identity document.

The property received by the pawnshop may be returned to the owner after all payments due to the pawnshop have been reimbursed.

A pawnshop shall not have the right to use and dispose of pledged or stored items.

The emergence of the first pawnshops, in the modern sense of the word, is associated with the establishment and stable operation of a financial institution in 1462 in Perugia, Italy, which lends money in exchange for property collateral. This institution was founded by the French monk Barnabe de Terni. In order to resist the scams of money changers, he organizes fundraising for the construction of a charitable bank. The offer was successful, and on the basis of the money raised, an interest-free lending office called Mont di Pieta was opened. Sometime later, as a result of the efforts of the churches in areas of Italy such as Savoy Mantu and Florence, similar social institutions with interest-free small lenders were opened. At the end of the 15th century, "mont di pieta" was opened by French monks in almost all regions of Italy, and the name became a common term for this type of activity. At the same time, a small percentage (6% per annum) is set for the cost of maintaining these structures.

### MAIN PART:

The word "pawnshop" originated as a common name for a commercial enterprise. The Lombardi family (the surname is derived from the Italian region of Lombardy, where the family was born) first opened a loan office in

France and later in England, the Lombardi House, and as a result successfully established dozens of such enterprises in many European countries. At the time, even royal families were reported to have become customers of the Lombardi house. In particular, King Edward III of England was considered a client of this house. Queen Isabella of Spain has pawned her diamond jewelry to finance Columbus's trip to America.

In general, the mass acquisition of social pawnshops took place only in the early sixteenth century, and their daily increase in the seventeenth and eighteenth centuries. Although many municipal pawnshops operated as credit institutions by their very nature, they differed significantly from such structures in medieval Europe. If in the Middle Ages the debt was taken only for non-productive, non-profit purposes (excluding commercial operations), such as the Crusades or the construction of a church, then pawnshops served as "institutions of social support". Their task was to save the townspeople from starvation or homelessness. With the help of small debts on a mass scale, pawnshops were able to save society from minor evils: fraud or looting.

Today, in practice, to improve the legal framework for the provision of microcredit, microcredit, microleasing services, to develop a framework for the legal regulation of financial services provided by microcredit organizations, pawnshops, to create legal mechanisms to ensure the rights and interests of microfinance users and small businesses and the poor. Research is underway to determine the legal framework for increasing access to financial resources. In particular, there is research on the development of effective means of attracting investment in the market of financial services of microcredit organizations, the use of self-government methods in microfinance,

the development of the legal framework for microcredit organizations, the formation of microcredit organizations to issue corporate bonds.

There are currently 55 pawnshops in the country. As of January 1, 2019, the assets of microcredit organizations amounted to 353.6 billion soums, and in pawnshops - 108.7 billion soums.

Amendments and additions were made to the Regulations on the procedure for licensing the activities of pawnshops, approved by the Resolution of the Board of the Central Bank of the Republic of Uzbekistan dated September 22, 2003 No 23/3.

According to him, an amendment was made to invest 500 million soums in the charter fund to open a pawnshop microcredit and obtain a license. As a sign of the activity of pawnshops, the storage and liability, the maintenance and sale of non-refundable collateral is the establishment of a special organization and the establishment of uniform lending conditions for all.

Currently, the activity of pawnshops in the world is developed in almost all countries. In economically developed countries, pawnshops are so widespread that their activities can be considered as a special branch of financial divisions. In essence, the principles of pawnshop operations (lending of personal movable property through collateral through appropriate insurance) are the same everywhere, but the differences may be noticeable within the restrictions set by law established by local public authorities. For example, in all countries, the law sets a grace period for lending, which can last from a few days to 3 months. In some countries, limits are set for high interest rates on loans.



**CONCLUSION:**

Pawnshops as a non-bank microcredit organization are organizations that specialize in short-term microcredit and microcrediting in exchange for collateral. Therefore, in the legal regulation of their activities, it is advisable to take into account the fact that pawnshops specialize in the provision of microfinance services and provide guaranteed microcredits, as well as the practice of using non-cash forms of payment to determine their legal status.

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## COMA DISEASE, STAGES AND TRANSITION

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### ABSTRACT:

**This article discusses coma, its stages, development and the state of patients and their types during and before the coma.**

**KEYWORDS: Coma, clinical course, sopor, decortication, apical syndrome, deserebration.**

### INTRODUCTION:

The Coma (synonym - an unpleasant state) is a severe pathological condition characterized by a sharp disturbance of conscious activity. Coma is accompanied by loss of response to external influences and a sharp disruption of vital functions (cardiovascular and respiratory activity). Coma is a severe pathology of the central nervous system, the next stage of which is brain death. The Coma is not a separate disease, but it is a complication of other pathological conditions or diseases.

### ETIOLOGY AND PATHOGENESIS:

The causes of coma can be divided into 5 groups.

1. Primary brain damage (cerebral factors) - insulitis, meningitis, encephalitis, epilepsy, edema, brain injuries and etc.
2. Metabolic disorders - diabetic, thyrotoxic, liver and etc.
3. Toxic factors - exogenous and endogenous intoxications, including toxic infections.
4. Disorders of gas metabolism: a) hypoxemia (decreased oxygen supply to the body from the outside) or in severe anemia, a decrease in the

supply of oxygen to the brain; b) diseases leading to respiratory or respiratory-acidic hypercapnia.

5. Disorders of water and electrolyte metabolism in the body and electrolyte deficiency is a major factor. For example, chul or other heat; long without water in places; congestion, recurrent recurrences, alimentary factors (abrupt restriction of drinking and eating) and etc.

Here, the factors that are a priority in the development of coma are highlighted separately. In fact, the etiological factors that lead to coma are inextricably linked. For example, the toxic factors that cause coma are, of course, accompanied by metabolic disorders, or these disorders lead to the formation of substances that have toxic effects on nerve tissue. Sometimes metabolic and toxic factors (endogenous toxemia) are combined. For example, thyrotoxicosis, infection, toxins, and etc. Prompt and qualified care for a patient in any coma begins with determining its etiology. Therefore, it is very important to determine the etiology of each coma.

### DEGREE OF UNPLEASANT SITUATIONS:

Sopor is a mild disturbance of mood, and reactions to "taishi" effects are preserved. The patient is reminded of a sleeping man. He hears what is being said, but he does not understand what it means. But the patient feels strong effects, that is, when a needle pierces his body, he shakes his ankles, when he speaks loudly, he opens his eyes, and sometimes performs light tasks (wait for your smile, open your eyes, pull

your feet). But unable to perform slightly more complex tasks (point your nose with your left smile, lie with both feet crossed, and etc.). A number of physiological reflexes (pupil, skin and foot reflexes) are stored in the sap. Sopor may be manifested only by psychomotor disorders (for example, in acute intoxication or acute metabolic disorders).

The first-degree coma is a moderate disturbance of consciousness, in which the patient does not answer questions, does not make voluntary, purposeful actions, does not follow instructions, the response to "taishi" noises decreases sharply. On examination of the neurological status, conjunctival and corneal reflexes are called, the pupils become narrowed, their response to light is preserved or slightly reduced. Mimic reactions occur when you press an autumn apple or inject a needle into your face. Swallowing is not impaired. When a needle pierces his body, he groans and takes the ashes there. He pulls his leg out when a needle pierces his heel or Babinski is checking for symptoms. Muscle tone decreases, foot reflexes increase, skin reflexes decrease. Babinski's symptom is called, Breathing is preserved. Control of pelvic functions is impaired.

The second-degree coma is a severe disorder of consciousness in which the response to tachyarrhythmias is sharply reduced. Corneal and conjunctival reflexes and the response of the interrogator to light are sharply reduced. Depending on the etiology of the coma; miosis, anisocoria or mild mydriasis are observed. Reactions to painful effects are sharply reduced: facial expressions are slower when you press the autumn apples or pierce the face with a needle. When a needle is inserted into the body, the response decreases sharply and protective reflexes appear. Swallowing is impaired, however; if water droplets fall into the respiratory tract, a

coughing reaction occurs. Respiratory disorders: Kussmaul or Cheyne-Stokes breathing is observed. Any voluntary movements are lost, the patient lies passively as he leans to the sides. Foot reflexes and muscle tone vary depending on the etiology of the coma. Babinski and Boisha pathological reflexes appear. Skin reflexes are present. Pelvic functions are severely impaired.

The third-degree coma is a deep-level coma in which the response to all "taishi" impulses is completely lost. Corneal and conjunctival reflexes are not summoned at all, the reaction of the pupils to light is completely present. The pupils dilate to a state of mydriasis. Yutkin reflexes and mimic reactions disappear. Pay and skin reflexes are present. Muscle tone decreases sharply or complete atony is observed. In focal brain damage, symptoms change asymmetrically. AKB falls, respiratory rhythm is disturbed (bradypnoe or taxipnoe). Body temperature drops. At this stage of the coma, the patient has to be transferred to a ventilator.

The fourth-degree coma is tula areflexia, muscle atony, terminal stage of coma manifested by bilateral mydriasis and hypothermia. Because the coronary and respiratory systems are completely disrupted, they are artificially enriched. Bioelectrical activity is not detected on the EEG. It is very important to know the above clinical symptoms in the diagnosis of coma. The Glasgow scale is also widely used to assess coma levels.

Severe complications of the coma Decortication, desereption, apical syndrome, and chronic vegetative states are serious complications of coma. The post-coma period is death.

Decorative rigidity (decortication). The activity of the cortico-spinal pathways was disrupted due to bilateral damage to structures located deep in the large hemispheres of the

brain. As a result, both arms bend at the elbow joint and stick to the body, the toes bend into a fist, and both legs stretch out and become pronation. This condition is called decortic rigidity.

Deserebration rigidity (deserebration) is manifested by a sharp increase in the tone of the extensor muscles in the body, arms and legs, and a decrease in the tone of the flexor muscles.

As a result, the head is turned backwards, the limbs are stretched, and the secretory remains in a state of pronation. It is impossible to bend the legs and arms of the secretory. Deserebration rigidity develops due to damage to both sides of the cerebral hemispheres and the conductive pathways in the brainstem. The term esedeserebration is used because the spinal centers involved in the regulation of muscle tone are excluded from the influence of the cerebral centers.

Apical syndrome develops when neurons in large areas of the cerebral cortex are destroyed. Apical syndrome usually develops rapidly and its causes include severe insult, severe brain injuries, poisonings, and etc. Clinical signs: no voluntary movement, the patient does not speak, memory loss, emotional reactions, swallowing disorders, increased muscle tone. The patient may open and close his eyes, however; the movements of arm and legs will be limited. It responds to painful effects with the chaotic movement of the arms of the foot. Sleep and alertness are disrupted. Severe impairments in respiratory and cardiovascular function are not detected. Apical syndrome is a combination of total apraxia and agnosia.

Vegetative condition. This condition occurs due to strong morphofunctional interruptions between the large hemispheres of the brain and the structures of the brainstem. A patient in a coma for a long time (3-5 x weeks)

regains consciousness, in which only the functions of the cerebral cortex, autonomic functions, are impaired. The patient regains consciousness and faints (sopor). Tachycardia, arterial hypertension, tachypnea, hyperthermia (40-41 ° C), dystrophic changes in the body, bedsores develop rapidly. Therefore, this syndrome is more common in diffuse axonal injury. the range of speech, attention, memory, perception, and thinking is severely impaired. The vegetative state lasts from a few days to several months. The vegetative state is prognostically severe, and it resembles the symptoms of apical syndrome.

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## IMPROVING THE SPIRITUAL AND MORAL COMPETENCIES OF FUTURE PRIMARY SCHOOL TEACHERS THROUGH AN INTEGRATED APPROACH

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### ABSTRACT:

The article aims to improve the spiritual and moral education of future primary school teachers based on an integrated approach and competence in the educational process. An attempt has been made to systematically analyze the development of universal human qualities in students by using the rich heritage left by our great scholars and applying them in the educational process.

**KEYWORDS:** Educational process, integrated approach, spiritual and moral education, competence.

### INTRODUCTION:

After the independence of our country, radical changes have taken place in the field of education. In particular, our national culture and values have been restored. The rich heritage left by our scholars has re-emerged. Copies of the masterpieces written by our ancestors, which decorated the museums of other countries, were copied and republished in Uzbek. From now on, future primary school teachers will have to carefully study the scientific heritage left by our scientists along with the new innovative education. In the process of education, each subject should be able to relate to life, give examples and examples from the spiritual and moral information on the subject, to develop a competent way out of future problematic situations, that is, to develop their competence need

The future primary school teacher will be able to instill in the minds and hearts of young people our national values and spiritual and moral education on the basis of an integrated approach to the educational process in educational institutions, through the integration of education and upbringing in the educational process. 'must develop universal qualities in the birds. At the same time, legal, economic, environmental and sanitary education should be improved.

As long as the student is not able to apply what he has learned, this knowledge will remain only in theory. At the same time, the priority of pedagogical activity is the formation in young people of the qualities necessary to solve new problems and issues arising from the requirements of the time. To do this, the educator must have read and studied our rich scientific heritage, as well as new pedagogical technologies. At the meeting on August 23, 2019, the President proposed to introduce the subject of "Education" based on the combination of "National Idea", "History of Religion" and "Sense of Homeland". [2]

A whole generation of educators and psychologists have sought the laws of understanding the essence of man, his development and perfection in this system of personal and social relations. Pedagogy has always had and will continue to have a clear historical character, as it relates to the upbringing of young people. Educational and pedagogical activity are two links in the same chain. Education has a socio-historical character. Hundreds of Eastern scholars, such

as Abu Nasr al-Farabi, A. Navoi, Ibn Sina, and Beruni, have also dedicated their most glorious works to unraveling the philosophical and social mysteries of this interdependence. The above-mentioned thinkers first taught in madrassas. Abu Nasr al-Farabi, the world-famous "second teacher," says of pedagogical culture: "A teacher should not allow too much domination or too much emptiness towards his students, because too much dominance in a student is hatred towards the teacher. awakens. When a student feels the emptiness of a teacher, the teacher becomes cold and disregarding of his knowledge "[3; 17].

The Nightmare, one of the great masterpieces of pedagogy in the ancient East, also contains instructive sayings about the etiquette and culture of speech, which have not lost their relevance to this day.

The Nightmare was written by Kaikovus in 1082-1083 and consists of 44 chapters. Chapter 7 is about etiquette. The work is written as the author's advice to his child. She encourages her child to speak kindly, politely, appropriately, and not in vain: "Learn to speak well and do not practice anything but gentle speech, because whatever you want to say, the language will say it. Say the word in your mouth, and a word that is not said in the right place will look bad, even if it is a good word. " "One has to be a speaker." Every speaker needs to practice a lot on his speech, to speak pleasantly in public, to gain the attention of the people. People, when you speak in front of people, let your words be beautiful, let the people accept that word. Let the people know that you have reached a high level with your words, do not break any words, describe them correctly, say the same thing."

One should be humble, one should behave modestly in the midst of the truth, boasting, talking too much is not a sign of wisdom. Until you become idle in the time of

word knowledge. The more knowledgeable, the less talkative, the less knowledgeable, the more talkative, because it is said that a fool speaks too much and that silence is the cause of health. Even if he is a smart person who talks a lot. People call him stupid ... "[4; 46-47].

In recent years, scholars of East and Central Asia, spiritual and educational leaders have made valuable statements about the essence of pedagogical activity, its socio-economic characteristics. We see this in the teachings of Abdullah Avloni, Professor Abdurauf Fitrat, Mahmudhoja Behbudi, Musa Tashmuhammad oglu Oybek, academician Gafur Gulam.

Abdullah Avloni, a great enlightened teacher and a skilled researcher, is a scientist with a completely new approach to the problems of the education system, the improvement of teaching, the formation of teacher skills and the training of future teachers. He emphasizes that a teacher's personal qualities, morals, etiquette, knowledge, intelligence, ingenuity, ingenuity, intelligence are the main basis for education and upbringing. In particular, in his opinion, the search for creative forms, new forms, methods and means of reading and teaching is one of the most important qualities of teachers [5; 32].

The Strategy of Actions for the Further Development of the Republic of Uzbekistan is based on the improvement of professional competence of future teachers "Education of physically healthy, mentally and intellectually developed, independent-minded, loyal to the Fatherland, deep-rooted outlook, deepening democratic reforms and civil society it is necessary to increase their social activity in the process of development" [1].

The future primary school teacher must have social flexibility, adhere to the principles of the culture of dealing with students in the

educational process. The main goal of modern education is to develop a fully developed society and society for society and the state. is to prepare a socially flexible person who can work on himself. Therefore, the level of competence of teachers is important in the education of a comprehensively developed person. The concept of pedagogical-psychological competence in the field of pedagogy means that the teacher achieves the highest level of results in the educational process, has a high professional potential, as well as communication and positive qualities.

In short, the national and foreign experience as the most important component of the development of social and sustainable pedagogical education is the development of the content and practical-technological system of improving the moral and ethical competence of future primary school teachers on the basis of an integrated approach. Reflects an important pedagogical problem.

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## RESEARCH OF PRIMITIVE WORDS IN UZBEK LANGUAGE AND THEIR PHONOLOGICAL PROBLEMS

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### ABSTRACT:

**This article discusses the root words of the Uzbek language and their phonological problems: how phonemes differ from each other in terms of number, width, and whether they are labial.**

**KEYWORDS: root words, phonological problems, narrow-width, labial, linguistics, phoneme, front of the tongue, back of the tongue.**

### INTRODUCTION:

One of the natural phenomena that has aroused the interest and admiration of linguists around the world is the harmony of vowels in Turkic languages with the law of synharmonism. This law does not bypass Uzbek phonemes as well. Let's take a look at one such phoneme, 'o', and the activity of the words in which it participates. In order to check the derivation of the root word with the phoneme "O", it is necessary to dwell on the phoneme itself. According to the official law of the modern Uzbek literary language, adopted in the Soviet period and still unchanged, "o" is one sided, medium-wide, labial, back row phoneme. In fact, according to G.Abdurahmanov and A.Rustamov: "In the ancient Turkic language there were eight vowel phonemes (that is, the phoneme "o" has always been two phonemes in the front row and back row - F.Sh). it varies according to whether it is labialization "(1). This fact has been proved by our Kashgar and Navoi linguists with some changes. Even today, there is a view that the phoneme 'o' is a dialect, and

that the language is a separate phoneme with a back pronunciation. According to X.Doniyorov, N.Shukurov, B. Yuldashev, the letter "o" used in our current writing serves to represent two independent sounds in practice (the letter "u" is the same). One of these sounds is tongue-tied, a soft phoneme, and the other is a tongue-back hard vowel (2). According to N.Turniyozov and F.Shodiev, the sounds "o" and "u" are paired phonemes. In our view, the preservation of this four-vowel phoneme is an internal need of our language. They differ in almost all Turkic languages "(3). According to B.Tuychibaev: "Since they have the ability to distinguish clear meanings, it would be expedient to interpret them (both phonemes of tongue front and alatter 'o' the language - F.Sh.) not as a variant, but as a separate phoneme" (4)

Now, let's turn directly to the root words and their derivatives in the modern Uzbek literary language, which are attached to one stem, but in fact have different "o" phonemes. Such words are pronounced as o't(gallblader), o'r(plait), to'r(front side of the room), bo'l(separate), bo'z(material), o'z(self), o'y(thought), o'n(ten), o'l(die), o'ch(desire), which are pronounced in front of the tongue, and o't(grass), o'r(mow), to'r(fish net), bo'l(be happen), bo'z(cry), o'z(leave behind), o'y(pinch), o'n(grow), o'l(Turkic version of gain something), o'ch(switch off), which are pronounced behind the tongue, lexemes are included (5).

The word "O't." The word in the form of O't is four separate words, the pre-



pronunciation verb and the body part, are also used in the meanings of the back-pronounced as grass and fire of the tongue. The following derivatives are formed from the word verb in the verb sense: as o'taketgan, o'talmoq, o'tamoq, o'tar, o'tar - o'tmas, o'tatmoq, o'tacha, o'tashmoq, o'tgan, o'tgan - ketgan, o'tilmoq, o'timli, o'timsiz, o'tinmoq, o'tinch, o'tirilmoq, o'tirish, o'irishmoq, o'tirmoq, o'tiritmoq, o'tirg'izmoq, o'tirg'ich, o'tish, o'tishmoq, o'tkazgich, o'tkazdirmoq, o'tkazilmoq, o'tkazishmoq, o'tmish, o'tmoq, o'tov, o'troq, o'troqlashmoq, o'tkazdirmoq, o'tkazilmoq, o'tkazmoq, o'tkazdirmoq, o'tkazilmoq, o'tkazishmoq, o'tkizmoq.

In this regard, Professor M. Mirtojiev comments: "The denial of singormanism in the Uzbek language is only within the framework of literary language. The formalization of literary language is subjective "(6)

Thus, the author of the pamphlet "Stages of development of the Uzbek language" said that "the Uzbek language did not have a six-vowel system at any stage of development. The eight-decimal system in the early period of the Turkic languages is a gradual continuation of the nine long historical stages in the whole period of the history of the Uzbek language. So, by itself, the modern Uzbek language also follows the system of nine vowels "(7) concludes the practical and realistic demand of many.

A word of "O'y". When the word thought is pronounced in front of the tongue, it means to think, to imagine, and its derivatives: as o'yin, o'yinboz, o'yinchi, o'yinchiq, o'yinchoq, o'yinlararo, o'ylamoq, o'ylamsiramoq, o'ylantirmoq, o'ylatmoq, o'ylashmoq, o'ynamoq, o'ynatilmoq, o'ynatmoq, o'ynovchi, o'ynoq, o'ynoqi, o'ynoqlanmoq, o'ynoqlatmoq, o'ynoqlashmoq, o'ychan, o'ychi.

When the word "o'y" is pronounced in the back of the tongue, it represents the verb to

carve and its derivatives: o'ydim-chuqur, o'ydim-chuqurlik, o'ydirilmoq, o'ydirmoq, o'yilmoq, o'yima, o'yimakor, o'yimakorlik, o'yimalamoq, o'yimalatmoq, o'yimoq- o'yimoq

The word "o'y" and some of its derivatives clearly show their nature when written according to the law of synharmonism. For example, from the point of view of small syntax, the word "o'yin" has the following etymological meaning: o'y + un = o'yun ?! We will briefly comment on these considerations. The Explanatory Dictionary of the Uzbek Language states that "o'y" and "un" have the following meanings:

"O'y"(thought) 1. The process of thinking about someone or something; having an opinion, thinking in the brain; thought, imagination.

2. The plan, intention, purpose for which the idea is intended.

3. Thinking ability, intellect.

"Un". 1. Sound, voice.

2. In a figurative sense: scream, moan.

So "o'y" means thought, where there is thought there is intellect, where there is intelligence there is magic, where there is magic there is miracle, where there is miracle there is divinity...

Un. means sound, the combination of sounds means word, where there is a word there is both magic and miracle, and there is also divinity.

Apparently, the word of "o'yun" which is related to divinity (in the sense of sports) embodies a number of noble virtues, such as mental perfection, mental training, physical health, healing, exercise, and miracles. Through the "o'yun"(game or physical activity), our ancestors trained their children physically and mentally. That is why "El" (people) says: A healthy body is a healthy mind! The scholar Abdullah Qadiri was well aware of the original meaning and harmony of sounds in the word

“o’yun”(game) and used it appropriately: Kumushning so’z o’yuni or Otabek Kumushning so’z o’yuniga ajablanar va hoy shayton, deganidek unga qarar edi (i.e. game-game) (8).

The words which are used above such o’t, o’z, o’y, is artificially attached to a root, with different pronunciations and different meanings, such as o’r-o’r, to’r-to’r, bo’l-bo’l, bo’z-bo’z, o’n-o’n, o’l-o’l, o’ch-o’ch, lexemes also have many derivatives. It is not possible to quote their derivatives in full in this article. It is obvious that the phoneme "o' " in the Uzbek literary language is bilingual, and the language has a back pronunciation. The root words in which they participate also need separate vowel characters (letters) depending on their pronunciation and meaning. H.Doniyorov, N.Shukurov, B.Yu Idoshevs: “It is difficult to enumerate such shortcomings in our speech (related to the phoneme“ o’ ”-F.Sh.). The only way to get rid of such confusion is to use the language in the alphabet, and the language is to express the back "o’ " with a separate sign (letter).

#### **CONCLUSION:**

In Turkish languages, including Uzbek, any speech sound is a phoneme, so it must be represented by a separate sign (letter). After all, artificiality is a relative of nature. Sound is closely related to letter, letter to word, word to word, speech to language, language to national

identity. Indeed, the phoneme ‘o’ helps to delve deeper into the original words and their derivatives, eliminating the artificialities that have entered our language. Indeed, eco-linguistics has shown more deeply that the natural purity of language must be preserved, and that it must not be deliberately interfered with in its life. Research in this area is still ongoing.

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# THE EFFECT OF SEWER WEIGHT ON THE PRODUCTIVITY OF EARLY FARM POTATOES

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## ABSTRACT:

In this article, the effect of seed weight on the growth and development of potatoes is described. It is stated that the increase in weight of seed pods is directly related to the intensity of seedling formation, the number of stems formed in each bush, more or less formation of leaf sheaths, and the degree of infection of potato plants with diseases depends on seed weight.

**KEYWORDS:** potato, tuber, weight, planting scheme, seedling, tumor, disease, leaf-stem, yield quality.

## INTRODUCTION:

The Presidential Decree of the President of the Republic of Uzbekistan dated March 14, 2019 No PP-4239 "On measures to develop agricultural cooperation in the field of fruit and vegetable growing" was made. Based on the above decision, it is necessary to meet the population's demand for potatoes, plant varieties that are resistant to diseases and pests, easy to send and store in promising remote areas, especially to get high yields, quality, marketability. Potatoes have great importance as an important food in the national economy. It is second only to legumes in terms of protein per hectare. If the potato yields 27.2 tons per hectare, the protein obtained from it is 546 kg [3]. Increased potato production can make a significant contribution

to the provision of food, including protein, to the population [1].

## METHODOLOGY:

Seeds sown are one of the deciding factors in increasing the yield of potatoes. If the seed is large (100-120 g), it has a negative effect on the pure yield [2]. Therefore, the issue under study is one of the current problems of potato growing. To study this issue, potatoes were planted in five different weight (30-40, 40-50, 50-60, 60-70 (naz) and 70-80 g) tubers of Marfona variety, in the same 70x30 cm scheme, in the same conditions at an early stage. The experiment was conducted at the State Unitary Enterprise "Center for Innovative Developments and Consulting in Agriculture" of the Andijan branch of Tashkent State Agrarian University. The experimental method was placed in 4 repetitions with a length of 10 m according to the current method manual [2]. Each repetition was 28 m<sup>2</sup> and the total area was 672 m<sup>2</sup>. Phenological, biometric, and other observations made at the experimental site yielded the following results.

## RESULTS:

The formation of the first (10%) and mass (75%) seedlings of seeds of different weights sown at the same depth in the early period occurred after 23-28 and 25-35 days. In the tested seed weights 10% seedlings of 30-40 g tubers, 28 after sowing; 75% of the seedlings were formed after 35 days and were

found to be 4 ... 7 days later than the control (60-70 g).

Among the seed weights studied, the lowest error rate was observed in the last two variants, and it was 4.0 ... 3.0% and it was 1.1–2.1% lower than the control. It was found that the increase in seed weight from 30-40 g to 80-90 g has a positive effect on plant viability.

The weight of the tested seed pods influenced not only the rapid formation of seedlings and the amount of plant destruction during growth, but also the different formation of the surface of the potato. Observations showed that the shortest stems (49.2; 55.7 cm) were observed in the first and second variant plants of the experiment, and their length was

16 ... 10.1 cm shorter than the stem length of the control (60-70g) variant plants.

The longest stem plants were formed from seeds weighing 70-80 g, their main stem height was 69.9 cm on average, and it was found in practice that they were 16.0 cm longer than the control variant plants. The leaf surface area (0.28 dm<sup>2</sup>) formed by the first variant plants of the experiment was 0.14 dm<sup>2</sup> less than the leaf surface of the control variant seedlings.

This means that the weight of the seed affects the different formation of the surface of the potato. Seedlings formed from light and heavy tufts of weight cause various lesions with nausea diseases Table 1.

Table 1. The effect of seed weight on the disease of early potato seedlings with nausea

Seed weight, grams	Nausea, %					
	Tubing the leaves	Wrinkled mosaic	line mosaic	Gothic	"Alvasti supurgi"	Total
30-40	24,1	10,1	11,7	0,3	0,1	46,3
40-50	21,7	8,9	10,2	0,1	-	40,9
50-60	15,2	5,7	5,9	-	-	26,8
60-70 (control)	11,1	3,2	3,1	-	-	17,4
70-80	8,0	1,3	2,1	-	-	11,4

The figures in Table 1 show that early potato seedlings were affected to varying degrees by common types of nausea.

It was found that 24.1% of seedlings formed from seeds weighing 30-40g were infected with viral nausea, 10.1% with twisted mosaic and 11.7% with road mosaic - a total of 46.3%.

The increase in the weight of the seed pods had a negative effect on the degree of infestation of seedlings with diseases, a decrease in the number of affected plants was observed.

That is, in the first variant of the experiment, 46.3% of plants were infected with viral diseases, while in the second and third

variants, 40.9 and 26.8% were infected. The experiment found that the rates of plant disease infestation from seeds of the previous three weights (30-40, 40-50 and 50-60g) were 9.4% to 28.9% higher than the damage to seedlings of the nazoart variant (60-70g).

It was observed that seedlings formed from seeds weighing 70-80 g were infested with rot diseases, and the rate of infestation of control variant plants decreased by 6.0%.

This means that the use of seeds weighing 70-80 g to reduce the incidence of nausea in potato seedlings planted at an early stage has a positive effect.

The weight of sown seeds formed in each bush and hectare had a different effect on the yield and its quality Table 2.

Table 2. Influence of the weight of seed pods on the yield and quality of early potatoes

Influence of the weight of seed pods on the yield and quality of early potatoes	Actual number of plants per hectare, thousand	Seed consumption, t / ha	Yield		Yield		The amount of commodity in the total yield, %	The average weight of 1 commodity end, ha
			On 1 bunch, g	In 1 hectare, t	t/ha	relative to control, %		
40-50	43620	2,1	450	19,5	17,1	70,7	92,2	89,8
50-60	44096	2,4	590	26,0	23,2	95,9	97,1	98,7
60-70 (control)	44144	2,7	610	26,9	24,2	100	98,8	114,1
70-80	45287	3,4	690	30,3	26,9	114,9	98,8	119,8

As the weight of sown seeds increased (Table 2), the amount of seeds sown per hectare also increased (1.7 ... 3.9 t / ha), while the yield per bush (380 ... 690 g / bush) and an increase was observed. This in turn had a positive effect on the gross and net yield per hectare.

Among the tested seed weights, the lowest yield (380g) per bush compared to the control was formed by seed plants weighing 30-40g. The yield per hectare of this variant plants was 9.8 t / ha or 40.8% lower than the yield of the control variant.

It was found in practice that plants weighing 70-80 g yielded 4.7 tons more per hectare than the control. Seeds of 80-90g should theoretically yield more than seeds of 70-80g, but seeds of this weight produced more stems due to the formation of a large number of stems, but their fractionation reduced the gross and net yield.

Among the tested seed weights, the highest yield (31.2 t / ha) was formed by seedling weighing 70-80 g, which was 14.9% higher than the control. The weight of the seed pods also affected the quality of the crop.

The first and second variants of the experiment accounted for 90.5 and 92.5% of the yield formed by plants, respectively, with an average weight of 84 ... 89g. The amount of customary ends of these options is 8.3 times

the amount of control ends; 7.9% and weight was found to be 7-8g lower.

From the studied seed weights, it was found that the largest (119.8g) cultivars yielded from control and the highest net yield per hectare (27.8 t / ha) yielded plants grown from seeds weighing 70-80g.

#### CONCLUSION:

1. From the studied seed weights, it was found that the largest (119.8g) cultivars yielded from control and the highest net yield per hectare (27.8 t / ha) yielded plants grown from seeds weighing 70-80g.
2. The use of seeds weighing 70-80 g to reduce the risk of early blight of potato seedlings has a positive effect.

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# THE EFFECT OF PLANTING SCHEME AND FEEDING AREA ON THE YIELD OF EARLY POTATOES

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## ABSTRACT:

In this article the impact of the planting scheme on the growth and development of early maturing varieties of potatoes Marfona are describes. The planting scheme has a positive effect on the viability of seedlings and their resistance to various diseases.

**KEYWORDS:** potato, tuber, weight, planting scheme, seedling, net yield, commodity quality.

## INTRODUCTION:

The Presidential Decree of the President of the Republic of Uzbekistan dated March 14, 2019 No PP-4239 "On measures to develop agricultural cooperation in the field of fruit and vegetable growing" is signed. Based on the above decision, it is necessary to meet the population's demand for potatoes, plant varieties that are resistant to diseases and pests, easy to send and store in promising remote areas, especially to get high yields, quality, marketability.

Increasing potato cultivation can make a significant contribution to providing the population with food, including protein. Potato chips contain 75% water and 25% dry matter. 70-80% of the dry matter is starch, in the end its content is 13-20%, protein 2-3%, klechatka 1%, fat 0.2-0.3%, sugar 1%, ash 0.8-1.0%. [3].

It is described that the planting scheme and feeding area can increase the yield of

potatoes by 3.0-3.4 tons and have a positive effect on its quality [1].

Potatoes are of great importance as a food in the national economy. The area under cultivation and the gross yield from it are increasing year by year. In 2018, 97,000 hectares were planted in the country, yielding a total of 2.4 million tons.

One of the resources to further increase the yield of potatoes is the planting of the cultivar in the feeding area at the level of biological demand. There is insufficient scientific evidence on the scheme of planting early and early-middle potato varieties included in the state register of 2018 in the feeding area.

## METHODOLGY:

Based on the above information, we have selected the Marfona (Dutch) potato variety at a distance of 70 cm in 5 different distances: 70x20, 25, 30 (naz), 35 and 40 cm in February at the State Unitary Enterprise "Center for Innovative Developments and Consulting in Agriculture" of the Andijan branch of Tashkent State Agrarian University. planting experiments were conducted in the third decade.

The experimental method was placed in 4 repetitions with a length of 10 m according to the current method manual [2]. Other phenological, biometric observations made at the experimental site yielded the following results.

**RESULTS:**

Planting scheme-feeding area did not significantly affect the timing of the first (10%) and complete (75%) germination of seed tubers, as well as the amount of error. However, during the growth of seedlings had an impact on their viability. That is, 4.2% of seedlings grown in the 70x20 cm (0.14 m<sup>2</sup>) scheme were found to die during the growing season. In this variant, the number of dead seedlings was found to be 50.0% higher than the number of seedlings killed during the growing season in the control planting scheme. The mortality of seedlings grown in the second, fourth, and fifth feeding areas of the experiment did not exceed 1.8–1.9%.

The planting scheme had a different effect on the length of the main stem and the level of leaves formed in each bush and hectare. Among the tested planting schemes, the longest (74.9 cm) stems compared to the control planting scheme plants were formed in plants grown in a feeding area of 0.14 m<sup>2</sup>.

However, 70x35 cm, (0.44 dm<sup>2</sup>) and 70x40 cm schemes (0.46 dm<sup>2</sup>) plants dominated the plants in other tested schemes in terms of forming a large leaf surface in each bush. It should be noted that the length of the stem of the last two schemes plants was short

(55.1; 50.8 cm), but caused an increase in the leaf surface in the bush due to the fact that the buds formed a lot of branches.

The tested planting schemes also had a certain reduction in the susceptibility of potatoes to various viral diseases. 33.9% of seedlings grown in 0.14 m<sup>2</sup> feeding area were infected with viral diseases. Of these, 18.4% were leaf blight, 9.8% were wrinkled mosaics, 5.2% were road mosaics and other diseases. The rate of infestation of seedlings in this planting scheme was 12.4% higher than the incidence of plants in the control planting scheme. This is due to the lack of nutrients in the soil and insufficient use of solar energy due to the thick growth of plants. Among the studied planting schemes, seedlings grown in a feeding area of 0.175 m<sup>2</sup> were 8.0% less affected by rickets than control variant plants.

Planting scheme-feeding area affected not only the growth of the potato plant surface area and various lesions with various diseases, but also its yield and yield quality-Table 1. The potato planting scheme affected the consumption of seed tubers per hectare, the total yield per hectare and net yield, the net yield, and the average weight of commodity tubers (Table 1).

Table 1. The effect of planting scheme on the yield and quality of early potatoes

Planting scheme	Number of tubers planted per hectare, thousand	Seed consumption, t / ha	Actual number of plants per hectare, thousand bushes	Total yield		Yield		Commodity yield,%	Average weight of marketable nodes, g	Amount of non-commodity yield,%
				In 1 bush, g	In 1 ha, t	t/ha	In relation to control, %			
70x20 cm	71428	4,5	64928	430	27,9	23,4	100,5	86,7	72,0	13,7
70x25 cm	57143	3,71	52743	570	30,1	26,4	126,2	95,9	98,1	4,1
70x30 (the)	47620	3,1	44144	590	26,4	23,3	100	97,0	101,4	3,0
70x35	40816	2,65	37632	610	22,9	20,3	87,2	98,1	110,1	1,9
70x40 cm	35714	2,3	33000	645	21,3	19,0	81,6	98,9	112,1	1,0

Among the tested sowing schemes, the largest number of seeds (4.5 t / ha) compared to the control (70x30 cm) was sown in the first variant of the experiment, and its amount was found to be 45.2% higher than that planted in the 70x30 cm scheme.

Seed consumption in the last two schemes of the experiment (70x35, 70x40 cm) was found to be 0.8 ... 2.2 t less than in the control and the first (70x20 cm) sowing scheme.

The potato planting scheme had an impact on the consumption of seed tubers per hectare, the total yield per hectare and per hectare, the net yield, and the average weight of commodity tubers (Table 1).

Among the tested sowing schemes, the largest number of seeds (4.5 t / ha) compared to the control (70x30 cm) was sown in the first variant of the experiment, and its amount was found to be 45.2% higher than that planted in the 70x30 cm scheme.

Seed consumption in the last two schemes of the experiment (70x35, 70x40 cm) was found to be 0.8 ... 2.2 t less than in the control and the first (70x20 cm) sowing scheme.

The small or large size of the feeding area had a different effect on the yield and its quality, which is formed in each bush and hectare. In the first planting scheme (70x20 cm) seedlings grown on average 430 g per bush. and 27.9 tons per hectare. It was found that 86.7% of the yield of this variant is commodity tubers, and 13.7% is non-commodity. At the same time, the average weight of the commodity tubers of this variant was 72.0 g. The average weight of the commodity nodes of this variant was 29.4 g less than the control. Due to the total and net yield of seedlings grown in the feeding area of 0.14 m<sup>2</sup> and the number of commercial tubers and their average weight, significantly lower than the control, in our opinion, does not fully use light energy and insufficient moisture and

nutrients in the soil. Among the tested planting schemes, seedlings grown in the 70x25 cm scheme of the experiment yielded the highest yield per hectare (26.4 t / ha, net-23.3 t / ha) compared to the control. Experiments have shown that the total and net yield of seedlings of this variant is 26.2% higher than the yield obtained from the controlled feeding area (0.21 m<sup>2</sup>).

The yield of seedlings collected from seeds sown in the 70x35 and 70x40 cm schemes of the experiment was 20 and 55 g higher than the yield obtained from each tuber of the control sowing scheme. However, the amount of commodity yield (98.1; 98.9%) and the average weight of commodity tubers were 110.1 and 112.1 g.

It should be noted that the gross and net yield per hectare depends not only on the yield formed in each bush, but also on the number of plants per hectare. Therefore, the gross yield from the last two variants of the experiment was 12.8 and 18.6 percent lower than the yield from the control variant.

#### CONCLUSION:

Early planting of "Marfona" type early varieties of potato in the 70x25 cm scheme-0.175 m<sup>2</sup> feeding area for high and high-yield yields ensures high and high-quality yields, forming seedlings resistant to various diseases of the disease.

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## THE ONLY RARE PLANT FOR ANDIZHAN REGION: ALLIUM ALAICUM

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### ABSTRACT:

**Aloe onion is a very rare endemic species. This shows that this species is unique not only in Andijan, but in the whole of Central Asia common area. Learning more about this species is one of the key factors in stabilizing its natural habitat. The research in this article focuses on a comprehensive study of information about onions.**

**KEYWORDS: Endemic, Flora, Fergana Valley, rare plant, onion, Alay ridge, population, Red Book.**

### INTRODUCTION:

The Republic of Uzbekistan is very rich in endemic plant species, of which only 45 species are found in the Fergana Valley. Although not all of these endemic species are listed in the Red Book, Uzbekistan is one of the most important research sites for species sustainability. The number of such species in the Fergana Valley is currently 23 [1]. These 23 species listed in the Red Book and the only endemic species in their range are a real challenge for scientists! Allium Alaicum is also on this list. Morphophysiological and geographical factors are the main factors to be considered when objectifying such species.

### MAIN PART:

Andijan region is geographically part of the Fergana Valley. A number of rare plants, including Allium alicum, were recently found in the Alay mountain range in the area around the village of Imam Ota in Andijan Province [fig.3]. Part of this territory belongs to the Osh region of the Kyrgyz Republic. This means that the

scale of the species we are studying is Andijan and Osh regions. To date, 50 allium alixes belonging to 2 populations have been identified [2]. As we can see, the division of the region is observed in this plant, which is one of the main signs of decline [3]. Features such as environmental variability, resilience, and resilience may be reduced or completely lost for this species. More than 250 species of allium are found in Central Asia and Southwest Asia. In Central Asia, populations of especially tasty and medicinal wild allium have been growing for many years. Detailed information and understanding of the population can be found in Dobransky-1968. Onions and garlic are eaten in these parts of Central Asia. There are more than 80 endemic species in the region [4], and data on the use of such species by the local population may play a key role in the conservation of the endangered species. That is, Allium Alaicum can be consumed by the population, and people living in such an area value onions as "Allium motor camelin Levicher" (motor, moy-moddor, modor – means in Tajik language health).



Fig.1. Allium Alaicum. [Near osh]

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At the same time, it is difficult to draw conclusions from the latest herbariums, as several key features, namely the taxonomic characteristics of the species, change during the drying process. In alliums, one of the main distinguishing features is the structure of the flower and the umbrella [5].

Main taxonomic features: bulb ovoid spherical, diameter 1-1.5 cm. The bark is blackish-gray, slightly pale, like paper. Naked or long back hairs with ribs 50-75 cm tall. Leaves one or two, 5-17mm wide, linear. It is 2-3 times shorter than a sharp vein, with hair on both sides, sometimes almost naked. The umbrella is hemispherical and rarely spherical, with many flowers [6]. The stamens are white, the petals are equal, and there are no petals. The powder threads are 6mm long, sessile. The fruit is spherical, 4 mm in diameter. It flowers in June and ripens in July [2] [fig2].

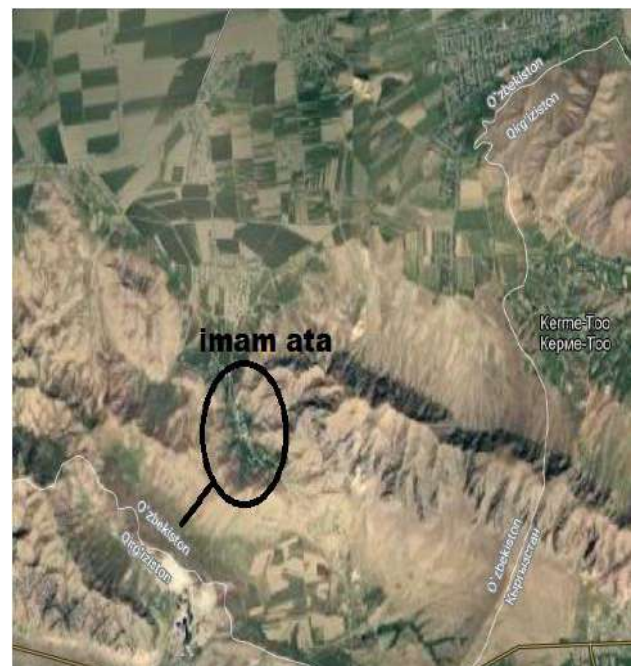


b) umbrella

Fig.2. Morphological structure of allium



a) Leave



alaicum

## CONCLUSION:

Here are some things to keep in mind at the end of our thoughts. To date, there is no phylogenetic classification of *Allium*. DNA analysis has studied the subgenesis of about 40 species. The most difficult factor in this area is the endemism factor, ie monogeographic distribution [7]. Expeditions are needed every year to collect rare species from the last collected area. Because these species are likely to become extinct later. As you can see, the most important taxonomic symbols are shape, color, and size. These marks are the ones that change when typed, ie when dried, the length is shortened, the color changes, the shape can retain its structure, but often takes on a new shape. This is another taxonomic trait that reflects a different species trait or creates a misunderstanding and impression in the searchers. It's also a great way to track area changes. Area changes need to be monitored systematically, ie the rhythm of annual and seasonal changes! This will allow us to study not only the structure of the area, but also the cause of the overall decline of the plant, the impact of seasonal changes on the plant and the degree of temperature stagnation with high accuracy! Recently, the availability of additional information about *Allium alaicum* has decreased, the last time it was grown in the Botanical Garden of the Uzbekistan Republic Academy of Sciences, the status, number and structure of areas in the natural environment are increasing. But the relationship with other species is determined by the state of the species in its natural environment, which is a key factor.

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## THE USE OF INFORMATION TECHNOLOGIES IN THE EDUCATIONAL PROCESS

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### ABSTRACT:

**This article provides information on the use and teaching of information technology in education today, as well as news in this sphere.**

**KEYWORDS: information technology, multimedia and Internet technologies, the practice of world pedagogy, MV Bulanova-Toporkova, pedagogue-scientist VK Selevko, databases, hypertext, simulation, electronic communications.**

### INTRODUCTION:

The application of information and communication technologies in all spheres of human life and activity, the sharp increase in the flow of information, the expansion of information exchange, management and automation of technological processes, in general, the acceleration of the process of informatization of society, requires a thorough knowledge of information and communication technologies. Regardless of the field in which he works, he must know and be able to work with information processing tools, methods of their use in order to perform their duties at the level of modern requirements. Therefore, the essence, goals and objectives of the radical reforms in the field of education in the Republic today are clearly defined. The task of training to a level that can be used effectively in their professional activities has a special place.

Nowadays, in any school discipline, a teacher must prepare and conduct lessons using information technology. The lesson using information technology is visual, colorful, informative, interactive, saves teacher and

student time, allows the student to work at their own pace, allows the teacher to interact with the student in a variety of ways and individually and allows you to work, quickly monitor and evaluate learning outcomes. If information technology is used in educational activities, the learning process can be effective:

1. Their use optimizes the activities of teachers and students.
2. The use of information technology increases the motivation and activity of students.

Technology and tools for measuring, monitoring, and evaluating learning outcomes have traditionally been closely linked to the use of information technology tools in the learning process. Indeed, computer and telecommunications equipment for pedagogical measurement and control are currently used in almost all educational institutions of the open education system. Of course, the thematic areas of such pedagogical dimensions are always adapted to the content, methods, forms and means of pedagogical activity. The construction of such information technology tools should be based on the maximum consideration of the characteristics of the development and pedagogical use of test systems and related computer products. Today, when information becomes a strategic source of social development, it becomes clear that modern education is a continuous process. Therefore, there is a need to organize the educational process based on modern information and communication technologies, where electronic means are increasingly used as a source of information. The concept of modernization of Russian education states: "The first task of

education policy at the present stage is to achieve the modern quality of education, its conformity to the relevant and future needs of the individual, society and the state." At the same time, one of the main tasks of modernization is to achieve a new modern quality of school education. Informatization of education should help to address the two main tasks of the school: education for all and a new quality for all. The use of information and communication technologies in the classroom allows students to develop the ability to manage the information flows of the world around them, to master practical methods of working with information and to exchange information using modern technical means. The use of information technology in the classroom allows you to move from an understandable-visual teaching method to an active method, in which the child becomes an active subject of learning activities. It helps students to consciously acquire knowledge.

The advent of multimedia and Internet technologies has opened the way for general education schools to use information technology as an effective tool in the process of education and communication. There is no denying that the role and influence of information technology in the development of a well-rounded person, his independent career choice and professional self-formation, the development of professional skills is growing. The use of information technology in general education schools opens up the following opportunities for teachers and students, in particular:

- Learn new ways to gather information and apply them;
- Children's thinking expands, their interest in learning increases;
- The role of independent work will increase, efficiency will improve;

- Helps to develop the child mentally, expand the emotional and aesthetic horizons, develop positive abilities.

The use of computers and information technology creates new opportunities in education, learning and the development of students' creative thinking. Information technology allows education to be integrated into life in the process. There will be an opportunity to link teaching to future careers. In the use of information technology, it is necessary to strive to realize the full potential of the student's personality: to realize the child's cognitive, moral, creative, communicative and aesthetic abilities through computer tools. In order to turn computers and information technology into a full-fledged tool for the development of the student's personality, the teacher must be knowledgeable (competent) in the field of information technology. In the practice of world pedagogy, a number of scientists, including MV Bulanova-Toporkova and others, assess the teacher's knowledge in the field of information technology with the following qualities:

- 1) The ability to evaluate and integrate experience in a modern information environment;
- 2) Striving to develop personal creative qualities;
- 3) High level of general communicative culture;
- 4) The presence of theoretical knowledge and experience in organizing the interaction in the media;
- 5) The need for self-reflection (analysis of one's mental state);
- 6) Mastering the methods of receiving, selecting, storing, and processing, presenting information, and the culture of its modification, transmission and integration.

Educator-scientist VK Selevko considers the computer literacy of the teacher as an important part of the content of computer technology and includes the following:

- To know the basic concepts of computer science and computer engineering;
- To know the general structure and functional capabilities of computer technology;
- The knowledge of modern operating systems;
- To know the shells and operating tools of a modern general-purpose program (Norton Commander, Windows, etc.) and master their functions;
- The mastery of at least one text editor;
- To have a basic understanding of programming algorithms, languages, and packages;
- Basic experience in using utilities that perform utilitarian functions.

The rapid development of information technology tools and software, such as the emergence of a new generation of computers, new programs, opens up favorable technical capabilities for solving various educational problems. However, research shows that information systems used for educational purposes are still unsatisfactory in terms of their didactic qualities. This is due to the fact that the methodological (pedagogical) means of using information technology for educational purposes lag far behind the development of technical means of information. The potential of the computer is huge, but it is not used enough for pedagogical purposes. Educational information is included in the design phase. In particular, information is included in the creation of a database of automated learning systems, in the preparation of teaching materials for e-textbooks, in the creation of scripts, problems and exercises, test assignments with computer systems of the modeling type. Information technology combines information from several disciplines,

including computer science, mathematics, cybernetics, psychology, and pedagogy. However, the psychological and pedagogical basis plays a leading role in this harmony. The development and implementation of information technology plays an important role. New information technologies are important for the educational process and research. Unlike conventional educational technologies, in information technology the object of labor and its result is information, and the tool of labor is the technical means of informatization. Computer tools at different stages of the educational process:

- At the stage of providing educational materials to students;
- Interactive interaction with the computer and mastering the learning material in the process of movement;
- Repetition and consolidation of acquired knowledge, skills and abilities;
- Intermediate and final monitoring and self-monitoring of learning outcomes;
- can be used in the process of making adjustments to the learning process and its outcomes by breaking down the learning material into parts, improving its classification and systematization.

Rationally designed computer-based learning programs allow for the individualization and differentiation of learning, encouraging children's interests and independent learning activities, taking into account the psychological and pedagogical rules of student learning. In the pedagogical process of the school, the computer can serve as a teacher, a working tool, a learning object, a collaborative team, a leisure (play) environment (G. K. Selevko). The computer as a teacher is a source of educational information that partially or completely replaces the teacher and the book; a completely new quality visual aid with multimedia and

telecommunications capabilities; individual and information environment; trainer; students act as tools for diagnosing and monitoring knowledge. Computer as a working tool - a text editor for the preparation and storage of texts; acts as a graphics editor and a computing machine with great capabilities. Computer programming as a learning object; software development; uses a variety of information environments. A collaborative team is one that communicates with a wide audience through an Internet connection. Leisure (game) environment is created with the help of game programs, computer games on the network, computer video. The information environment includes modern databases, hypertext and multimedia, simulation training, electronic communications, expert systems. Such methods serve to increase the effectiveness of education. The introduction of information technology in education will lead to a change in the role of the teacher, that is, the teacher will become more of a researcher, organizer, consultant and programmer than a teacher.

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## **POLITICAL CONCIOUSNESS OF THE YOUTH AS A DEVELOPMENT OF CIVIL SOCIETY**

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### **ABSTRACT:**

**This article states the role and importance of political consciousness of the youth in civil society. It also focuses on various principles on how to develop a civil society in Uzbekistan.**

**KEYWORDS: political consciousness, civil society, social development, educational system, socialization, political activity of citizens.**

### **INTRODUCTION:**

Modern educational systems represent an integral component of the culture of the society. The value of education is largely determined by the fact that it is not only a basic prerequisite for the development of human civilization, but also a spiritual foundation and support for personality. High dynamics of modern social development predetermines the role and importance of the educational system in all spheres of human activity. Modern society requires from a citizen maximum demonstration of intelligence, creative abilities, and sensitivity to the current political, economic and social changes, high social mobility and psychological stability.

Various qualities of a comprehensively developed person necessary for full-fledged human activity are developed in the process of socialization. Period of the most intense accumulation and development of common cultural, political, and professional knowledge, the development of a person as the individual, his (her) formation as a citizen takes one of the most important places in this complex and

contradictory process. For a large social group the youth this is the period of learning in a higher vocational educational institution. In modern conditions of formation and development of society the importance of education in general and higher education in particular grows up more and more. And here, along with the need to prepare a highly qualified professional specialist, the task of forming a politically educated person corresponding to the changed characteristics of the domestic political system is brought to the forefront. In this regard, the need for objective scientific study of the effect of the higher vocational educational system as a specific institution on the functional aspect of political culture that is political consciousness of young people appears [3, p.27].

### **MATERIAL AND METHODS**

It is known that the main task of the educational policy of any state is the creation of such educational system which, on the one hand, would reflect socially, mentally and culturally the economic and political needs of a particular stage of society and state development, and on the other hand would be a powerful tool, the institute allowing to provide the relative political and social unity of society, its socio-political stability, especially in the conditions of deep differentiation.

Educational system acquires the character of one of the state and society major political institutions which aims, inter alia, at the formation of "political man", i.e., the formation of his (her) political qualities as a citizen. In this regard, among other forms of

social consciousness experiencing the impact of the educational environment the political consciousness occupies a special place. It is the political consciousness that the most vividly reflects the attitude of a person to the socio-political, economic and other processes, taking place in society, and contributes to the formation of the political behavior of this person.

The youth active in politics studies, analyzes youth problems, and is able to solve them, entering the representative and executive authorities in a small amount yet. Young people must be convinced that the effectiveness criterion of any policy is the growth in prosperity of each and every one providing, eventually, wealth, fame and power of the state. The youth is able to become one of the main driving forces in building a civilized civil society.

## RESULTS

The Republic of Uzbekistan began handling the problem of increasing the political activity of citizens with a legal confirmation of their rights to participate in state administration. The Constitution proclaimed legal guarantees of inclusion of a human being in the system of his (her) relationship with civil society and the state. Citizens of the Republic of Uzbekistan have the right to participate in administration of public affairs and the state affairs both directly and through their representatives. Such participation is carried out via self-administration, referendums and democratic formation of government bodies. [1, p. 8]. Formation of principles of civil society and institutions of Uzbek democracy became one of the stages of reforming the political system, the most important feature of which is the growth of political consciousness of the people.

## DISCUSSION:

In the present period, when the society and economy reforming is being updated, as well as the state is being formed, we cannot lose sight of our younger generation, since it is the one that shall have to walk further along the path to democracy. For this purpose, we need to pay more attention to the education of the youth in the spirit of the time, taking into account all innovations. Political consciousness is directly related to the ideology of the state, so now a great deal of attention is paid to the ideological sustainability of our youth. It is very important to form in our people, especially the younger generation, the ideological immunity and political knowledge base in the current context of overcoming the ideological vacuum. The emerging idea of national independence, based on age-old traditions of the people and human values, should clearly reflect the high goals and objectives of society and the state [2]. Further deepening of the processes of society and the state democratization, ensuring their consistency and effectiveness involves the following:

Firstly, the liberalization of the political life of the country, the state and social development, increasing of political activity of citizens, the formation of a political culture based on national and universal values, ensuring standards of democracy, freedom of thought and conscience, pluralism and human rights, priority of the principle of "living in accordance with the humanistic and universal values" [4].

Secondly, the establishment of an effective mechanism, ensuring a balance between the interests of the social forces and movements existing in society, as well as approval of multiparty political principle in the political life.

Thirdly, the creation of conditions for independent democratic institutions, strict

observance of constitutional principles of separation of powers; the creation of maximum opportunities for implementation of political and social potential of freedom and initiative of members of society.

Fourthly, the expansion of the activities of local authorities and autonomous bodies of citizen's step-by-step transfer of a part of the powers of governmental authorities. This means that as far as political consciousness and participation of people is growing, the political culture is developing a number of the state functions shall be transferred to the autonomous bodies.

Fifthly, the improving of the system of selection of talented, well-rounded and highly qualified, and devoted to the Motherland young professionals capable to carry out reform tasks in accordance with democratic requirements, as well as the interests of society.

#### **CONCLUSION:**

All in all this is a very difficult and complex process, which has always flowed with difficulties. It requires a change in thinking and outlook of people, elimination of subjectivity phenomena, regionalism and other vices of bureaucratic system. Therefore we need a harmonious and comprehensively developed youth, politically well grounded, able to take control of the state in the future into their own hands. Level increase of political consciousness is one of the important aspects of the educational process within the youth. None of the developed state could exist without the political culture and political consciousness of its citizens. Political culture empowers the youth with such a wealth of knowledge, skills, and cultural values, without which there is no future for this state; as a matter of fact the youth is this future.

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## GENERAL RHEOLOGICAL MODEL OF ELASTIC VISCOSITY FLUIDS

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### ABSTRACT:

The article formulates a generalized model of an elastic-viscous fluid, in particular, from this model one can obtain Newtonian, generalized Newtonian, Maxwellka and other models. Basically, the generalized model of a viscoelastic fluid is built on the basis of the topological hypothesis of Astarit and Marrucci and the axiomatic principles of Truesdell and Knoll. The developed generalized model of a viscoelastic fluid is convenient for solving engineering problems and thus is easily implemented for studying the flow of non-Newtonian fluids in a flat channel and in a circular cylindrical tube.

**KEYWORDS:** Elastic, viscous, Newton's model, Maxwell's model, axiom, flat channel, cylindrical tube.

### INTRODUCTION:

Most fluids have the property of elasticity, which makes up the mechanical memory. In solids, this memory is determined relative to the initial deformation. In fluids, however, there is no concept of initial deformation. That is why in liquids it is studied

to "remember" the preservation of the previous deformation in relation to the state of a moment in time. This in turn greatly complicates the construction of the rheological equation from a phenomenological point of view in finitely deformable elastic viscous fluids. In general, the concept of "memory" in liquids is characterized by the fact that the deformation of the environment creates a relaxation process. Therefore, in elastic viscous liquids, their elastic properties are reflected in the notarial flow more than in other liquids. In stationary flow, the elastic property does not affect the flow. In this case, the elastic viscous liquids are converted into Newtonian liquids, i.e., viscous liquids. In elastic viscous fluids, depending on the type of fluid, the "hereditary factor" can be significantly expressed in these fluids, if the length of the "memory" corresponds to the length of the relaxation process, recalls the area and other hydrodynamic characteristics. Basically, the "hereditary" factor is determined by the number of Deborah. This number is characterized by the ratio of the time of the relaxation process to the time characterizing the main hydrodynamic phenomena, ie:

$De = \frac{\lambda}{T}$  where  $\lambda$  is the relaxation time;  $T$  is

the time characterizing the hydrodynamic phenomena. Typically, this ratio can be from  $10^{-2}$  to  $10^2$  seconds for high-molecular substances, including colloids, dispersion biological substances (elastic viscous liquids) [20]. The motion of elastic viscous fluids is fundamentally different from the motion of fluids that do not have elastic properties. In the development of the motion of elastic adhesive (polymer) fluids under the influence of a pressure gradient, the longitudinal velocity profile is not monotonous like a Newtonian fluid, but rises sharply at the beginning, then decreases after reaching a maximum value, oscillates around a steady-state amplitude does. In elastic viscous fluids as a result of cessation of impact force, deformation causes a unloading process. For example, in a polymer liquid flowing in a pipe, it can be observed that as a result of removing the pressure gradient or equalizing it to zero, a reverse flow is formed in the direction opposite to the main flow direction of the liquid. In this regard, it is important to study the movement of elastic adhesive (polymer) fluids in pipes. To date, rheological models of elastic viscous fluids have been proposed by many scientists for different models of fluids of different types [1-26]. However, among the models proposed so far, there is no single universal model that generalizes all models [2, 20]. Therefore, the theoretical study of convective migration processes of elastic viscous fluids is becoming a complex process. Among the proposed models, we can say that the model, which generalizes the models in a certain sense, is determined by the following nonlinear integral equation [2, 20,21]:

$$T = \int_{-\infty}^t m[(t-t'), S_D(t')] \left[ \left(1 + \frac{\varepsilon}{2}\right) (C_t^{-1}(t') - E) + \frac{\varepsilon}{2} (C_t(t') - E) \right] dt' \quad (1)$$

where

$$m[(t-t')S_D(t')] = \sum_{k=1}^{\infty} \frac{\eta_k}{\lambda_k^2} f_k[S_D(t')] \exp\left[-\int_0^{t'} \frac{g_k(S_D(t''))}{\lambda_k} dt''\right], \quad S_D^2 = 2trD^2$$

$C_t(t')$ - Koshi tensor;  $C_t^{-1}(t')$ - Finger tensor;  
 $E$  - unit tensor.

The general-view elastic viscous fluid model given above (1) includes many models of polymer fluids and other elastic viscous fluids. Basically, the difference between these models is in the assignment of functions  $f_k(S_D(t'))$

and  $g_k(S_D(t'))$ , which are part of the integral equation (1). Especially in small deformations  $f_k = g_k = 1$ , in which case the model of elastic viscous fluids becomes linear. In

numerical accounting,  $\lambda_k$  and  $\eta_k$  are quantities, in particular

$$\lambda_k = \frac{\lambda}{k^\alpha}, \quad \eta_k = \frac{\eta}{\xi(\alpha)k^\alpha}$$

taken in the form of, where  $\eta$  is the dynamic viscosity coefficient of the Newtonian fluid in the initial state;  $\lambda$  - relaxation time,  $\alpha$  - a number that characterizes the spectrum of relaxation time distribution;  $\xi(\alpha)$  - Riman zeta function. It is determined by the

expression in the form  $\xi(\alpha) = \sum_{k=1}^{\infty} \frac{1}{k^\alpha}$ . The

fact that the integral equation in the form of an elastic viscous fluid (1) is equivalent to the differential equation in this form is given in the research work of Z.P.Shulman and B.M.Husid [20]:

$$T = \sum_{k=1}^{\infty} \left(1 + \frac{\varepsilon}{2}\right)' T_k^{(1)} + \frac{\varepsilon}{2} T_k^{(2)}, \quad T_k^{\nabla(1)} + \frac{g_k}{\lambda_k} T_k^{(1)} = 2p_k D, \\ T_k^{\Delta(2)} + \frac{g_k}{\lambda_k} T_k^{(2)} = -2p_k D, \quad \frac{Dp_k}{Dt} + \frac{g_k}{\lambda_k} p_k = \frac{2}{\lambda_k^2} f_k. \quad (2)$$

where the high convective product is through this expression

$$T_k^{(1)} = \frac{DT_k^{(1)}}{Dt} - T_k^{(1)} \nabla V^T - \nabla V \cdot T_k^{(1)}$$

the lower convective product is defined by the following expression

$$T_k^{(2)} = \frac{DT_k^{(2)}}{Dt} + T_k^{(2)} \nabla V + \nabla V^T \cdot T_k^{(2)}$$

Yaumann's product is defined as follows

$$\frac{DA}{Dt} = \frac{\partial A}{\partial t} + V \nabla A + WA - AW$$

Where

$$\nabla V = D + W, \quad D = \frac{1}{2}(\nabla V^T + \nabla V), \quad W = \frac{1}{2}(\nabla V - \nabla V^T)$$

$\varepsilon$  -is introduced as a parameter representing the second normal voltage difference other than zero, which is determined by the following

$$\text{formula} \quad \frac{\varepsilon}{2} = \frac{\Psi_2}{\Psi_1}. \quad \text{Where}$$

$$\Psi_1 = (\sigma_{11} - \sigma_{22}) / \gamma^2, \quad \Psi_2 = (\sigma_{22} - \sigma_{33}) / \gamma^2.$$

It should be noted that the upper convective product, the lower convective product, and the Yaumann product are obtained in the arbitrary coordinate system, which are transformed into ordinary products in the orthogonal system Cartesian and cylindrical coordinate systems.

Three types of rheological models of this type are widely used in practice for numerical calculations in specific cases:

1. Meyster (M) model

$$f_k = 1, \quad g_k = 1 + (c / \sqrt{2}) \lambda_k S_D;$$

2. Berd-Carro (BK) model

$$f_k = 1(1 + \lambda_k^2 S_D^2), \quad g_k = 1;$$

3. McDonald-Baird-Carro (MBK) model

$$f_k = \frac{1 + \lambda_k^1 S_D}{1 + \lambda_k S_D}, \quad g_k = \frac{(1 + \lambda_k^1 S_D)^{3/2}}{(1 + \lambda_k S_D)^{1/2}}, \quad \lambda_k^1 = \lambda^1 / k^\alpha$$

$$\text{where } \lambda_k^1 = x \lambda_k, \quad 0 \leq x \leq 1$$

for all three models:

$$\lambda_k^1 = \frac{\lambda^1}{k^\alpha}, \quad \eta_k = \frac{\eta}{\xi(\alpha) k^\alpha}, \quad S_D^2 = 2trD^2; \quad \lambda_k^1 = x \lambda_k, \quad 0 \leq x \leq 1$$

Where  $c^2 = (2 - 2\varepsilon - \varepsilon^2) / 3$ ; in some cases it is taken as  $\lambda^1 = 0, 2\lambda$ . If  $\lambda^1 = \lambda$ , then the McDonald-Bird-Carro model corresponds to the Meister model;  $k = 1, 2, \dots, \infty$

The Meyster model here takes into account the relaxation time effect of the deformation rate. In the BK model, the deformation rate is related to the shear model, while in the MBK model, it is a generalized model that takes into account changes in relaxation time, as well as the shear model. The formulas for determining the coefficient of dynamic viscosity in a stationary shear are determined in the following form with respect to the Weissenberg number:

$$\begin{aligned} \eta_k(\dot{\gamma}) &= \frac{\eta}{\xi(\alpha)} \sum_{k=1}^{\infty} \frac{k^\alpha}{(k^\alpha + We)^2}, & We &= \frac{c\lambda\dot{\gamma}}{\sqrt{2}} \\ \eta_k(\dot{\gamma}) &= \frac{\eta}{\xi(\alpha)} \sum_{k=1}^{\infty} \frac{k^\alpha}{k^{2\alpha} + We^2}, & We &= \lambda\dot{\gamma} \\ \eta_k(\dot{\gamma}) &= \frac{\eta}{\xi(\alpha)} \sum_{k=1}^{\infty} \frac{k^\alpha}{\left(k^\alpha + We \frac{\lambda^1}{\lambda}\right)^2}, & We &= \lambda\dot{\gamma} \end{aligned} \quad (3)$$

Where  $\dot{\gamma}$  -is the shear deformation velocity or velocity gradient;

$\eta(\dot{\gamma})$  - Newtonian coefficient of adhesion depending on the rate of deformation.

At a small value of the shear rate, i.e.  $|\lambda\dot{\gamma}| \ll 1$ , when  $f_k \rightarrow 1, g_k \rightarrow 1$  is sought, the model under consideration is the same as the spectrum of relaxation time. When  $We = 0$ , the coefficient of adhesion of the three states in

$$\text{formula (3) above is equal to } \eta_k(\dot{\gamma}) = \frac{\eta}{\xi(\alpha) k^\alpha}$$

. However, it is not possible to derive a viscous plastic fluid model from this model in a special

way, because in the hydrostatic (quiescent) state the Maxwell fluid cannot maintain the noisotropic stress state indefinitely. That is, with a change in voltage, of course, fluid motion or deformation occurs. Therefore, the nonstationary state of plastic fluids cannot be expressed by a generalized elastic adhesive model. The above model can be applied to the fluid flow when the velocity gradient  $\dot{\gamma} \geq 0,1 \text{cek}^{-1}$  is present. However, plasticity properties can occur in non-Newtonian fluids when  $\dot{\gamma} \leq 0,1 \text{cek}^{-1}$  accept small values. The creation of a generalized model of such liquids is carried out by conducting separate scientific research. We can cite this in our next research work. Specifically from the model proposed above, it is possible to derive the Newtonian model for the viscous fluid and the Maxwell models for the viscous elastic fluid.

If  $\lambda_k = 0$ , then the equation corresponding to the Newtonian model is derived from the system of equations (2). In fact, being  $\lim(\lambda_k \rightarrow 0)\lambda_k p_k = \eta$ , equation (2) becomes a Newtonian equation in one-dimensional space. That is  $T = \eta \frac{\partial u}{\partial y}$ , which is the

Newtonian mod. By performing the same steps, it is possible to form an equation corresponding to the Maxwell model when  $\alpha \rightarrow \infty$  is attempted (2) from the system of equations  $|\lambda \dot{\gamma}| \ll 1$   $f_k \rightarrow 1$ ,  $g_k \rightarrow 1$  and

when  $p_k = \frac{\eta_k}{\lambda_k}$  is satisfied. In conclusion, it can

be said that the system of equations in the form (2) is a generalized model of elastic viscous fluids in a certain sense.

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## PROSPECTS FOR EFFECTIVE USE OF SOME DESERT PLANTS

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### ABSTRACT:

**The article provides information, that in response to reduced hydrocarbon resources in Uzbekistan, one of the main directions of alternative sources of energy can be use of biomass of some halophyte plants.**

**The results have high scientific and practical importance, which serve for the development of new alternative energy sources.**

**KEYWORDS: power industry, alternative sources of energy, renewable energy sources, halophyte, bioethanol, biogas.**

### INTRODUCTION:

Biomass is a renewable energy source. The term "biomass" is used to refer to parts of plants where energy can be extracted, as well as their remains [2]. It can be used as a universal alternative energy source to produce environmentally friendly gas, fuel and electricity. Interest in the use of biomass as an energy source, primarily the annual re-emergence of biomass; the stored energy can be stored and used for a long time as desired; the possibility of converting this energy into other types of energy; and in some regions, this source of heat is cheaper than natural heat sources; being an environmentally friendly heat source; its use does not produce toxic sulfur oxides in the environment; This is due to the fact that the balance of carbon dioxide in the atmosphere does not change and a number

of other reasons [3]. In recent years, plant biomass has been used mainly to extract bioethanol and biogas.

Bioethanol is a form of ethanol that is currently used as a fuel to process organic waste from plants. According to the IAEA, the annual production of bioethanol worldwide is estimated at 36.3 billion tons. liter equal. Brazil is currently the world leader in bioethanol production. In this country, 44-46% of fuel demand is met by bioethanol production. The Brazilian experience of ethanol production in the United States, France, India, Japan, the Philippines, Latin America, Africa, and Asia has been studied with great interest and is being widely used. According to the latest data, the technology of obtaining ethanol from residual biomass has been introduced in 43 countries around the world and has become an integral part of their economies [4]. In these countries, bioethanol is obtained from plants that can be widely used in the national economy, such as Jerusalem artichokes, peanuts, and sugar cane, and has a number of disadvantages [5]. Biogas is an energy product obtained by digesting organic waste. While the first information about biogas began to appear in the early 18th century, its technology was fully explored in the early 20th century. During World War II, the demand for electricity in France and Germany reached catastrophic levels, and attention was focused on the use of agricultural waste, including manure, in the production of biogas. By the mid-1940 s, more than 2,000 biogas plants had been put into operation in

France. Similar equipment has been built on many Hungarian farms. In the United States, special attention is paid to the production of biogas from manure, because, firstly, in terms of energy, and secondly, about half of the economically viable conversion of annual waste on all livestock farms into biogas in large livestock complexes (large horned animals, pigs and poultry). German livestock annually collect 200 million tons of manure, including 70 million tons of liquid manure. Scientists and experts estimate that when the above-mentioned amount of manure is processed in biogas plants, it is possible to obtain energy equal to 4% of the national energy requirements. In the UK, 3.2% of the country's natural gas demand is met by biogas. A total of 2.3 million tons of gas equivalent to oil can be produced annually from the processing of manure from cattle, pigs and poultry. Japan's agriculture produces 56.5 million tons of manure a year. When this amount of manure is fully recycled, 1.7 billion m<sup>3</sup> of gas or 1 million tons of oil can be replaced. The country is working on a program to accelerate the development of livestock production, with a special focus on this technology. Russia also has great potential for biogas production. Annually, livestock farms produce 665 million tons of manure, each of which can be produced by anaerobic fermentation to produce 15-20 m<sup>3</sup> of biogas with a heat output of 5600-6300 kcal / m<sup>3</sup>.

One of the main principles of India's energy policy is the production of biogas in rural areas. Fundamental and applied research in this field is mostly conducted at the Center for Biochemical Engineering of the Indian Institute of Technology. According to the country's scientists, converting 300 million tons of cattle manure into biogas each year could save 33 million tons of oil (0.11 tons of oil equals 1 ton of manure). Today, there are

more than 1 million small biogas generators in India. This technology is very advanced in China. There are more than 200 million devices in the country. It is noteworthy that the country has established bodies to control the use of digest. Digestors are installed in every individual family, especially in remote areas, on livestock and poultry farms, small businesses, and elsewhere. Biogas production technology is widespread in the Philippines, Guatemala, Israel. In these countries, in addition to livestock and poultry wastes, continuous methanization is carried out in a variety of organic wastes, including plant biomass residues [7]. According to experts, the amount of energy released from the annual biomass on Earth is theoretically 2900 Edj / year [8].

Currently, natural gas (91.8%), oil (7.0%), hydropower (1.3%), coal (0.01%) and others (0.03%) are widely used as primary energy sources in Uzbekistan. [9]. Uzbekistan's reserves of hydrocarbons are about 5.1 billion tons of oil equivalent, including about 245 million tons of oil, 1979 million tons of natural gas and 2,850 million tons of coal. When the population dynamics in the country is equal to today's level, the existing oil reserves are projected to last for 10-12 years, natural gas reserves for 28-30 years, and coal reserves for more than 50 years [10].

Based on the above problems, special attention is paid to the development of non-traditional methods and technologies of energy production in Uzbekistan, the creation of alternative energy sources for them and their implementation in practice (including the President of the Republic of Uzbekistan "Alternative energy sources"). F PF-Decree No. 4512 of March 1, 2013 "On measures for further development"). It is important to study the possibility of using alternative energy sources as the most important factor in the sustainable development and competitiveness

of the economy in the context of declining global hydrocarbon production in economically developed and developing countries [1].

Most of Uzbekistan's territory is desert. The deserts have a unique floristic composition and are mainly used as fodder for small cattle. However, among the desert plants, there are some plant groups, such as halophyte plants, which are not used in the national economy, but produce a lot of biomass. They have a relatively heavy wood, which breaks down quickly and has a good fuel base, and the heat is not inferior to that of coal. If the stems of these plants are burned in the traditional way, they will release large amounts of CO<sub>2</sub> and pollute

the environment [11]. In order to use the biomass of halophyte plants wisely, it is necessary to study in practice the technology of obtaining bioethanol, biogas or biofertilizers based on their fermentation.

Halophyte-type plants can be found in the Mingbulak sandy desert in the Central Kyzylkum, in the lower reaches of the Zarafshan. According to EP Korovin (1964), 256 species of halophilous plants have been identified in Uzbekistan. MG Popov (1940), KZ Zokirov (1955) and II Granitov (1969) studied the flora of the desert sands of the Kyzylkum and Zarafshan valleys.



*Halocnemum strobilaceum*



*Halostachys belangeriana*



*Climacoptera lanata*



*Tamarix hispida*



*Haloxylon aphyllum*

Figure 1. Halophyte plants that can be used as alternative energy sources

Among the halophytic plants that are not widely used for agricultural purposes in the saline areas of the Central Kyzylkum sandy and loamy soils, saline basins and artesian wells, we can include the following:

- *Halochnum strobilaceum*;
- *Halostachys belangeriana*;
- *Climacoptera lanata*;
- *Karelinia caspia*;
- *Tamarix hispida*;
- *Haloxylon aphyllum*.

The above-mentioned plants differ from other halophyte plants by their high biomass production, their almost no use as fodder for livestock, and their lack of medicinal properties.

*Halochnum strobilaceum* is a hypergalogite shrub up to 70 cm tall. The annual branches are divided into seret and joints. The earth grows steeply and forms many cushioned biomass [12, 14].

*Climacoptera lanata* is an annual herb that grows up to 10-45 cm in height. The stem is highly branched at the base and forms a large biomass. The leaves are fleshy.

*Karelinia caspia* is a shrub with many stems, about 15-75 cm long. Widespread in bald and saline areas.

*Haloxylon aphyllum* is a xeromorphic tree belonging to the *afil* group. Adapted to growing in saline soils, the average height of the stem is 70 cm. A number of experts have suggested that the saxophone's stem is a good fuel.

*Tamarix hispida* is a common shrub in the vicinity of water bodies and has a large number of stems. The flammability of the stem is high [13].

It is important to conduct research to assess the potential of plants that are common in desert areas and are not used for their intended purpose in the economy.

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# ANALYSIS OF ELECTRICAL SYSTEM USING ARTIFICIAL NEURAL NETWORK

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## ABSTRACT:

Electricity is undergoing unprecedented change. Recently, the use of artificial intelligence has become more and more important in all fields. In this paper, the determination of the voltage and voltage deviation angles in each bus when the active and reactive power loads on five busbars are given is solved using the Newton - Raphson and Artificial Neural Network methods. Also, the results obtained by the Artificial Neural Network method were compared with the Newton - Raphson method.

**KEYWORDS:** Artificial Neural Network, neuron, input, intermediate and output neurons, dendrites, synapses, computing network, voltage, voltage deflection angle.

## INTRODUCTION:

It is known that the human brain and nervous system are made up of many nerve cells - neurons, which are interconnected by nerve fibers. Nerve fibers are used to exchange information, receive signals from receptors, and transmit control impulses to effectors. The nervous system and brain are made up of more than 100 billion nerve cells.

Every action, thought, and emotion is carried out in a living organism as a neuronal

transition of a special electrochemical substance called a neurotransmitter. Neurons have an unusual structure that is different from other cells in our body. The body of the neuron makes up the largest mass of the entire neuron. It contains a cell nucleus that contains genetic information. From the body of the neuron there are dendrites, the longest of which is called the axon (Fig. 1).

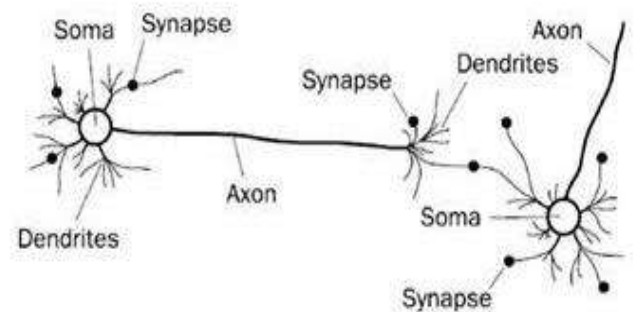


Figure1. Biological Neural Network

Nerve cells and their tumors are covered by a protective membrane that electrifies neurons called myelin sheaths. The axon communicates with the dendrites of other neurons through specific compounds that amplify and correct nerve signals called synapses.

Thus, our brain is a kind of "computing network" that constantly (even when we are asleep) processes information.[1]

Neural networks are a computerized form of neurons in the human brain, each of which is made up of neurons that are connected to each other and process information. The layer of neurons that receive external information is called input neurons, and the neurons that produce ready-made results are called output neurons. Interstitial neurons are called internal or latent neurons. Each neuron has multiple inputs and only one output. The advantage of ANNs is that they can be trained, which means that the error of the output signals can be deliberately reduced to a minimum value. [2] An artificial ANN model will be developed, trained and tested. (Figure 2).

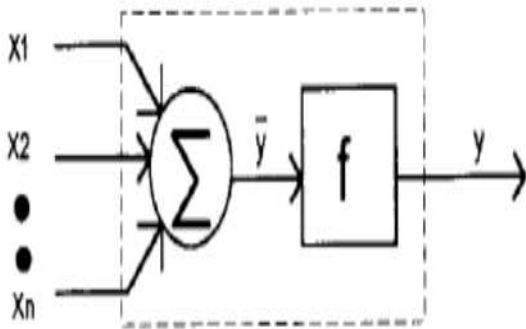


Figure 2. Artificial Neural Network.

**ANALYSIS OF THE ELECTRICAL SYSTEM USING THE NEWTON-RAPHSON METHOD:**

To analyze the electrical system, we select the following system. The system should be equipped with five busbars, a power plant and an unlimited power supply. (Fig. 3)

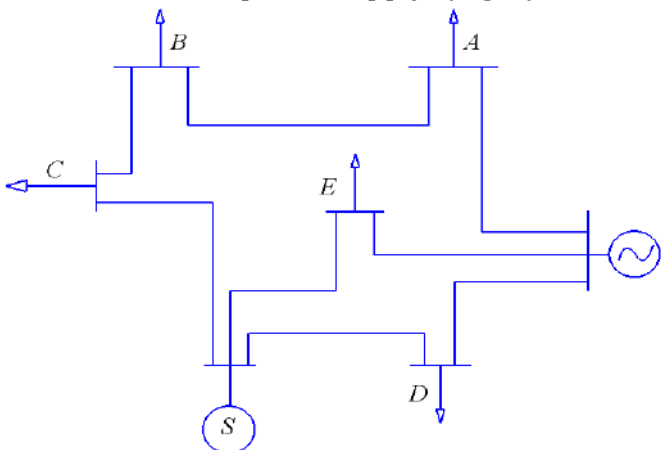


Figure 3. Selected electrical system.

Table 1. Busbar Loading Values

	Busbar A	Busbar B	Busbar C	Busbar D	Busbar E
P <sub>1</sub> (MVt)	52	70	79	76	68
P <sub>2</sub> (MVt)	50	68	67	74	66
P <sub>3</sub> (MVt)	48	66	65	72	64
P <sub>4</sub> (MVt)	66	62	59	68	60
P <sub>5</sub> (MVt)	63	79	87	85	76
Q <sub>1</sub> (MVAr)	25,18472	33,90255	35,99335	41,02045	28,96789
Q <sub>2</sub> (MVAr)	24,21608	32,93391	30,52601	39,94096	28,1159
Q <sub>3</sub> (MVAr)	23,24744	31,96527	29,61479	38,86147	27,2639
Q <sub>4</sub> (MVAr)	31,96523	30,02798	26,88113	36,7025	25,55991
Q <sub>5</sub> (MVAr)	30,51228	38,26143	39,63831	45,87814	32,37587

Table 2. Power line brand parameters.

Power line	U <sub>n</sub> (kV)	Power line brand	The length of the power line (km)	R <sub>0</sub>	X <sub>0</sub>	B <sub>0</sub> *10 <sup>-4</sup>
G - B	220	AC-400	30	0.075	0.42	0.027
B - A	220	AC-240	42	0.121	0.435	0.026
A - C	220	AC-240	31	0.121	0.435	0.026
C - System	220	AC-240	35	0.121	0.435	0.026
G - E	220	AC-300	45	0.096	0.429	0.0264
E - System	220	AC-240	46	0.121	0.435	0.026
G - D	220	AC-300	55	0.096	0.429	0.0264
D - System	220	AC-240	43	0.121	0.435	0.026

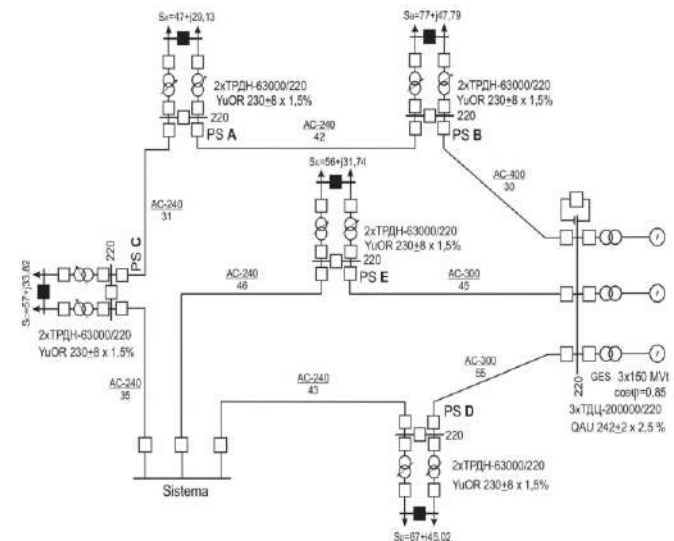


Figure 4. Schematic diagram of the selected electrical system.

Given several values of the load on five buses, we find the absolute value of the voltage in each bus and the values of the voltage deviation angle (Table 3) using the Newton - Raphson method in the DigSILENT PowerFactory program used in electrical system analysis and

compare with the results obtained using the ANN method. (Figure 4)

In the DigSILENT PowerFactory program, using the Newton – Raphson method, we can find the stresses and strain angles in the tires when the load values on the tires (Table 1). (Table 3)

(Table 3)

	Busbar A	Busbar B	Busbar C	Busbar D	Busbar E
$U_1$ (kV)	6,133828	5,930085	5,881859	6,018489	6,084519
$U_2$ (kV)	6,151551	5,951327	5,909349	6,027073	6,092985
$U_3$ (kV)	6,173292	5,972878	5,92486	6,040765	6,105939
$U_4$ (kV)	6,129817	5,961082	5,92337	6,038003	6,10136
$U_5$ (kV)	6,079519	5,879147	5,846624	5,986465	6,055647
$U_{1\text{phiu}}$ (grad)	1,484291	0,8926295	1,657673	0,1138167	0,621181
$U_{2\text{phiu}}$ (grad)	1,667045	0,6632786	1,286867	0,2119523	0,7245269
$U_{3\text{phiu}}$ (grad)	1,908016	0,4125734	1,094695	0,3736177	0,8920599
$U_{4\text{phiu}}$ (grad)	1,337883	0,5388077	1,091214	0,3423419	0,8485606
$U_{5\text{phiu}}$ (grad)	0,880085 6	-1,478829	2,082702	-0,258953	0,2580654

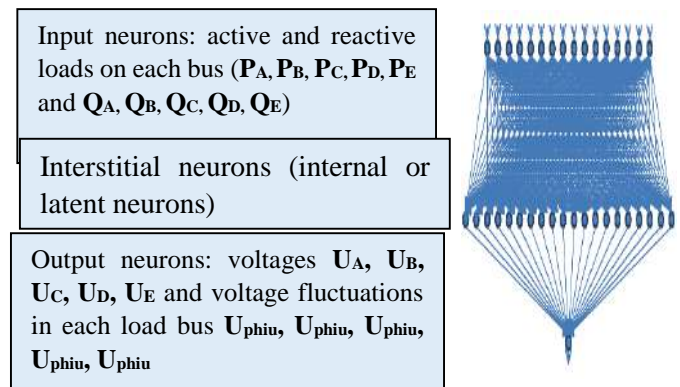
### ANALYSIS OF ELECTRICAL SYSTEMS USING THE ARTIFICIAL NEURAL NETWORK METHOD:

ANN is currently used to solve many problems in the power system of a power plant. Power can be used to accurately forecast loads, determine electrical system parameters, monitor power plants, and analyze short circuits and system stability [3].

In the analysis of voltages and voltage deviations in each load bus in the electrical system selected using the ANN method (Figure 3), the MATLAB program provides external data, ie the previous 50 active reagents and loads on each bus in the circuit given to us ( $P_A, P_B, P_C, P_D, P_E$  and  $Q_A, Q_B, Q_C, Q_D, Q_E$ ). These layer of receptor neurons are called input neurons. Intermediate neurons are then trained and examined in internal or latent neurons. Hidden neurons have multiple inputs and only one output. [4] Eventually the voltages on each loading bus  $U_A, U_B, U_C, U_D, U_E$  and the voltage deviation  $U_{\text{phiu}}, U_{\text{phiu}}, U_{\text{phiu}}, U_{\text{phiu}}, U_{\text{phiu}}$  i.e. ready

results are formed. These neurons are called outgoing neurons.

The following figure illustrates the process of working in ANN in MATLAB.



A

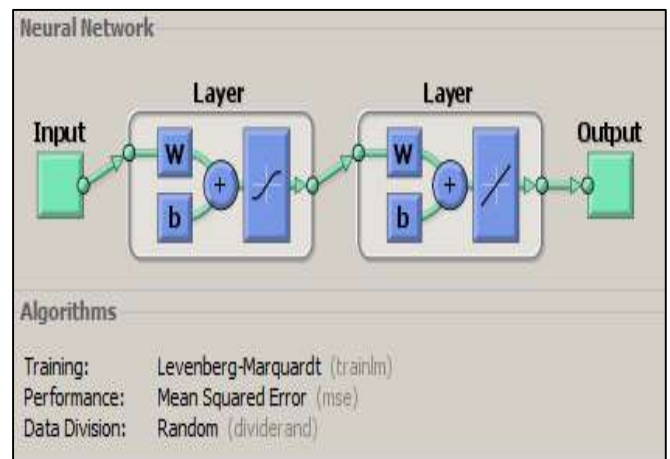


Figure 5. a) Artificial Neural Network Scheme;  
b) Artificial Neural Network Scheme in MATLAB

Incoming data in the ANN, that is, the load on the bus, is variable. Not all parameters of the EULs in the circuit remain the same. ANN has 10 incoming neurons ( $P_A, P_B, P_C, P_D, P_E$  and  $Q_A, Q_B, Q_C, Q_D, Q_E$ ), 17 latent neurons and 10 outputs ( $U_A, U_B, U_C, U_D, U_E$  and  $U_{\text{phiu}}, U_{\text{phiu}}, U_{\text{phiu}}, U_{\text{phiu}}, U_{\text{phiu}}$ ).

50 active and reactive powers were used in the formation of ANN. 70% of the data included in the ANN in the formation of the output values were used in the training process, and 30% were used for the verification process. The training was completed in 94 iterations. (Figure 6)



We compare the results of the ANN with the Newton – Raphson method. Table 4 shows the difference between the two methods.

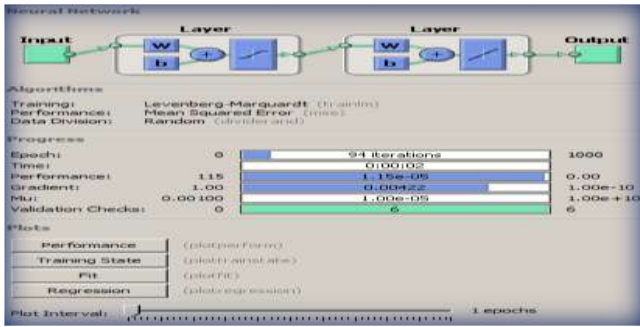


Figure 6. The teaching process at ANN

Table 4. When there are 17 latent neurons, the results are in percent.

Busbar 1	Newton - Raphson		Artificial Neural Network		Difference	
	Voltage (kV)	Angle (grad)	Voltage (kV)	Angle (grad)	Voltage (kV)	Angle (grad)
P <sub>1</sub> ,Q <sub>1</sub>	6,133828	1,484291	6,134	1,484	0,002804043	0,01960532
P <sub>1</sub> ,Q <sub>1</sub>	6,151551	1,667045	6,152	1,667	0,00729844	0,002699387
P <sub>1</sub> ,Q <sub>1</sub>	6,173292	1,908016	6,162	1,908	0,183252191	0,000838574
P <sub>1</sub> ,Q <sub>1</sub>	6,129817	1,337883	6,13	1,338	0,002985318	0,008745159
P <sub>1</sub> ,Q <sub>1</sub>	6,079519	0,8800856	6,08	0,8802	0,007911184	0,012998736
Busbar 2	Newton - Raphson		Artificial Neural Network		Difference	
	Voltage (kV)	Angle (grad)	Voltage (kV)	Angle (grad)	Voltage (kV)	Angle (grad)
P <sub>2</sub> ,Q <sub>2</sub>	5,930085	-0,8926295	5,93	-0,8927	0,00143339	0,007898014
P <sub>2</sub> ,Q <sub>2</sub>	5,951327	-0,6632786	5,951	-0,6631	0,005494875	0,026926845
P <sub>2</sub> ,Q <sub>2</sub>	5,972878	-0,4125734	5,962	-0,4175	0,182455552	1,491602339
P <sub>2</sub> ,Q <sub>2</sub>	5,961082	-0,5388077	5,961	-0,539	0,001375608	0,035689913
P <sub>2</sub> ,Q <sub>2</sub>	5,879147	-1,478829	5,879	-1,479	0,002500425	0,011563203
Busbar 3	Newton - Raphson		Artificial Neural Network		Difference	
	Voltage (kV)	Angle (grad)	Voltage (kV)	Angle (grad)	Voltage (kV)	Angle (grad)
P <sub>3</sub> ,Q <sub>3</sub>	5,881859	-1,657673	5,882	-1,658	0,002397144	0,019726448
P <sub>3</sub> ,Q <sub>3</sub>	5,909349	-1,286867	5,909	-1,287	0,005906245	0,010335178
P <sub>3</sub> ,Q <sub>3</sub>	5,92486	-1,094695	5,917	-1,091	0,132837587	0,338680110
P <sub>3</sub> ,Q <sub>3</sub>	5,92337	-1,091214	5,923	-1,091	0,006246834	0,019611185
P <sub>3</sub> ,Q <sub>3</sub>	5,846624	-2,082702	5,847	-2,083	0,006430648	0,014308336
Busbar 4	Newton - Raphson		Artificial Neural Network		Difference	
	Voltage (kV)	Angle (grad)	Voltage (kV)	Angle (grad)	Voltage (kV)	Angle (grad)
P <sub>4</sub> ,Q <sub>4</sub>	6,018489	0,1138167	6,018	0,1139	0,008125623	0,073187854
P <sub>4</sub> ,Q <sub>4</sub>	6,027073	0,2119523	6,027	0,2123	0,001211216	0,164046344
P <sub>4</sub> ,Q <sub>4</sub>	6,040765	0,3736177	6,034	0,3733	0,112114683	0,085105813
P <sub>4</sub> ,Q <sub>4</sub>	6,038003	0,3423419	6,038	0,3423	4,96853E-05	0,012239226
P <sub>4</sub> ,Q <sub>4</sub>	5,986465	-0,2589536	5,986	-0,259	0,007768126	0,017918268
Busbar 5	Newton - Raphson		Artificial Neural Network		Difference	
	Voltage (kV)	Angle (grad)	Voltage (kV)	Angle (grad)	Voltage (kV)	Angle (grad)
P <sub>5</sub> ,Q <sub>5</sub>	6,084519	0,621181	6,084	0,6208	0,008530572	0,06133478
P <sub>5</sub> ,Q <sub>5</sub>	6,092985	0,7245269	6,093	0,7243	0,000246184	0,031316988
P <sub>5</sub> ,Q <sub>5</sub>	6,105939	0,8920599	6,099	0,898	0,11377275	0,661481069
P <sub>5</sub> ,Q <sub>5</sub>	6,10136	0,8485606	6,101	0,8481	0,005900672	0,054280154
P <sub>5</sub> ,Q <sub>5</sub>	6,055647	0,2580654	6,056	0,2583	0,00582893	0,090907189

## CONCLUSION:

The main problem in analyzing the power flow in an electrical system is that many parameters need to be analyzed in a short period of time. To overcome this problem, one of the methods of power flow analysis in many modern electrical systems is ANN.

The paper provides a comprehensive analysis of power flow in a five-bus system. Performed by the first classical method, the Newton-Raphson method. The artificial neuron was then performed in a network. The solutions for comparison can be seen in Table 4. The statistics of the proposed method solutions satisfy the error limits of the approach to classical method solutions. Comparisons show that the artificial neural network method can be used to analyze power flow problems in electrical systems.

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## IMPROVEMENT OF OPTICAL CHARACTERISTICS OF GLASSES OF PHOTOELECTRIC BATTERY

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### ABSTRACT

**Applying an antireflection coating on the glass base of a photovoltaic battery can increase its efficiency by 6-8%. The refractive index and the thickness of the antireflection coating weakly depend on the value of the refractive index of the glass. Based on this, it is concluded that the application of an antireflection coating to glass does not require strict technological regulations.**

**KEYWORDS: antireflection coating, solar cell, efficiency, refractive index.**

### INTRODUCTION:

The efficiency of solar energy is increased by optimizing its design and reducing non-fundamental energy losses, i.e. energy losses due to the technology of their production. Non-fundamental energy losses also include optical losses, the methods of reducing which are known: structuring the surface of solar energy, applying an antireflection coating to the front and metal layers on the back surface of solar energy, reducing the contact area and the depth of the p-n junction [2-5].

### MAIN PART

A common structural element (mechanical basis) of various types of photovoltaic batteries (PB) is a glass sheet, the optical properties and thickness of which strongly affect the amount of generated electric

current. It is possible to increase the flow of solar radiation through the glass both by reducing the thickness of the glass and by applying an antireflection coating (AC) on it. With a decrease in thickness and an increase in the glass area, its mechanical strength decreases, and thermal hardening of the glass in some cases leads to a deterioration in its optical characteristics [6]. The glass surface reflects ~ 5% of the incident solar radiation. Therefore, to reduce the reflection of solar radiation in the production of photovoltaic batteries (PB), corrugated glass is used on one side. However, in countries with hot climates, the troughs quickly fill up with dust, and the efficiency of the PB is significantly reduced.

Antireflective coatings for glass were not used in the production of PBs because they require materials with a refractive index of ~ 1.18 - 1.24 to apply them, and besides Na<sub>3</sub>AlF<sub>6</sub> and MgF<sub>2</sub>, there are no other dielectric materials with such a refractive index [7.8]. The application of multilayer coatings is unprofitable.

Currently, EISA (evaporation-induced self-assembly) technology allows the application of single-layer transparent coatings with low refractive index on glass [9-11]. In this case, the sol-gel process, which is based on the EISA technology, can be used for the production of photovoltaic batteries on an industrial scale [11].

This work is devoted to optimizing the optical characteristics of the mechanical basis of the PB in order to increase its efficiency.

We choose as a criterion for increasing the efficiency of solar energy (PB) the relative change in the coefficient of performance of solar cells:

$$\gamma = \left| 1 - \frac{\eta_1}{\eta_2} \right| \quad (1)$$

$\eta_1, \eta_2$  - coefficients of efficiency of the same SE (PB) before and after optimization. If you use the expression for the coefficient of performance SE

$$\eta = ff \frac{j_{sc} U_{oc}}{W} \quad (2)$$

then (1) can be written as

$$\gamma = \left| 1 - \frac{j_{sc,1}}{j_{sc,2}} \right| \quad (3)$$

$j_{sc}$  is short circuit current density,  $U_{oc}$  is the open circuit voltage,  $ff$  is the filling factor (coefficient) of the current - voltage characteristic, and  $W$  is the energy flux density of solar radiation. The dependence of the short circuit current density on the optical properties of glass, AP, and SE has the form:

$$j_{sc} = \frac{q}{hc} \int_{\lambda_1}^{\lambda_2} \lambda \cdot T(\lambda) \cdot E(\lambda) \cdot Q(\lambda) \cdot (1 - R(\lambda)) d\lambda \quad (4)$$

$q$ - electron charge,  $h$ - Planck constant,  $c$ - speed of light,  $\lambda$  - wavelength of solar radiation,  $E(\lambda)$  - spectral distribution of the energy flux of solar radiation,  $T(\lambda)$  - glass transmittance,  $Q(\lambda)$  - collection rate,  $R(\lambda)$  - glass reflection coefficient- AC - SE,  $\lambda_1, \lambda_2$  - boundaries of the region of spectral sensitivity of SE.

Since the dispersion of the refractive index of glasses is insignificant in the solar region of the spectrum, the transmission coefficient in (4) can be replaced by the average value and taken out of the integral sign, then (3) can be written as

$$\gamma = \left| 1 - \frac{T_1}{T_2} \right| \quad (5)$$

To reduce to zero the light reflection coefficient at a wavelength of  $\lambda$ , need to be applied to the surface of the glass AC with a refractive index  $n_a = \sqrt{n}$  and optical thickness of  $0.25\lambda$ . If as a result of optimization  $T_2 \sim 1$ , then the increment in the efficiency of SE will be the largest:

$$\gamma_{\max} = 1 - T_1 \quad (6)$$

The transmittance (Fig. 1) of glasses of different thicknesses and different manufacturers were measured on a Lambda EZ 150 spectrophotometer. As expected, the transmission of transparent glasses (curves 2, 3) is almost independent of their thickness. Using the results of measurements of the transmittance, it is possible to calculate the refractive index of a transparent or weakly absorbing glass:

$$n = \xi + \sqrt{\xi^2 - 1} \quad (7)$$

Where  $\xi = \frac{2}{\sqrt{T}} - 1$ . The calculated values of the refractive index of KI glass (spectra 1.2) and photographic plates (spectrum 4) correspond to the published data [7.8].

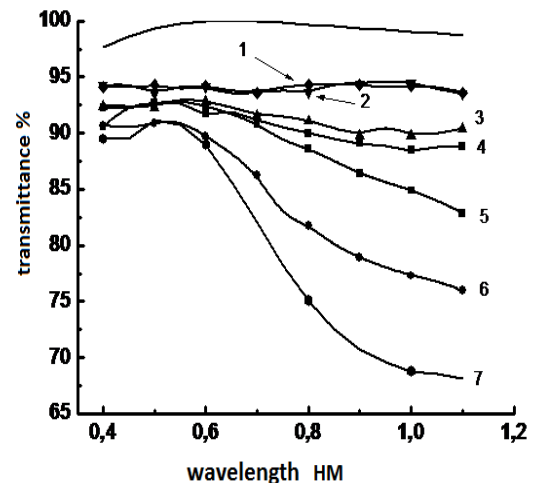


Fig. 1 Glass transmission spectra: without number - AC system - glass; 1 - KI glass (4 mm);

2 - KI glass (2 mm); 4 - photographic plate, (1.4 mm); 4 - glass made in South Korea, (2 mm); 5 - glass made in China, (6 mm); 6 - glass made in Russia (5.3 mm).

For spectra 4–6, overestimated refractive indices (1.63 and 1.81) were obtained due to the fact that formula (7) is not applicable for absorbing and weakly absorbing thick glasses. Table 1 shows the results of calculating  $n$ ,  $\gamma_{\max}$ ,  $n_a$  and antireflection coating thickness  $d_a$  for the wavelength  $\lambda = 0.65 \text{ mkm}$

Curve number	T, %	n	$n_a$	$d_a, \text{nm}$	$\gamma_{\max}, \%$
1	94.0	1,42	1,19	136.0	6,0
2	94.0	1.42	1,19	136.0	6,0
3	91.4	1.53	1,24	131.0	8,6
4	90.6	1.56	1,25	130.0	9.4

From table 1 it follows that the refractive index and the thickness of the AP weakly depend on the value of the refractive index of the glass. So, when the glass refractive index changes from 1.42 (CI glass) to 1.53 (photographic plate), the AC refractive index increases by 4%, and the thickness for wavelength  $\lambda = 0.65 \text{ mkm}$  decreases by 3.7%. It can be assumed that the technology of applying AC to glass does not require strict observance of the values of these values. Calculation of the spectral transmittance of the AC system - glass confirmed this assumption [2]. In the calculations, the refractive index of glass varied from 1.4 to 1.53, and the thickness and refractive index of ACs varied within  $1.19 \leq n_a \leq 1.24$  and  $136 \text{ nm} \geq d_a \geq 130 \text{ nm}$ . The calculation results are presented in Fig. 1 (curve without number). The average value of the transmittance for the region of spectral sensitivity of solar energy ( $\lambda_1 = 0.4 \text{ mkm}$ ,  $\lambda_2 = 1.11 \text{ mkm}$ ) amounted to 99%, and for the solar region of the spectrum (0.4 - 2.55 mkm) 97%. Application of AC to the glass surface leads to an increase in efficiency by 6-8%

Based on the results obtained, the following conclusions can be drawn:

- By applying AP to a glass base, it is possible to increase the efficiency of the PB by 6–8%;
- AC application does not require strict technological regulations, as refractive index and thickness may vary within certain limits;

### CONCLUSION:

The optimal parameters of the ranges of the electron beam are found (heat density, velocity, displacement), within which there is improvement of the physical and mechanical properties of surface layers of optical elements: there is no formation of negative defects on their surfaces which become atomically smooth (residual microscopic ridges do not exceed 0.5... 1.5 nm); the microhardness of the surface increases, hardened layers are formed with compressive stresses. This leads to the reduction of the light scattering coefficient of surface layers of elements and increase of their coefficient of infrared radiation transmittance and, ultimately, to the improvement of metrological characteristics and reliability of devices under intensive external thermal action.

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## STRUCTURE OF ENGLISH TERMINOLOGICAL WORDS FOR INTERNATIONAL TOURISM

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### ABSTRACT:

**This article discusses the issues of the structure of English terminological phrases of international tourism. The purpose of this article is to point out the features of terminological phrases.**

**KEYWORDS: term, tourism, terminological phrase, term element, quasi-term.**

### INTRODUCTION:

Among the English terminological phrases (TS), the dominant is the substantive model of attributive phrases, where the noun acts as a prepositive definition. A word combination, the structural formula of which is presented as "N + N" (abbreviation system: N - noun; A - adjective; Ving - verb form ending in -ing; Ved - verb form ending in -ed; Adv - adverb; Num - numeral; P - pronoun; p - preposition; c - union), are easily created in the system of modern English tourist terminology. 170 phrases of this type were identified, which is 33% of the total number of studied English terms and 60% of the number of English vehicles (air travel - the number of hours spent in the air; baggage car - luggage car; baggage room - luggage room).

### MAIN PART:

An interesting two-component terminological phrase is Island hopping, where the participle hopping is substantivized, thus this combination refers to the "N + N" model.

It should be noted that this structural type of attributive word combinations in

English occurs much more often than in Russian. This is a combination of two nouns, in which the first word acts as a definition to the second (adventure tour - an adventure tour; baggage car - a luggage car; budget tourism - social tourism; business tourism - business tourism). In Russian, such attributive relations can be expressed by a relative adjective with an affix indicator (adventure, baggage, social, business). In the English language, if the first word does not have an adjective affix of a multicomponent term, it is difficult to unambiguously determine to which part of speech the definition word belongs and, accordingly, it is difficult to distinguish between a phrase and a complex word.

This kind of terminological formations are on the border separating complex words and phrases themselves. Although the problem of distinguishing a complex word and a phrase is ambiguous, both in domestic and foreign linguistic literature, even a superficial review of the main sources of information on this issue made it possible to identify some general principles sufficient to develop the main strategic line of the authors when analyzing two-component phrases such as "N + N".

Among the most frequently mentioned criteria for differentiating complex words and phrases are phonetic criterion, for example, continuous pronunciation, single stress, combination of phonetic and semantic criteria, criterion of semantic cohesion of components [1, p.105], [2, p.17].

There are also other criteria that are more practical in nature, for example, one of the obvious signs of a complex word is the

impossibility of using other words between its elements, as well as the impossibility of changing the order of the components [5, p.67].

All of the above distinctive features are manifestations of the basic distinctive characteristics of a complex word, namely, the integrity of semantics and integrity, in other words, the formal and logical integrity of the complex word [3, p.256].

The primary signs of a complex word as a whole are:

- The behavior of education as a single formative basis;
- Behavior of education as a single word-forming basis;
- The impossibility of separating the components of education in any other words;
- Continuous pronunciation or continuous or hyphenated spelling of education;
- The presence of a single stress [4, p. 457].

The analysis of word combinations like "N + N" in view of the above demonstrated the following.

In our case, such phrases are mainly spelled separately, but in some sources they can also be found in the form of a compound word, usually in hyphenated spelling, for example, baggage-man (porter), baggage room (storage room) or baggage man, baggage room; or even merged, for example, customhouse, custom-house (customs).

In addition, in the studied lexical array, there are phrases, the defining component of which is expressed in a chain term-element, which, in turn, makes it difficult to correlate it with one or another part of speech. Examples of such chain terms, which include at least three relatively independent foundations, are: around-the-world journey (travel around the world); coast-to-coast flight (transatlantic flight); round-the-world trip (trip around the world). It seems fair to rely on the base (world) component ((coast / coast) component) of the

chained term when defining a part of speech of this kind of terminology.

In this regard, English approaches the languages of the isolating type, in which the "bare" roots of words are juxtaposed, without grammatical design. It is with these that the existence of variants of writing the same terms is connected: merged, hyphenated, separate.

The next most common are attributive terminological phrases with an adjective in the function of prepositive definition: advance timetable (advance schedule of regular flights); American Plan (American plan); common room (common room); continental breakfast (continental breakfast). The structural formula of such phrases is "A + N".

Less common are phrases with the present participle in the role of a prepositive definition, the structure of which can be determined by the formula "Ving + N", for example, bathing place (seaside resort); crossing tour (tour across the whole country); dining car (dining car); boarding card (boarding hoist).

Being in a preposition to the nuclear component of a phrase, the present participle acquires adjective properties, since it becomes a means of expressing signs of the same type as is expressed by an adjective. However, the status of the first element in such phrases is not yet fully defined, and the definition of this status raises some controversy.

Indeed, the present participles, acting as a determinant of nouns, are likened to a certain extent to adjectives, but traditionally it is believed that the participles of the so-called "terminative" (or "conclusive") verbs in English retain the property of the latter to express temporal relations (compare camping trip ) in contrast to the present participles "non-terminative" (or "inconclusive") of verbs, which are less characteristic of the reflection of processes and which, therefore, are carriers of



a constant attribute (compare boarding house). But in both cases, it is obvious that the participles become carriers not of a procedural (temporary), but rather a specific feature of the noun being defined.

This is also confirmed by the results of transformational analysis, which in some cases showed the possibility of transforming the phrase "present participle + noun" into a combination of "noun + gerund", for example: sleeping car - car for sleeping (car for sleeping).

Somewhat less common are terminological phrases such as escorted tour (a tour accompanied by a guide or tour leader); chartered flight (charter flight); conducted tour (tour accompanied by a guide or tour leader); guided tour (tour accompanied by a guide or tour leader), formed according to the "Ved + N" model, that is, the first element of which is the participle of the past tense, the meaning of which, as in the previous case, has lost its temporal character and acquired the character of quality and which in Russian cannot be translated by the corresponding participle.

Among the compound terms, a model with numerals in the role of the defining element "Num + N" was revealed: first class; second class; third class.

An insignificant number of tourist terms are formed using a noun in the possessive case as a prepositional definition of the model "N's + N" - traveler's check; traveller's check, the first component of which reflects a sign of animation, is insignificant from the point of view of terminological use.

Among the ternary English travel terms, the most common are the following, listed in descending order:

- Phrases based on two noun stems, "N + N + N" (charter class fare; city packages tour; nature study tour; rail adventure tour).
- In compound terms, at the base of which the stem of a noun with a preposition is strung,

corresponding to the model "N + p + N" (administration on duty; bill of entry; place of interest; travel by land), such prepositions as on; of; out; by.

Constructed according to the "A + N + N" model, with an adjective and a noun, they are strung on the basis of the phrase (majestic mountains tour; round trip ticket; round way ticket).

Corresponding to the model "A + A + N", that is, with adjectives strung on the basis of the phrase (foreign independent tour; Full American Plan) and "N + Ving + N" - a model with a noun and a present participle as prepositional components (all-expense sightseeing tour; horse riding tour).

Some English lexemes and polylexeme units can be classified into the group of quasi-terms: "Ving + p + N" (checking out time); "Num + N + N" (one way ticket); "N + A + N" (world round trip); "N + c + N" (bed and breakfast) - quasi-terms are formed according to this model, "V / V + N" (fly / drive tour).

There is a four-component term based on nouns strung together with the conjunction, "N + c + N + N" (health and fitness tour). This model also serves to form quasi-terms.

Analysis of the types of English multicomponent terminological phrases allows us to conclude that the most typical are two-component phrases formed by defining the original term, in which adjectivized nouns act as an attributive element. The value of the defining element usually points to a function (cabin crew), a property (boat tour), the shape of an object (baggage car) denoted by the nuclear element.

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## NEW LANGUAGE FORMATION POLICY IN UZBEKISTAN

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### ABSTRACT:

After gaining its independence, each state strives to operate freely in all spheres. For this, they must first strengthen their speech freedom. After gaining independence, Uzbekistan also strengthened the legal protection of Uzbek language, restored its status and paid special attention to its development. If the legislation adopted in our country in the early days of independence was the official language of Uzbek language, the basis for its stature, prestige and further practical actions restoration, the laws adopted in recent years are aimed at completely changing our native language image, expanding its capabilities, making it a language with a high scientific and technical base, among the secular languages. During the years of independence, a completely new language policy has been formed in Uzbekistan. The practical work share on language development has been growing year by year, and Uzbek language has revived. In recent years, the growing attention to our native language has helped to increase Uzbek language prestige not only among our people, but also in the world. As a result of the adoption and number of laws implementation on Uzbek language promotion during the years of independence, Uzbek language is now used and expanded in all areas. In addition to the aspects mentioned in the article, Uzbek language development during the years of independence, the language policy in

Uzbekistan, adopted language legislation essence and practical efforts content and results for Uzbek language development.

**KEYWORDS:** Uzbek language, language policy, national language, law on state language, independence, official language.

### INTRODUCTION:

As each language acquires the state language status, its political prestige increases. Keeping government documents in that language preserves the language mentality. According to leading European experts, the languages transformation into dead languages is due to the lack of political influence. As Uzbek became the state language, its status among the world's languages increased. This is a feature of state sovereignty. At the same time, the social life democratization creates a real basis for increasing Uzbek language prestige in society. The example of the Uzbek nation's activism in determining its language status over the past 70 years has paid off in 1989. It was in this referendum that the nation became well aware of democratic principles. The concepts of national identity, national culture, national glory, and national spirit were put into practice in this democratic process. All this was an important political factor in giving Uzbek the state language status.

In June 1989, a draft law on languages was submitted for public discussion in the Republic of Uzbekistan (at that time UzUSSR). This project discussion was, in fact, nationwide.

Because it was attended by experts in all fields, activists from many regions of the country.

The first version of "Law on languages" was found to be inappropriate from the time it was named, it was suggested that it be called not "Law on Languages" but the "Law about the state language".

The project, which was published in the press, was criticized. It is important to note that the criticism was directed at opposing sides: the original project was accused of bias; in the second project, not enough democratic principles were followed, while Russian was irrationally declared the interethnic communication language.

It was made various suggestions, additions and comments. As a result, another project was drafted and promulgated. This time it was renamed the "Law on the state language".

As a result of many attempts, deputies group of the Supreme Soviet of Uzbek USSR, scientists, writers, statesmen and public figures made a four-month effort to create the final version of the Law "On the state language" and it was adopted on 21 October, 1989.

The project essence of the law "On the state language" is as follows: However, it should be noted that the center opinion was different from the opinion expressed:

- The state language status increases in everyone a responsibility sense to their nation and their national language, encourages and encourages active national life.
- Attitudes toward education have changed as a major political and social developments result, such as Uzbek designation as the state language. »[17. 3]
- The law on language does not serve to separate nations by their content, but to unite them and strengthen nation's unity.

The law adoption "On the state language" was one of the important steps in strengthening the independence of Uzbekistan. All the next important steps ("The presidency introduction in 1990", the "State sovereignty" declaration on July 1990, and the "State Independence" declaration on August 1991) has been depended on this first step. It can be said that it is like a necklace made of precious stones. At the beginning of this priceless necklace shines the Law "On the State Language".

In 30 years of independent Uzbekistan, as in all spheres, there have been significant changes in the political and social system. The Constitution of the Republic of Uzbekistan, which constitutes our state legal basis and guarantees and meets the universal democratic requirements, was adopted in the first years of independence. Article 4 of our constitution states: "The state language of the Republic of Uzbekistan is Uzbek" [18. 4] ensured our native language legal stability and increased its role and importance as an official language. At the same time, a number of laws have been drafted based on the constitutional principles of the links of the state system and the separation of powers. Later, another significant change took place in the development of Uzbek language. That is, the new version of the Law of the Republic of Uzbekistan "On the state language" was adopted. It was one of the most important historical events in the development of our native language. The adoption of this Law has further strengthened the work in the field of language. The emergence of great theoretical and practical work in language and linguistics has accelerated. A lot of practical work has been done in our country and around the world to enhance our native language prestige.

One of the main and important goals of the Law "On the state language" is the general our national language protection, the need to give

our language the state language status, its comprehensive development, raising it to the world languages level.

Admittedly, it was not easy to give our language the state language status. A lot of political and social efforts have been made in our country to adopt this law.

With the adoption of the Law "On the state language", the functional status of Uzbek language began to change. As mentioned above, Article 4 of the Constitution of the Republic of Uzbekistan states: "The state language of the Republic of Uzbekistan is Uzbek." [18.4]. This ensured the state language constitutional protection and intensified the issues related to it.

In addition to increasing the attention to Uzbek language in our country, there are opportunities to learn foreign languages. After all, the full individual development requires the modern science, culture, engineering, technology acquisition. It is not enough to know a single language to achieve this goal. The languages knowledge of the world most developed nations is becoming a necessary factor for modern man perfection, for our state comprehensive development.

At present, Uzbek language is used in all spheres of social life of the Republic of Uzbekistan - in state (administrative, governmental, economic, etc.) bodies, in public education (schools, general secondary special vocational colleges, higher educations), is fully operational in various institutions. Official documents are published in Uzbek. Office work is also conducted in Uzbek.

Although it is already known how rich Uzbek language is, due to the limited use of this wealth, our native language has not been able to fully express its beauty. Now, after gaining independence, our republic is showing its full potential. The growing popularity of Uzbek language not only in our country, but also in

the world shows that our native language is one of the great languages.

During the years of independence, a completely new language policy has been formed in Uzbekistan. The share of practical work on language development has been growing year by year and Uzbek language has revived. In recent years, the growing attention to our native language has helped to increase Uzbek language prestige not only among our people, but also in the world. As a result of the adoption and implementation of a number of laws on the promotion of Uzbek language during the years of independence, Uzbek language is now used and expanded in all areas.

After gaining its independence, each state strives to operate freely in all spheres. To do this, they must first strengthen their speech freedom. After gaining independence, Uzbekistan also strengthened Uzbek language legal protection, restored its status and paid special attention to its development. Although Uzbek language official status was established by law in 1989, after gaining independence, the law needed to be amended. Because in the law on the state language before independence, at that time we were not officially an independent state from the Soviet Union, some of its views were formed on the situation and the environment basis.

The 1989 edition of the Law of the Republic of Uzbekistan "On the state language" consists of 30 articles, which introduced the concept of "interethnic language" and reflected the role of Russian language. Also, although Article 1 of this law states that the state language of the Republic of Uzbekistan is Uzbek [3], it was noted that in addition to Uzbek language, Russian can be used in the same status in the country. This law has been in force for many years since independence. Both languages were used equally in public affairs. Later, there was a

need to raise the prestige of the Uzbek language. As a result, on December 21, 1995, this law was amended and adopted in a new edition on the basis of modern requirements. The Law of the Republic of Uzbekistan on amendments and addenda to the Law of the Republic of Uzbekistan "On the State Language" of the Republic of Uzbekistan in the new edition [4] consists of 24 articles. The law also stipulates that an international language may be chosen at will. The law, which has undergone a number of similar changes, has paved the way for Uzbek language rapid development. It should be noted that in both cases, Uzbek people have been active in expressing their views. Ordinary people also expressed their opinion that Uzbek language should have a status instead. The intelligentsia, on the other hand, made sharp statements in newspapers, magazines, radio and television through articles, broadcasts and shows.

We all know that spelling issues are also hotly debated in Uzbekistan. In the first years of independence, the Cyrillic alphabet was used in practice in our country. Later, the issue of switching to Latin script was on the agenda. There were a number of reasons for this. In particular, the possibilities of Uzbek language were more complete and broad in Latin script than in Cyrillic alphabet. Thus, on September 2, 1993, the Law of the Republic of Uzbekistan on the introduction of Uzbek alphabet based on Latin script was adopted in our country. [2]. According to it, in our country it is planned to operate in the Latin alphabet.

On the same date, along with the above law, the Supreme Council decision of the Republic of Uzbekistan on the procedure for implementing was published the Law of the Republic of Uzbekistan "On the introduction of the Uzbek alphabet based on the Latin script" [5]. This resolution sets out the procedure for the gradual transition to the Latin alphabet. The

resolution consisted of 9 paragraphs and clearly stated the transition issues to the Latin script.

On approval of the State Program of the Cabinet of Ministers of the Republic of Uzbekistan on June 16, 1994 to ensure the Law implementation of the Republic of Uzbekistan was published the decision "On the introduction of the Uzbek alphabet based on the Latin script" [6]. The resolution also outlined a number of issues related to the Latin alphabet introduction.

Resolution of the Oliy Majlis of the Republic of Uzbekistan, May 6, 1995 about modification of the Law of the Republic of Uzbekistan "On introduction of the Uzbek alphabet based on the Latin script" [7] the law of the Republic of Uzbekistan was promulgated, according to which some items were amended and supplemented.

On the same date, amendments the decision was announced in to the decision of the Oliy Majlis of the Republic of Uzbekistan on the procedure for implementation of the Law of the Republic of Uzbekistan "On the introduction of the Uzbek alphabet based on the Latin script" [8]. According to it, some items of the previous edition have been amended and supplemented.

Also, in paragraph 3 of the resolution of the Supreme Council of the Republic of Uzbekistan on the procedure for implementing the Law of the Republic of Uzbekistan "On the introduction of Uzbek alphabet based on the Latin script" in 1995 developed new rules of Uzbek orthography and submit it to the Cabinet of Ministers of the Republic of Uzbekistan [5]. Accordingly, on August 24, 1995, the Cabinet of Ministers of the Republic of Uzbekistan issued a resolution approving the basic spelling rules of the Uzbek language [9]. According to it, the basic spelling rules of the Uzbek language have been approved.

Work on improving the Latin script continued apace from 1993 to 1996. Another piece of legislation that appeared to be the culmination of this work on March 19, 1996, was the Cabinet of Ministers' on approval of the state program on education "Ensuring the implementation of the Law of the Republic of Uzbekistan on the introduction of Uzbek alphabet based on the Latin script" resolution of the Cabinet of Ministers of the Republic of Uzbekistan on June 16, 1994 № 304 "On approval of the state program on education" [10]. The resolution considered solutions to improve the alphabet.

The normative documents adopted in our country have served for the development of our native language. The Law "On the state language" adopted on the eve of independence, served as a basis for further work. The measures taken to develop Uzbek language and the work done today are showing positive results.

It is no secret that 30 years have passed since the independence of our republic, during which time a large-scale practical action has been taken on all fronts for the development of our country. We have already touched upon the significant work done in the first years of independence on the development of Uzbek language. However, in recent years it has become clear that more work needs to be done on language. Due to this, a new, modern form of language policy has been formed in our country.

What factors influenced the new nature of language policy?

- In the context of globalization, the other languages influence on the Uzbek language has significantly increased.
- The existing legislation does not cover all aspects of language issues.
- During the years of independence, Uzbek language has grown in popularity and scope.

- A committee Lack to instruct on the use of terms and terms in Uzbek and foreign languages.
- Legitimate conclusions about the alphabet and spelling, confusion in practice.
- Problems with characters representing certain letters of the Uzbek alphabet based on the Latin script.
- The electronic form of Uzbek language is not perfect, it has not become the language of technology and the Internet.
- Practical study Lack of Uzbek language.
- Uzbek language scope is limited.
- The structure lack to oversee Uzbek language use.
- The liability issue for laws violations of Uzbek language is not sufficiently covered in our laws and responsibility measures are not strengthened.
- Public observation that language issues have caused public debate among Uzbek people.
- The need to strengthen the scientific research of Uzbek language and increase the technical base in line with modern requirements.
- The need for development new model of Uzbek language.

A number of similar problems required a new language policy. Noticing this in time, the heads of government took a number of steps to raise the language policy of our country to a new level. As a result, a new path of development of Uzbek language was formed. In the first years of independence, efforts to develop the language were revived. Below we will focus on the essence of the new language policy and normative documents adopted in our country in recent years.

We all understand and understand the scientific and practical significance of the above-mentioned normative documents. But the most important of these is the Decree, the adoption and implementation of which has

become very important for our native language, our people and our country.

On May 13, 2016, on the initiative of the First President of the Republic Islam Karimov, the Decree "On the establishment of the Tashkent State University of Uzbek Language and Literature named after Alisher Navoi" was adopted in our country [1]. This decree was a serious step towards the further development of the Uzbek language.

The decree is aimed at developing Uzbek language, increasing its prestige and role, and expanding its scope in the future. On the basis of this Decree, the Tashkent State University of Uzbek Language and Literature named after Alisher Navoi was established in the republic. Today, the university is operating effectively.

There is no doubt that the adopted decree is the work of not only philologists, but also of all our enlightened people, will give perfection and clarity to the language policy of our country, will be a new stage in the development of our language and literature. The first sentence of the decree states the following universal truth: "The native language and literature of any nation are the basis of its national spirit and identity, cultural and educational world, national idea. Our enlightened ancestor Abdullah Avloni said, "The mirror life of every nation that exists in the world is language and literature. "To lose the national language is to lose the spirit of the nation the wise saying proofs it"[1].

The decree clearly defines the purpose of the university: "In-depth study of the unique features of Uzbek language and literature, its historical development, its current state and prospects in today's rapidly changing globalization, strengthening the effectiveness of research in this area, radically improving the quality of teaching Uzbek language and literature at all levels of the education system, as well as the training of highly qualified

personnel in this field"[1]. In accordance with the clear essence of the implementation of these goals, the university has three faculties, that is, Uzbek philology, which prepares clever researchers capable of splitting the hair, the Uzbek language and literature, which educates teachers who have mastered the hadiths of the art of education, and the inexhaustible treasures of our language and literature, Uzbek-English translation faculties were established to train translators.

It is clear that the students of these faculties will contribute to the further development of our native language.

Uzbek people have great material and spiritual wealth. In this respect, the world deserves to be envied.

The Decree states Uzbek language richness as follows: "Uzbek language has an ancient and rich history, and scientific sources indicate its formation was influenced by the Bactrians, Sogdians, Khorezmians and other peoples and nations living in the region in AC and the first centuries BC"[1].

Indeed, Uzbek language development is greatly influenced by the above-mentioned nations and ethnic groups. When they came to Central Asia, they also promoted their culture and values. Their environment and living conditions are similar to those of Turkic peoples. In turn, the traditions and values of the peoples of Central Asia have been instilled in the colonial peoples. All this is reflected in the language. That is, there are various changes in the lexical layer, and communication occurs between the languages of the above countries and the languages of the local population. This served languages development.

We, the younger generation, must always remember the great services of our ancestors, be worthy heirs to them, further enhance our native language prestige, and



contribute to Uzbek language development. In this regard, the Decree states the following:

“As the heirs of the priceless wealth passed down from our ancestors, we must preserve, enrich and enhance our native language prestige as our highest and most enduring goal, and the importance of this issue should never be overlooked”[1].

The role of the above-mentioned official documents, laws and decrees in Uzbek language development is invaluable. The role of this Decree, which is considered to be an example of high attention to language, is even higher. Because, this Decree is one of the highest attention manifestations to Uzbek language in Uzbekistan. It is no exaggeration to say that this Decree has opened a new era of attention to the language in our Republic. Now the staff of the university, first of all, contributes to our country development, as well as strives to raise Uzbek language prestige.

The youth of our country should deeply feel that we have achieved our language independence, which our ancestors dreamed of. At the same time, it must contribute to its future development. This university was established to address the existing shortcomings in the field. The decree contains all the aspects that serve Uzbek language development, and sets out the goals that will be achieved in the future for the prestige and our language development. It is planned to completely eliminate the shortcomings in philology field in our country and to ensure our language development.

In connection with the University establishment on May 24, 2016 the cabinet of ministers of the Republic of Uzbekistan signed the President decree of the Republic of Uzbekistan "On the establishment of Tashkent State University of Uzbek Language and Literature named after Alisher Navoi" on May 13, 2016 the resolution on measures to

implement decree No. 4797 [11] was published, which set out a number of measures.

The active work on Uzbek language development in all spheres, while maintaining the role of our native language in the globalization process, creates the basis for its further development. Scientific research of our native language is one of the urgent tasks of today. In this regard, it should be noted the Resolution of the cabinet of ministers of the Republic of Uzbekistan dated March 11, 2020 on measures to further increase the fundamental and applied research effectiveness in Uzbek language and literature [12]. This approach means covering issues of language and society in relation to the times. In particular, paragraph 1 of the resolution sets the norm for the Sociolinguistics department establishment in the Uzbek Language, Literature and Folklore Institute structure of Sciences academy of the Republic of Uzbekistan, society and language, language phenomena are now studied in parallel with the problems of modern society. This approach means covering issues of language and society in relation to the times. This requires new approaches to language. Modern approaches play an important role in solving problems in the age of civilization.

The above-mentioned legislation plays an important role in the development of our native language, which is clearly reflected in the current image of Uzbek language. The practical efforts related to the development of language in our country have not diminished for a moment. By October 21, 2019, one of the most important historical events in the development of our native language has taken place. In other words, the Decree of the President of the Republic of Uzbekistan on measures to radically increase the prestige and status of Uzbek language as the state language was signed [13]. This decree opened a new

page in the development of Uzbek language. This is because the decree consistently defines the strategies for the further development of our native language, and a number of practical works will be organized on the basis of the decree. In the renewed Uzbekistan, special attention is paid to all areas, setting criteria for development, and efforts are being made to accelerate development. Recognized today as the starting point of the third renaissance, this decree and the actions taken in connection with it, of course, will serve as a basis for the next renaissance of Uzbek language. It is no exaggeration to say that the decree is invaluable in enhancing the capabilities of Uzbek language, enhancing its prestige and expanding its coverage. In connection with this decree, in order to develop Uzbek language, the decision of the cabinet of ministers of the Republic of Uzbekistan on december 12, 2019 to approve the Regulation on the department of State language development [14], January 29, 2020 resolutions of the cabinet of ministers of the Republic of Uzbekistan on measures to organize the activities of the terminology commission under the cabinet of ministers of the Republic of Uzbekistan [15] , now the development department of the State language of the Republic of Uzbekistan and the terminology commission under the cabinet of ministers of the Republic of Uzbekistan have been established under the cabinet of ministers of the Republic of Uzbekistan.

The established committees testify to the correctness of the new language policy pursued in the country, ensure the rapid development of the Uzbek language in the future, increase the prestige of our country and the world, and restore its height. The role of Uzbek-speaking people is high. Therefore, the united action of the people of our country and the Uzbek nation is also important for the effective implementation of the active language

policy pursued by our state and government. This means that everyone who claims to be Uzbek should be happy to do their best for the development of the native language. In order to increase the love of our people for the language, to increase the value of the Uzbek language and the role and prestige of the Uzbek language in the life of people, in connection with the above Presidential Decree, the Law of the Republic of Uzbekistan on the Establishment of the Day of Uzbek Language on April 10, 2020, officially became Uzbek Language Day on October 21, according to Article 1 of the Law [16]. The celebration not only added to the joy of Uzbek people, but also lifted their spirits. He raised the attitude to the Uzbek language once again.

We can say that the language policy pursued in our country will serve for the further development of the Uzbek language.

If the legislation adopted in our country in the early days of independence was the official language of the Uzbek language, the basis for the restoration of its stature, prestige and further practical actions, the laws adopted in recent years are aimed at completely changing the image of our native language, expanding its capabilities, making it a language with a high scientific and technical base, among the secular languages.

In conclusion, it should be noted that the open language policy pursued in Uzbekistan will pave the way for Uzbek language further development. From the first days of independence to the present day, the country has adopted and implemented a number of laws and by-laws. This led to the rise of the language. The recent emergence of some problematic aspects of language issues shows, first of all, that the Uzbek nation is not indifferent to its language, but, as in all areas of the country, the work is being done on a democratic basis to improve the mother

tongue. The adoption of a number of legislative acts to improve the scientific and technical base of Uzbek language, along with the formation of a Uzbek language comprehensive study in all its aspects, creates the need to keep pace with the times. In short, the adopted legislation, research work on the development of Uzbek language leads to the new models formation of language policy in Uzbekistan.

New language policy forming in our country;

- ✓ Controlling the other languages influence on Uzbek language in globalization context,
- ✓ Increasing Uzbek language prestige, expanding its use scope.
- ✓ Committee formation to issue instructions on the terms use from Uzbek and foreign languages,
- ✓ Alphabet regulation and spelling issues,
- ✓ Improving the Uzbek language electronic platform,
- ✓ Uzbek language translation into technology and internet language,
- ✓ Control over Uzbek language use,
- ✓ Violations prosecution of Uzbek language,
- ✓ Resolving language issues through public discussions among Uzbek people and other language issues play an important role in establishing. These actions are based on dozens of laws adopted by our government.

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## **CRITERIA FOR EVALUATING THE STATE AND WATER RESOURCES MANAGEMENT OF WATER SYSTEMS OBJECTS OF THE REPUBLIC OF UZBEKISTAN**

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### **ABSTRACT:**

The objects of research are the objects of water management systems of the Republic of Uzbekistan. The criteria for assessing the status and management of water resources of objects of water management systems make it possible to assess their condition and manage the water resources of objects. Methods are used to determine the criteria for assessing the status and management of water resources.

Criteria have been developed for assessing the status and management of water resources of objects of water management systems: basin departments of irrigation systems, departments of district irrigation, departments of pumping stations and energy, departments of main canal operation, departments of reservoir operation, reclamation expeditions, departments of irrigation systems, which will make it possible to determine various methods and water management models in the Republic of Uzbekistan.

**KEYWORDS:** criterion, state assessment, management, water resources, facilities, water management system, minimization,

square deviation, flow rate, level of water resources.

### **INTRODUCTION:**

The Ministry of Water Resources of the Republic of Uzbekistan includes a large number of water management systems and facilities, for which it is constantly necessary to assess their status and manage their water resources. For these systems and facilities, it is necessary to develop and use appropriate criteria for assessing the status and management of their water resources.

The water management systems include basin departments of irrigation systems, departments of district irrigation, pump stations and energy departments, main canal management (gravity and with machine lifting systems), reservoir management, reclamation expeditions and irrigation system management.

### **MATERIALS AND RESEARCH METHODS:**

The criteria for assessing the status and management of water resources of water management systems are as follows:

1. Basin management of irrigation systems (BMIS).

The criterion for the management of water resources of the BMIS is to minimize the use of actual water resources of the basin management [1,2]

$$I_{BMIS} = \sum_{i=1}^I \sum_{j=1}^J (F_{ij} - F_{ij}^*) \rightarrow \min, \quad (1)$$

where  $F_{ij}$  – is the volume of water intake;  $F_{ij}^*$  – actual used water resources in the sectors of the national economy of the republic related to this BMIS.

2. Departments of irrigation of districts (DIR).

The criterion for water resources management of the DIR is to minimize the use of actual water resources of the district irrigation department [1,2].

$$I_{DIR} = \sum_{i=1}^N \sum_{j=1}^N (D_{ij} - D_{ij}^*) \rightarrow \min, \quad (2)$$

where  $D_{ij}$  – is the water withdrawal limit,  $D_{ij}^*$  – actual water resources used in the area.

3. Management of pumping stations and energy (MPSE).

The criterion for the management of water resources by MPSE is to minimize the use of actual volumes of pumped water resources and consumed electricity [2,3]

$$I_{MPSE} = \sum_{i=1}^I \sum_{j=1}^J (V_{ij} - V_{ij}^*) \int_0^T (N_{ij} - N_{ij}^*) dt \rightarrow \min, \quad (3)$$

where  $V_{ij}$  – is the total amount of water resources;  $V_{ij}^*$  – actual used water resources;  $N_{ij}$  – consumed electricity, actually used electricity.

4. Management of the operation of main canals (gravity and with systems of machine water) (MOMC).

The criterion for managing water resources of gravity canals is to minimize the use of actual water consumption and the quadratic deviation

of the difference between the set and actual water levels in hydraulic structures [1,4]

$$I_{MOMC(gravity)} = \sum_{i=1}^I \sum_{j=1}^J \left\{ (Q_{ij}^c - Q_{ij}^{c*}) + (z_i(l,t) - z_i^*) \right\}^2 \rightarrow \min, \quad (4)$$

where  $Q_{ij}^c$  – is the total consumption of water resources;  $Q_{ij}^{c*}$  – Actual consumption of water resources  $z_i - z_i(l,t)$  given and actual values of water levels at hydraulic structures.

The criterion for managing the water resources of the main canals with machine water-lifting systems is to minimize the use of actual water consumption and energy consumption [1,5]

$$I_{MOMC(MWLS)} = \left[ \sum_{i=1}^I \sum_{j=1}^J (Q_{ij} - Q_{ij}^*) \int_0^T (N_{ij} - N_{ij}^*) dt \right] \rightarrow \min \quad (5)$$

where  $Q_{ij}$  – is the total consumption of water resources;  $Q_{ij}^*$  – actual pumped water consumption;  $N_{ij}$  – electricity needed;  $N_{ij}^*$  – actually used electricity.

5. Management of the operation of reservoirs (MOR).

The criterion for controlling the process of filling and operating reservoirs is to minimize the quadratic deviation from the actual water volume of the reservoir from the planned one, taking into account water losses due to evaporation and filtration

$$I_{MOR} = \left\{ (W_B(T) - W_n)^2 + \int_0^T Q_b(t) dt \right\} \rightarrow \min, \quad (6)$$

where  $W_B(T)$ ,  $W_n$  – is the actual and planned volume of reservoir water for evaporation and filtration  $Q_b(t)$  – water loss from the reservoir for evaporation and filtration.

6. Land reclamation expeditions (LRE).

The criterion for managing the water resources of the collector-drainage network is to maximize the discharge of collector-waste water into the collector and various depressions [6]

$$I_{LRE} = \sum_{i=1}^I (K_{ij} - K_{ij}^k) \rightarrow \max, \quad (7)$$

where  $K_{ij}$  – is the total groundwater volume,  $K_{ij}^*$  – actual discharge of collector-drainage water into various depressions.

7. Management of irrigation systems (MIS).

The criterion for the management of water resources at MIS is the minimization of the use of the actual expenditures of water resources and the quadratic deviation of water levels in hydraulic structures from their given value [1.8]

$$I_{MIS} = \left\{ \sum_{i \in N_{B0}} \int \sum_{j=1}^{N_{ij}} \left[ (Q_{ij}(t) - Q_{ij}^*)^2 + \sum_{j=1}^{N_{ij}} (z_i(l,t) - z_i^*)^2 \right] dt \right\} \rightarrow \min, \quad (8)$$

where  $Q_{ij}$ ,  $Q_{ij}^*$  – is the actual and planned value  $i$  and  $j$  – water consumer;  $z_i(l,t)$ ,  $z_i^*$  – actual and set water level values for hydraulic structures.

Based on the structure of the water management system and taking into account their local criteria, the quality control indicator of the process of water supply, water distribution and water loss can be written as a common functional [9,10]

$$I = \{ \alpha_1 I_1 + \alpha_2 I_2 + \alpha_3 I_3 + \alpha_4 I_4 + \alpha_5 I_5 + \alpha_6 I_6 + \alpha_7 I_7 \} \rightarrow \min, \quad (9)$$

Where  $I_1 = \sum_{i,j \in N_k} (F_{ij} - F_{ij}^*)$ ;  $I_2 = \sum_{i,j \in N_0} (D_y - D_y^*)$

$$I_{3(VHC\Theta)} = \sum_{i,j \in N_{HC}} (V_{ij} - V_{ij}^*) \int_0^T (N_{ij} - N_{ij}^*) dt;$$

$$I_4 = \sum_{i \in N_B} (W_B^i - W_n^i)^2 + \int_0^T Q_b(t) dt;$$

$$I_5 = \sum_{i,j \in N_{MK}} \left\{ (Q_y - Q_y^*) + (z_i(l,t) - z_i^*) \right\} \int_0^T (N_y - N_y^*) dt;$$

$$I_6 = \sum_{i \in N_{M\Delta}} (K_{ij} - K_{ij}^k);$$

$$I_7 = \left\{ \sum_{i \in N_{HC}, 0} \int \sum_{j=1}^N \left[ (Q_{ij}(t) - Q_{ij}^*)^2 + \sum_{j=1}^N (z_i(l,t) - z_i^*) \right] dt \right\};$$

$$\sum_{i=1}^7 \alpha_i = 1; \quad 0 \leq \alpha_i \leq 1;$$

$N_B$  – many basin-based irrigation systems;  $N_D$  – many water facilities of the district irrigation department;  $N_{PS}$  – many nodes with pumping stations in the water management system;  $N_{MC}$  – many sections of the main canal (gravity and with MWLS);  $N_W$  – many sites of reservoirs in the water management system;  $N_{LRE}$  – many reservoirs in the water management system;  $N_{LRE}$  – many reclamation expeditions;  $N_{IS}$  – a plurality of channel section numbers having lateral outlets;  $\alpha$  – weighting factors determined by expert assessments of the significance of individual local criteria.

Water management systems include reservoirs and their cascades, pumping stations and their cascades, sections of canals limited by hydraulic structures, and side water intakes to provide consumers with water resources. [1]

**RESERVOIRS:**

The criterion for controlling the process of filling and discharging the reservoir is written in the form [11,12]

$$I_1 = \left\{ (W_B(T) - W_n)^2 + \int_0^T Q_n(t) dt \right\} \rightarrow \min \quad (10)$$

where  $W_B(T)$  - is the actual volume of reservoir water at the end of the control period;  $Q_n(t)$  - is the intensity of water losses due to evaporation and filtration;  $W_n$  - is the planned volume of reservoir water at the end of the management period.

The physical meaning of criterion (10) is to minimize the quadratic deviation from the actual reservoir water volume from the planned at the end of the control period and the volume of water losses due to evaporation and filtration.

The restrictions on the reservoirs are as follows [13]

$$W_B^{\min} \leq W_b(t) \leq W_B^{\max}(t),$$

$$\frac{dz_b(t)}{dt} \leq z_H, \quad (11)$$

where  $W_B^{\min}, W_B^{\max}(t)$  - minimum and maximum allowable values of water volumes in reservoirs;  $z_H$  - maximum permissible value of the rate of filling and discharge of the reservoir.

### Pumping stations:

The criterion for controlling the process of water supply in pumping stations is to minimize the consumed electric power while ensuring a given water supply of pumping stations [14]

$$I_2 = \left\{ \sum_{j \in M_{HC}} \int_0^T \left( \sum_{i \in N_j^P} N_i^j (H_{LH}^j, H_{UH}^j [N_j, N_j^P, \psi_j^P]) \right) dt \right\} \rightarrow \min \quad (12)$$

$$\text{at } |Q^{PS} - Q^*| \leq \varepsilon,$$

where  $N_i$  - is the consumed electric power of the pumping stations; ;  $Q^{HC}, Q^*$  - actual and required capacity of pumping stations;  $H_{LH}^j, H_{UH}^j - N_j$  - levels of the lower and upper heads of pumping stations;  $N^P$  - the number of

working pumping units;  $\psi^P$  - many numbers of working pumping units; many angles of rotation of the blades of axial pumps (for pumping stations with centrifugal pumps - the number of working centrifugal pumps of the pumping station);  $\varepsilon$  - set error of water supply regulation.

### THE MAIN RESTRICTIONS AT PUMPING STATIONS ARE [15]

$$(N_i^{\min}, N_i^{P\min}, \psi_i^{P\min}) \leq (N_i(t), N_i^P(t), \psi_i^P(t)) \leq (N_i^{\max}, N_i^{P\max}, \psi_i^{P\max}), \quad i = 1, \dots, 6, \quad (13)$$

where  $N_i^{\min}$  and  $N_i^{\max}$  - the minimum and maximum number of running pumping units;  $N_i^{P\min}$  and  $N_i^{P\max}$  - the minimum and maximum set of numbers of working pumping units;  $\psi_i^{P\min}$  and  $\psi_i^{P\max}$  - the minimum and maximum set of angles of rotation of the blades of the axial pumps of the  $i$ -pump station (for pump stations with centrifugal pumps, the minimum and maximum number of working centrifugal pumps of the  $i$ -pump station).

### CHANNEL SECTION:

The control criterion for hydraulic processes in the channel section is to minimize the quadratic deviation of the water level in the channel from their predetermined value and has the form [16]

$$I_3 = \min \left\{ \sum_{j=1}^{N_y} \int_0^T [z_i(\ell_i, t) - z_i^*]^2 dt \right\} \quad (14)$$

where  $z(\ell, t)$  is the actual change in the water level in the channel section,,  $z^*$  is the set value of the water level in the channel section.

Functional (14) shows that during water distribution in the channel section, the set values of the water level fluctuations in the channel section were minimal, i.e. the process on the canal has become more stable, which is necessary to ensure water use



**Technological restrictions on the operation modes of the channel sections** has the form [17]

$$\begin{aligned} z_i^{\min} &\leq z_i(x_i, t) \leq z_i^{\max}, \\ Q_i^{\min} &\leq Q_i(x_i, t) \leq Q_i^{\max}, \end{aligned} \quad (15)$$

where  $Q_i^{\min}$ ,  $Q_i^{\max}$ - minimum and maximum allowable water flow rates on the  $i$ -section of the channel;  $z_i^{\min}$ ,  $z_i^{\max}$  - minimum and maximum permissible ordinates of the free surface of water on the  $i$ - section of the channel.

**Side water consumers.** In lateral water consumers, the criterion for controlling the water distribution process can be the root-mean-square integral deviation of the actual water flow from the planned (limited) values for the control period, i.e. [18]

$$I_4 = \left\{ \sum_{i \in N, 0}^T \int \sum_{j=1}^{N_i} (Q_i^j(t) - Q_{ij}^*)^2 dt, \right\} \rightarrow \min, \quad (16)$$

where  $Q_i^j(t)$  is the actual value of the water flow rate of the  $j$ -side water consumer;  $Q_{ij}^*$  - is the planned value of the water flow rate of the  $i$ -water consumer in section  $j$

**The main restrictions on hydraulic structures are [19,20]**

$$a_i^{j,\min} \leq a_i^j(t) \leq a_i^{j,\max}, \quad (17)$$

$a_i^{j,\min}$ ,  $a_i^{j,\max}$  - minimum and maximum permissible openings of gates of hydraulic structures.

### CONCLUSIONS:

Criteria have been developed for assessing the status and management of water resources of objects of water management systems: basin departments of irrigation systems, departments of energy stations, departments of operation of main canals with self-draining and sisters of machine lifting, drainage management

departments of reservoirs, reclamation expeditions and departments of irrigation systems that will make it possible to determine various methods and mathematical models of water use management in the Republic of Uzbekistan.

A general functional has been developed that defines a quality indicator for managing the processes of water supply, water distribution and water loss of objects of water management systems. The main restrictions on the management of reservoirs, pumping stations, sections of canals and hydraulic structures are identified, which will make it possible to determine the areas of management of objects.

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# THE INFLUENCE OF BIOSTIMULANTS ON THE YIELD OF CUCUMBER IN THE CONDITIONS OF ANDIJAN REGION

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## ABSTRACT

This article describe the results of using biostimulants "Uchkun", "Gossipren" and "Verva" on the yield of cucumber variety "Orzu" in Andijan region. It was found that the pre-sowing treatment of cucumber seed with biostimulants promoted an increase in seed germination and growth processes. The biostimulator Uchkun turned out to be the most effective growth stimulator on the cucumber variety "Orzu". Averagely, the yield of cucumber when treated with biostimulants increased by 9.85%, 24.27% and 14.02%; the yield increase were 2.0; 6.2; 2.7 t/ha, respectively.

**Key words:** biostimulants, cucumber, germination, productivity, fruit, Gossiprin, Verva, Uchkun, Super Uchkun.

The object of the study was the biometric parameters of cucumber plants, yield and biochemical composition of fruits, methods of increasing the resistance of cucumber plants.

The subject of the study was parthenocarpic hybrids of cucumber variety Orzu. During the research, standard methods of setting experiments with vegetable crops (3) were used; tests were carried out with biostimulants Gossiprin, Verva and local biostimulants Uchkun, Super Uchkun.

Accompanying observations of cucumber plants in the process of research included taking into account the energy of germination and germination of seeds, biometric parameters of seedlings, the rate of passage of phenophases. The weight of the crop and its marketability were taken into account by the gravimetric method according to the variants of the experiment on a plot basis. In cucumber, as a crop of multiple harvesting, early productivity was determined by the yield for the first fruiting period (10, 15, 20, 30 days) (4). In our studies, this period was 20 days.

The product quality was assessed in accordance with the requirements of the standard (3). The biochemical composition of the products was determined according to standard methods: the dry matter content - by the thermostat-weight method, the sugar content - by the

Bertrand method, the vitamin C content - by the I.K. Murri method.

The results obtained were processed by the method of Analysis of Variance (ANOVA) using the statistical program STRAZ (version 2.1) and by the method of B.A. Dospekhova (4). The calculation of economic efficiency was carried out in accordance with generally accepted methods (Plokhinsky, 1970; Zakharchenko, 1971; Khokhryakov, 1984; Tverdyukov, 1993).

## Experimental Schemes for the Research

The experiment studied hybrids of cucumber varieties Orzu. Sowing of seeds was carried out on April 20 in the open field. The holes were dug in a 70x40 two-line scheme with a distance of 35-40 cm between holes.

Planting density was 4.2 plants per 1m<sup>2</sup>. The plants were formed into 1 stem, tied up on a string to 2m high trellis.

The effectiveness of the action of biostimulants was studied by soaking Orzu cucumber seeds in drug solutions and subsequent plant treatments. When soaking seeds, the following schemes were used:

1. Control - water treatment;
- 2 - Gossiprene (200 ml / ha 0.1% aqueous emulsions);
- 3 - Uchkun (200 ml / ha with 0.1% aqueous emulsions);
- 4 - Super uchkun (200 ml / ha 0.1% water emulsions);
- 5 - Verva (200 ml / ha 0.1% aqueous emulsions);

The treatment of vegetative plants was carried out three times: the first - in the phase of 2-4 true leaves, the second - at the beginning of the flowering phase, and the third - in the phase of mass flowering.

Orzu - parthenocarpic, medium early, begins to bear fruit on the 46-47 day, vigorous, medium branching, female flowering type, dark green leaf. The fruit is 13-15 cm long, cylindrical, dark green in color. At the length of the fruit, the tuberosity is large, medium, rare, the color of the thorns is brown, but the fruit does not turn yellow for a long time. The base of the fruit is dull, the neck is weak, the peduncle is long. Bitterness is genetically absent. Plants have resistance to cladosporium disease (i.e. the brown leaf spot disease). They are tolerant to powdery mildew, because they

have a dark green leaf, fusarium (strong root system), ascochitosis, peronospora. It tolerates air temperature fluctuations very well.

The area of the accounting plot is 8.6 m<sup>2</sup>, the experiment was repeated 3 times, the placement of variants was randomized.

These drugs have a wide spectrum of action and are intended for use in agriculture. They belong to safe substances, do not have a negative effect on humans and animals, and they do not accumulate in the soil and fruits. Designed for seed treatment before sowing in order to increase the energy of germination, as well as to increase the adaptive capacity of plants under unfavorable growing conditions.

The content of organic matter in the soil was 22.5-28.0 mg / 100 g of soil. The pH was in the range of 6.3-7.4. The content of water-soluble nitrogen varied significantly over the years - from 5.9 to 21.6 and potassium - from 14.6

to 29.0 mg / 100 g of absolutely dry soil, The provision with phosphorus was relatively stable over the years - 14-18 mg / 100 g completely dry soil.

The most favorable temperature regime developed in 2019 and 2020, when the average daily air temperature from March to April was +16 ... + 18 ° C.

Pre-sowing treatment with biostimulants contributed to the shortening of the emergence of seedlings, the enhancement of growth processes. Seed germination is the most important indicator of their quality. The lack of data on the germination of seeds is an actual indicator and can lead to large losses [3, p.178; 4, p. 256]. When treated with a biostimulator "Uchkun", seed germination began 4 days earlier than in the control (table-1). In variants with the use of Gossiprene, germination occurred 2 days earlier than in the control and at the level of the reference preparation Verva (table-1).

**Table 1**

**The influence of plant growth stimulants on the germination and growth and development dynamics of cucumber variety "Orzu" (2019)**

Growing phases	Control	Gossipren	Uchkun	Verva
Germination rate	30.04	28.04	26.04	28.04
Budding	05. 20	18.05.	16.05.	18.05.
Mass bloom	01.06	29.05	26.05	28.05
Fruiting	11.06.	09.06.	05.06.	07.06.

The data presented in table-1 shows that when treated with plant growth stimulants in all variants, all phases of development: budding, mass flowering and fruiting, occurred 4-6 days earlier than in the control variant. The budding phase during the treatment with the Uchkun biostimulator came 2 days earlier, and in the case of

Gossipren, they are observed at the level of the reference drug. Accordingly, the onset of mass flowering is also in the Uchkun variants 3 days earlier than Gossipren and 2 days earlier than Verva. Consequently, in these variants, fetal formation began earlier.

**Table 2**

**Influence of biostimulants on yield of cucumbervariety "Orzu"(2019)**

Variants	Numberoffruits / plant	Average weight of fruit, g	Productivity (t / ha)
1. Control	4	110	15,0
2. Gossiprene0,1% (200 ml / ha)	7	110	16,9
3.Uchkun0,1% (200 ml / ha )	10	120	21,2
4.Verva0,1% (200 ml / ha )	8	120	17,7
*HCP <sub>0,5</sub> =7,25                      **S <sub>x</sub> =0,7			

Note: \* Least significant difference; \*\*average error

### Conclusion

On average, the yield of cucumber increased from 10.58% to 41.27%, and the yield increase in the case of the use of the biostimulator "Uchkun" was 6.2 t / ha in comparison with the control variant and by 5.1 t / ha more than in the standard ... The use of the biostimulator "Uchkun" in the crops of cucumber variety "Orzu" in the Andijan region was the most effective in comparison with Gossipren and Verva. Thus, the biostimulator Uchkun is the most effective growth stimulator for Orzu cucumber for shortening the growing season. On the average, the increase in cucumber yield during pre-sowing seed treatment with the biostimulator Uchkun is 6.2 t / ha.

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# EFFECTIVE TEACHING OF A FOREIGN LANGUAGE THROUGH A CONTEXTUAL APPROACH

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**ABSTRACT:** The implementation of teaching English productive skills using Context approach consisted of two cycles. Each cycle consisted of two meetings for presenting the material. Each meeting took 60 minutes. For the first cycle, the researcher used context approach to teach writing and speaking with a topic "Personality". For the second cycle, the topic was "Sport". Every cycle consisted of a series of steps: identifying the problem, planning the action, implementing the action, observing and monitoring the action, reflecting and evaluating the result of the observation, and revising the plan.

**Key words:** Social distance, interview skills, giving feedback, part, verbal, function, picture, foreign language, text, handouts.

## Introduction

Before implementing the action in cycle one, the researcher had conducted a pre-test to know students' prior knowledge. This was aimed to measure students' knowledge of the topic before the treatment and to make a comparison with the post-test to know whether or not the student's skills improved. After finishing the action, the researcher conducted a post-test to measure students' improvement after having the treatment. The topics of pre-test and post-test were Personalities and Sport. Each test comprised short interview about their hobbies and writing a short essay about strange hobbies they had learnt about.

Before the implementation of the research, there was conducted a pre-research through observation. Students and the teacher were interviewed. Based on the result of pre-observation, it was found that the class was very active, students' level varied from pre-intermediate to upper-intermediate. However, most of them had difficulties with fluency in speaking and vocabulary, spelling and grammar accuracy problems with writing.

Considering student's level, the researcher would implement an action that is suitable and interesting for the students. The researcher would implement contextual teaching and learning, a method which relate subject matter content to real world situations and motivate students to make connections between knowledge and its applications in their lives as family members, citizens, and workers and to get engaged in the hard work that learning requires. The researcher believed that contextual teaching and learning is appropriate method to improve the students' productive skills.

The researcher has to prepare the lesson plan before implementing the action. The researcher also has to prepare the materials and students' worksheet consists of some tasks and other thing related to the action. There are three section in lesson plan: opening, main activities, and closing. Cycle one consisted of two meetings. Each meeting took 60 minutes.

**Main part.** The researcher planned different activities for each meeting. There were two topics discussed, "Personality" and "Sport". The objectives of the 1<sup>st</sup> lessons of each cycle were to teach students to use appropriate subject-specific vocabulary and syntax to talk about an increased range of general topics, and some curricular topics. The objectives of the 2<sup>nd</sup> lessons of each cycle were to teach students to plan, write, edit and proof-read work at text level with minimal teacher support on the given topics.

1. **Opening.** The lesson started at 8.00 a. m. the teacher entered the class. The teacher greeted the students and checked the students' attendance. Students were introduced the topic and the plan of the lesson. Students were asked to find out the objectives of the lesson by asking what they would be able to do after that lesson. After that students were introduced success criteria which included explaining their ideas clearly using opinion expressions, supporting ideas with at least two strong evidences and evaluating others' points of view by commenting and making conclusion. After formatting small groups, students were given the list of new vocabulary and list of their definitions. The task was to match definitions to the given words. After discussing the new vocabulary, students were given tables with two columns. First is How I see myself, and the second - How others see me. First, students had to write about themselves using new words. When they finished the teacher told them to interview their classmates about their characters as if they were real journalists. Students could use questions given on the power point presentation. When they had finished, students presented the information about their classmates.

In groups, students were given pictures of different rooms. The task was to make a description of the person who lived in that room. Students felt enthusiastic about acting detectives and gave various predictions. In the end of the lesson students were asked to prepare a short presentation about a person they admire. After each presentation other students gave their feedbacks according

to the success criteria. The teacher reviewed the lesson of that day by asking some questions to the students. The teacher gave a chance for the students to recall what had learned by their learning experience and then they took a conclusion together. The teacher asked to the students whether they had questions or not. But no students asked question. When the time given was over, the teacher asked the students whether they were happy or not in the lesson. The students answered "Yes". Then the teacher said goodbye and closed the lesson.

The researcher noticed that the students were very excited in doing some activities, for example: detectives and searching for key words. From the implementation of the method, there were some positive results that the researcher noted down. They are:

- 1) Learning by experiencing gave the students motivation;
- 2) Students learned how to write a summary and succeeded in it;
- 3) Group work gave them a chance to help each other
- 4) Making up objectives of the lesson made students feel responsible about the lesson
- 6) Giving feedback made students to support their speech by argumentation.

Those points showed a positive change of students' behaviour in joining the lesson. It was reflected from their active role in identifying the things around them. The students had enough courage to ask questions.

Besides, there were also several things which were considered to be weaknesses. Some students dominated the group and there was a group where students were very passive. For example: when the teacher supervised group two, only one or two students did their task. Another group, group five were not able to complete the task successfully. The reason is the fact that groups were not well balanced. It means that the researcher had to arrange a new plan to solve these problems.

### Conclusion

Context is defined as the aggregate of linguistic, situational, social and cultural variables that surround linguistic units such as texts, discourses, utterances, words, morphemes, phonemes, sounds, and distinctive features.

Building upon this understanding, contextual learning theory focuses on the multiple aspects of any learning environment, whether a classroom, a worksite, or a

wheat field. It encourages educators to choose and/or design learning environments that incorporate as many different forms of experience as possible-social, cultural, physical, and psychological-in working toward the desired learning outcomes. It has five components comprising constructivism, inquiry, questioning, learning community, modelling, reflection and authentic assessment and based on three basic principles as principles of interdependence, the principles of differentiation, and the principles of self-regulation.

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# RELIGIOUS EXTREMISM AND TERRORISM: AS A THREAT TO THE DEVELOPMENT AND PEACE OF SOCIETY

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**Abstract:** This article is dedicated to exposing the threat of religious extremism and terrorism, which is one of the most pressing issues today. It contains a number of suggestions and initiatives by the author. It also outlines the approaches of the world's leading powers to religious extremism and terrorism, as well as measures, are taken to prevent them. Given that religious extremism and terrorism are tools that threaten the stability of society, its global nature has been analyzed. The importance of the "Uzbek model" in combating this violence and its specific features are also highlighted. Global threats have become more widespread, and are no longer confined to one country or region, but to the whole world.

**Keywords:** Religious extremism, terrorism, the Uzbek model, popular culture, socio-psychological factors, , the media, social groups, public associations, delinquency, coalition.

In the 21st century, religious extremism and terrorism, as an integral part of politics, are becoming the means of pursuing foreign policy to achieve the geopolitical goals of individual forces and illegal movements on the world stage, creating the most complex social problems. Therefore, it is the duty of every citizen to understand and combat the consequences of terrorism and religious extremism. In this regard, Islam Karimov, the First President of the Republic of Uzbekistan, said: "It is necessary to inculcate in the minds of the people who the infiltration and spread of political, religious extremism, fanaticism, and other evil currents in our region, which is completely contrary to the nature of our people, poses a great threat to peace and tranquility. It is important to mobilize the people to fight against evil forces by establishing and strengthening moral and spiritual values in the minds of our people".

"Religious extremism is a form of extremism manifested in the guise of religion. Extremism is a theory and practice that advocates extreme measures and ideas in solving problems. Religious extremism is based on these principles. Terrorism is a complex socio-political and criminal phenomenon arising from the internal and external contradictions of social development". Terrorism is one of

the most dangerous forms of political extremism on a global and regional scale and is a multifaceted threat to the vital interests of the individual, society, and the state. Terrorism, by its very nature, has a systemic, social, or political basis and is an ideologically rational use of violence or the threat of its use. Terrorism includes interrelated elements: the ideology of terrorism (theories, concepts, ideological and political platforms); terrorist structures (international and national terrorist organizations, extremist - right and left, nationalist, religious and other public organizations, organized crime structures, etc.), as well as the terrorist practice itself (terrorist activity).

Today, religious extremism and terrorism, under the guise of Islam, are considered a serious threat to the security of the international community, as well as a means of disrupting the peaceful life of our people. They are doing everything in their power to lead our future, our youth, on the right path. In particular, today's threats include, in addition to religious extremism and terrorism, ethnic conflicts, corruption, as well as crime and environmental issues, and life itself demonstrates the need for vigilance and vigilance in the face of modern threats to humanity and its development. Indeed, we are witnessing the suffering of humanity as a result of religious extremism, terrorism, drug trafficking, or "popular culture". In order to achieve our good intentions and goals, we must, first of all, realize the essence of the propaganda carried out by such evil forces and build strong immunity against them. An analysis of the activities of religious extremist movements shows that all of these movements have their own wide network for the realization of their bloody goals, with special emphasis on socio-psychological factors and their use. In turn, these religious organizations are already provoking bloody interstate, ethnic and religious conflicts under the slogan of the Islamic State.

Extremism and terrorism are a major threat to any, even the most stable and prosperous society. One of the most important aspects of the fight against terrorism and extremism in the public sphere is its prevention. It is important to carry out such preventive work among young people, as this environment is the most vulnerable to



exposure to various antisocial and criminal groups. Leaders of various extremist groups recruit young people into their associations and often promise them easy solutions to all problems, including financial ones. Sensitive young minds do not think that by participating in the work of such structures, they not only solve their existing problems but also create many new things for themselves, in fact, ruin their future.

Prevention of terrorism and extremism among young people involves the implementation of a set of measures to create a legal culture in the youth environment, which will significantly expand the legal component of upbringing and education. Knowing one's rights and freedoms help the younger generation develop a sense of respect for the rights and freedoms of others, including their lives, health, and dignity. It is also necessary to develop a tolerant attitude among young people, a tolerant attitude towards all people, regardless of nationality, religion, social, property status, and other circumstances.

Religious extremist movements promote Islam for their own ambitions. In order to achieve their goals, they begin to drag our youth into the abyss through the Internet, mobile communications, television, and video games. Therefore, the President calls on the entire public to fight this scourge by all available means. Advocacy through community leaders, educators, teachers, community committee activists, and elders has become a major issue.

These acts of violence threaten the peaceful coexistence not only of Uzbekistan but of all countries of the world. In fact, religious values are, by their very nature, an invaluable force that always leads people to goodness. Only those who target destructive ideas try to use religion as a mask: "... the world community is disturbed, and sometimes even feared, by extreme events such as religious extremism and fundamentalism". As the President of the Republic of Uzbekistan Shavkat Mirziyoyev noted, "Today, the escalating bloody conflicts and contradictions in some regions of the world, the threat of terrorism and extremism require us to be constantly vigilant". He also said that "the protection of the constitutional order, sovereignty, territorial integrity of our country from various threats, further strengthening of peace and stability is the main guarantee of all our achievements". Prevention of extremism and terrorism is the task not only of the state but also of civil society. It depends on the position of political parties, public and religious associations, and citizens. In our country, it should be considered as a means of combating efforts to prevent extremism and strengthen the economic and political potential of citizens.

It is necessary to know and understand the criminal nature of these events in order to combat extremism and terrorism and prevent them in society. The motivation of offenders differs significantly from the motivation of law-abiding citizens. In extremist organizations, criminal

behavior motivates individuals and groups. The political practice of extremism is evolving in all forms of extremist activity, from those that do not go beyond the constitutional framework to those that are acute and socially dangerous, such as rebellion and terrorism.

The modernization of the problem of terrorism is the result of human civilization, which has experienced riots, brutal wars, inquisitions, revolutions, and murders. The essence of terrorism is the active use of intimidation to force people to act in a way that is beneficial to terrorists. The essential feature of terrorism and its meaning is violence and intimidation.

Today, terrorism has become one of the most effective means of governing society objectively, despite the fact that humanity has ceased to fear the existing authorities and laws of society because of civilization in general. The most important modern stage in the development of terrorism was its unprecedented globalization. Globalization has had a serious impact on the security of the world community. Some nationalist and separatist leaders are trying to establish an Islamic factor for their own ends, which is destabilizing the socio-political situation in a number of regions.

Most of the terrorists operating under religious slogans belong to the group of pro-government leaders of various terrorist groups (Osama bin Laden, al-Zawahiri, Abu Hamza al-Masri, Abu Abbas, Sheikh Omar Abdul-Rahman, Muhammad Omar, Tahir Yuldash, etc.). An analysis of the current state of terrorist threats in the United States, Europe, the Russian Federation, and Central Asia shows that they are complex in nature and affect the vital interests of the individual, society, and the state. In this regard, the issue of religious extremism must be based on the fact that it is a long-term factor in world politics, and overcoming it, as well as the threat posed by terrorism, requires great strength from the international community.

The analysis of the materials shows that in some cases, the subjects resort to terrorism because they have not found another way to solve the problems that have arisen. Officials, for their part, do not see the need to engage in dialogue with terrorists but choose to use force to resolve the issue, which could lead to armed conflict. Counterterrorism campaigns in Afghanistan and Iraq are not much different from terrorist attacks, because in both cases innocent people are killed.

For example, the Islamic State of Iraq and the Levant (ISIL) has its insidious financial resources: looting, robbery, theft, aggression, black oil trading, human trafficking, and so on. In 2014, according to the United Nations, in October 2014 alone, terrorists killed 1,273 people. Of these, 856 were civilians and 417 were military personnel. It goes without saying that for this category of "businessmen" money mixed with blood and dirty politics is the most convenient means of inciting international

murderers in different parts of the world and inciting conflicts that can be tried.

The World Jihad Foundation, led by Osama bin Laden, has consistently supported terrorist activities. The terrorist organization has set up special training camps (Afghanistan and other countries) to train militants in various countries. "On December 14, 2000, he announced that he had allocated \$20 million to train the militants". In 1996, Juma Namangani was given \$250,000 in charity by these international extremist organizations. Osama bin Laden met Tahir Yuldash in June 1999 in Jerusalem and presented him with \$500,000. He was backed by the Taliban in Umarshaikh, the opposition in Afghanistan.

It should be noted that one of the main driving forces of globalization is ideology. Today, our main task is to preserve peace, to increase the spiritual achievements of man, as well as to fight terrorism, to expose its anti-religious nature.

Thanks to the success of the "Uzbek model" in combating the threat of extremism and terrorism, the number of terrorism-related crimes in our country decreased by 1.7 times last year. In the first six months of 2018, the number of reported terrorist crimes among persons under the age of 30 in Uzbekistan decreased by more than 65.7% compared to the same period in 2017. Thanks to the "Uzbek model" of development, consistently implemented by the First President of the Republic of Uzbekistan IA Karimov, interethnic harmony and solidarity have been established in our country. Commenting on this issue, I. Karimov said: "Uzbekistan has many riches, but our greatest wealth, our the highest value is peace, interethnic friendship, and solidarity that prevails in our society".

In conclusion, in recent decades, the phenomenon of religious extremism and terrorism, its diversity in scale, form, and scope, has been growing around the world. To combat religious extremism and terrorism, it is first necessary to clearly define its essence. Based on the above, the following can be proposed to combat terrorism and religious extremism at the national, regional, and global levels:

**First**, the sustainable development of the modern world, the need to protect and preserve the planet and life on it, low and high, and the development of a mechanism to combat terrorism and religious extremism are crucial in this context.

**Second**, the reform of the education system in the Muslim world and the development of laws regulating the use of military force in the fight against terrorism are among the important conditions for the coalition.

**Third**, the country's leaders and law enforcement agencies are urged to refrain from such actions, which could intensify terrorism, such as when the government uses quasi-terrorist methods (Russia in Chechnya, Lebanon in Israel, the United States in Iraq, Turkey in Iraq, and Kurds in

other countries). There are no cases of political, non-existent, religious, cultural, or moral hatred of the population of all countries.

**Fourth**, the most important condition for preventing the fight against terrorism is to consider cases related to demonstrations of political terrorism and to refer the relevant task to the International Criminal Court, taking into account the jurisdiction of national legislation. To some extent, this measure reduces the likelihood of using "double standards" in the fight against terrorism and reduces the use of terrorist violence for political purposes.

**Fifth**, the major powers must abandon the policy of "double standards", only then can the successful fight against terrorism. Under no circumstances should terrorists be divided into "friends" and "strangers", "good" and "bad". The terrorist must be punished in accordance with the laws of the country where the attack took place.

**Sixth**, in the context of globalization, it is recommended that Western countries, especially the United States, stop interfering in the internal affairs of The Islamic world, impose models of globalization, respect their cultural, spiritual, historical values and mentality, and allow them to live freely.

**Seventh**, to complete the Comprehensive UN Convention against Religious Extremism and Terrorism, as well as to develop a common concept of "terrorism", to resolutely fulfill its obligations to prevent and neutralize terrorist acts by member states at the national, regional, and global levels, important measures need to be taken.

**Eighth**, the whole nation, the whole world must fight against religious extremism and terrorism, no state should be left out. Otherwise, terrorists may seek refuge in so-called "neutral" areas.

**Ninth**, inspections have a special place among administrative and coercive measures (airports, railways, bus stations); it is necessary to create security zones for the most vulnerable facilities (education, medical facilities, markets, etc.) and to keep a security passport against terrorism.

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# PROBLEMS OF DISTANCE LEARNING OF FOREIGN LANGUAGES IN THE FIELD OF NON-PHILOLOGICAL EDUCATION

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**Annotation:** The purpose of a distance learning course is, in its most general form, primarily to teach listening and speaking in the oral form of communication in the language being studied. In addition, the extension of the course will allow for a greater focus on written forms of communication. Written communication involves mastering different types of speaking activities, such as reading and writing (written speech). The expansion of learning objectives in the distance learning course involves the activation of previously acquired speaking skills, the formation of a higher level of communicative skills, and a deeper systematization of users' grammatical knowledge. The effectiveness of distance learning is one of the factors that allows listeners to retain more information in their memory, expand their awareness, and achieve better results in their work

**Key words:** Distance learning, internet, result, listener, interactive method, idea, suggestion

## Introduction:

The use of distance learning methods, the press, telecommunications and the Internet in the teaching of foreign languages serves as a source of information not only for students to learn foreign languages, but also to improve their intellectual level. Among the most effective approaches to foreign language teaching are the methods of language teaching in distance learning through information and communication technologies. Vocabulary and volume of language materials are not required as a condition for the implementation of speaking skills in Internet materials. However, the volume of speech and, in general, the amount of language material that a user must possess in order to fully participate in a conversation as a person determines the minimum required.

In addition to the advantages and conveniences mentioned above in distance learning, we may face some challenges. First of all, it is advisable to choose a method that is appropriate and specific to the distance learning process. Because the effectiveness and success of any education system depends on the methods used. Let's define the concept of teaching method. The teaching method is a method of interaction between teachers and students, aimed at achieving educational goals at a modern level.

Choosing an interactive method of distance learning in foreign languages is a good idea. Because the interactive method of teaching serves to activate the acquisition of knowledge by students, to develop personal qualities by increasing the activity between students and the teacher in the educational process. Using interactive methods can help increase the effectiveness of the lesson. The main criteria for interactive education are: informal discussions, the ability to freely express and express the learning material, a small number of lectures, but a large number of seminars, opportunities for students to take initiative, small group, large group, class assignments, written assignments and other methods, which have a special role in increasing the effectiveness of educational work. With that in mind, we can say that. The interactive method leads to many positive results in the process of distance learning foreign languages.

The use of interactive methods in the process of distance learning of foreign languages enhances the participation of students, encourages them to achieve maximum results. Interactivity also helps teachers incorporate more complex materials into the course. Interactivity can be combined with imitation of the environment in which students should become familiar with the learning process. For example, if the course involves the use of a computer program, the images on the screen must match the images that must be displayed when running the program. Students should be given the task of doing something that is relevant to one of the topics being studied. For more complex topics on the subject, it is possible to model the business process and encourage the reader to move on.

## Material and method:

Distance learning - learning that is carried out by special means of Internet technology, which involves interactivity, the interaction between the teacher and the student is carried out at a distance and reflects the computers that are suitable for the learning process shape. From the above definitions, it can be concluded that there is no single system for understanding the essence of distance learning. However, at present, distance learning in higher education is

presented in the form of distance learning technology, which is not reinforced by the legal framework.

The main purpose of the use of interactive methods in distance learning of foreign languages is to involve students in the process of active learning, to help them develop knowledge and research skills. Interactive methods are based on the active relationship between teacher and student, full understanding of each other. The ultimate goal of introducing interactive methods into the learning process is to organize collaboration between teacher and student in the classroom, no matter what form the lesson takes. The teacher needs to engage students in the problems of the lesson, activate their movement and teach them to master as a result.

The interactive method of distance learning is becoming the most necessary method in today's world. For example, I express my opinion on a certain topic. I am interested in the attitude of others, the opinion of others, in such a situation it is interesting to share ideas online, not only from acquaintances, but also from other users who are familiar or unfamiliar with the Internet. Representatives of different nationalities may express different opinions. That's when the general conclusion can be drawn. The interactive method can also help to make the topic more understandable. Feedback is the choice of a specific topic. A simple example can be found in the comments we make on this topic.

Now let's talk about the advantages of using interactive methods in distance learning of foreign languages, first of all, it leads to a better mastery of the content of teaching. In due course, educational communication between student-teacher-student is established. the learning material is best remembered through mutual information, retrieval, and processing. Students develop the skills of communication, expression and exchange of ideas. Each student is able to think independently, work, and observe. In interactive lessons, the student not only masters the content of education, but also develops his critical and logical thinking. The organization of interactive lessons has its drawbacks. These are learning processes that take a lot of time. Not all students have the opportunity to be supervised in interactive classes. When studying very complex materials, students are not able to solve the problem completely and clearly, and in such situations, the role of the teacher is low. Due to the participation of weak students in the learning process in groups, even strong students get low scores or grades. The bottom line is that in such an environment, the teacher must have a highly developed thinking ability, the ability to observe problems, the ability to solve problems in a timely manner.

### **Conclusion:**

Distance education is a new method in the education system of our country, and today this process is receiving serious attention. All universities have computer classes, most of which are connected to the global Internet.

### **Distance learning has the following advantages:**

1. Creative learning environment. There are many ways in which a teacher can teach, and students can only read a given material. On the basis of the proposed distance learning, students themselves search for the necessary information in a computer database and ensure that their experiences communicate well with others, as well as work on their own encourages education.
2. Opportunity for independent study. Distance learning includes primary, secondary, tertiary and advanced training. Inspectors with different levels of training can work on their own lesson plans and interact with students at their level.
3. Big changes in the workplace. Distance learning provides a better environment for millions of people, especially young people who are learning without being separated from the workforce. This type of training plays an important role in training.
4. A new and effective tool for teaching and learning. Statistics show that distance learning is just as effective as distance learning. In addition, distance learning goes beyond the boundaries set by the university. The advantage of students studying on this basis is that they are provided with the best, high-quality materials and teachers. Based on the methodology of teaching and management, the teacher should be free from the conditions of teaching in the classroom.

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# FORMATION OF LOCAL BUDGET REVENUES IN THE MODERNIZATION OF THE ECONOMY

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## Annotation

**Today, among the state measures to ensure the effective implementation of the state budget, it is important to make extensive use of the treasury services and to make radical changes in budget practice on this basis. Simply put, the treasury is a special financial body that manages the revenues and expenditures of the state budget. The treasury system looks different in different countries. In most countries, it is organized under the Ministries of Finance, has certain rights and is subordinate to it in the conduct of its activities. In some countries, the treasury includes departments and agencies that play a key role in the management of public funds and perform the functions of fiscal and customs policy.**

**Key words: budget, economy, crises, banking, private sector, expenditures, accounts, external debt.**

Ensuring effective budget execution for each state is one of the main requirements of fiscal policy and management of the budget process. Ensuring the effective execution of the state budget is also an important issue for Uzbekistan in the implementation of fiscal reforms. As noted by President Islam Karimov, "In the second phase of the reforms, the most important task of fiscal policy is to stabilize the economy by limiting the budget deficit. In this way, it is to allocate current socially significant expenditures that stimulate economic activity and to ensure the most optimal balance between the deficit. Attempts to balance the budget only by further drastically reducing public spending on daily consumption and rebuilding the economy could worsen the economic situation and prolong the reform process".

During the last decades of the last century, as a result of budget crises in a number of countries, including some developed countries, the focus on the effective execution of the state budget has increased dramatically. Although the factors that lead to such negative situations are different in each country, it is possible to identify two common directions that are specific to all of them. In some countries, the cause of the crisis is the gap between expenditures and revenues, and, consequently, the growing budget deficit, which in many cases is covered by inflationary sources, while in other countries the situation is characterized by high levels of debt from foreign countries. and, consequently, economic growth in return for a sharp rise in public sector spending. But in both cases, as a result

of them, to a greater or lesser extent, there was a large budget deficit and related monetary imbalances. All this has led to a sharp decline in the inflow of external funds (the level of external debt exceeds the limits of their ability to repay) and the disruption of the exchange rate system. The analysis of such cases shows that during these decades, the budget systems of many countries have undergone irreversible negative changes. Factors such as budget deficits, large external debt, the conduct of economic activity through many different guidelines, or in other words, regulation and protectionist policies have led to a deepening of inflation, exchange rate volatility and rising interest rates at the macroeconomic level. caused problems to escalate.

Under these circumstances, the governments of some countries faced the challenge of mobilizing additional revenue, reducing costs, and improving public finances through a combination of both measures.

What exactly is a treasury? The treasury system allows for the single-handed accumulation of budget revenues and expenditures and, consequently, drastically reduces the incidence of inefficient use of budget funds for other purposes. Temporary cash disruptions in the treasury system will be eliminated, all primary payment documents will be in the hands of the treasury, and thus maximum reliability of budget execution, quality and speed of analysis will be ensured. The treasury system allows for efficient management of budget flows, satisfaction with less cash balances than the current execution of budget expenditures, and, as a result, a quick and final balance of state budget revenues and expenditures.

The treasury is pushing for a sharp reduction in borrowing from the central bank, the banking system in general, or the private sector. In addition, in the formation of a developed financial system provides for the competent management of public financial resources and the uninterrupted execution of the budget, as well as control over the targeted use of funds by recipients of budget funds. As a result of the introduction of such a system, the treasury bodies will have a comprehensive control over the use of extra-budgetary funds of public finances by all budget units, resources of extra-budgetary and trust funds, as well as recipients of budget funds. The organization of control at the level of demand, in turn, will limit the transfer of budget funds to budget organizations in a timely manner and in the amount, as well as interruptions in this regard.

**The treasury system performs the following functions during the budget execution:**

- ensuring that actual costs meet the targets set for the current fiscal year;
- adjusting the amount of expenditures, taking into account the changing economic situation and budget revenues;
- to ensure that payments are strictly targeted during the review process and to prevent inefficient use of allocated funds.

Execution of the budget through the treasury is based on the unity of the treasury. This principle stipulates that the relevant budget execution body opens a single account in the Central Bank and collects all revenues and revenues from sources that cover the budget deficit, and makes all payments provided for in the budget.

This means that the bank accounts of budgetary institutions will be closed and personal accounts will be opened for them in the treasury. These accounts reflect the limits of budget obligations, the funds received and the status of fulfillment of obligations at the expense of the relevant budget.

**The following tasks are assigned to the treasury bodies:**

- preliminary and current control over the management of funds in the treasury, the targeted use of budget funds;
- short-term prospects of the state budget resources;
- collection, processing and analysis of information on the state of public finances for public authorities and administration;
- preparation of information on relevant budget financial transactions. To perform these functions, the treasury authorities:
  - Carries out cash execution of the republican and local budgets, owns funds in the relevant accounts of the banking system, distributes revenues between budgets of different levels;
  - maintains a consolidated register of users and recipients of state budget funds, takes into account the movement of state budget funds, collects, processes, analyzes and prepares reports;
  - short-term revenue prospects and the state budget maintains cash execution of expenses;
  - directs the work of the territorial bodies of the treasury.

The successful development of any state's economy depends on obtaining objective and timely information about the state of financial and material resources of the state and their effective management. The government should be informed about the daily receipts in its account, how and in what amounts the expenses to be made today and in the future, and the prospect of daily income. The treasury is the body that provides such information.

In order to effectively manage public finances, the treasury must have a single account, which reflects the accumulation of all financial resources of the state, all operations of the

executive branch on budget execution. A single account is opened with the Central Bank. The essence of this principle is that the funds received from separate sources in the treasury do not have a special purpose and are not used to cover certain or predetermined costs, but rather form a single, general and indivisible fund, from which the whole state funds will be received for expenses.

At the same time, the uniformity of government revenues and expenditures does not mean that all funds will go to one cashier and all payments will be made from it. Because it's not even technically possible. In practice, the uniqueness of the fund is that all funds received by the state are credited to a single, common account, and the state transfers funds from it, regardless of the direction and location, for all payments made by it.

The implementation of a single account system will allow the transition to a radically new system of financial planning. Its main tasks are:

- preparation of cash flow projections for the purpose of uninterrupted payment of budget expenditures;
- determining the period and cost of cash shortages;
- timely servicing and management of loans;
- Identify options for financing expenditures during periods of cash shortages.

The introduction of the treasury system will allow finance ministries to actively influence the processes taking place in the existing financial system and thereby accelerate the development of the country's economy. In recent years, in most countries, the treasury has begun to play a more active role in the public finance system as a whole, in addition to its core functions, such as ensuring the execution of budgets at various levels. They are becoming a kind of public financial institution with universal functions in the field of economy and public finance. For example, treasuries have temporarily free budget funds, which are used as an interbank credit market and credit resources for enterprises and organizations. Using the cash balances in the accounts, the treasuries also act as borrowers or lenders in the capital market by placing temporarily free budget funds on deposits or securities and thus generating additional revenue for the budget.

The functioning of the treasury system not only allows for the regular management of public expenditures through the mobilization of public financial resources, but also allows for effective control over them. The highest level of "transparency" and accountability of expenditures in the treasury system is achieved.

Treasury systems have different forms in different countries due to their form, tasks and existing legal framework. In the United States, the United Kingdom, Australia, New Zealand, Kenya, and Tanzania, for example, the treasury system has an "extended function" system, in which the treasury is responsible for formulating and conducting economic and financial policy. Extended



functions performed by the treasury may in some cases include payments (to the state and performed by them), but this function is an additional function that is not primary to them. In most countries, the functions of the treasury are limited. For example, Argentina's 1992 Public Sector Financial Management and Audit Act includes agencies, regulations, and procedures related to the collection of revenues, public sector payments, and cash assets in the treasury system. This definition stipulates that the treasury does not perform the function of managing public debt other than issuing promissory notes. In some countries, the treasury is responsible for maintaining public debt, precious metals and other assets, in others it is responsible for checking them before making payments, and in others it is responsible for preparing treasury reports. In all these activities, the treasury works in close connection with the banking system.

In the United States, Congress is actively involved in budgeting. Here, congressional approval is even required to limit the implementation of initially approved expenditures during budget execution. In other countries, the government plays a key role in budgeting. Here, the Ministry of Finance or the Treasury has a strong position and broad administrative powers. In Germany, the Ministry of Finance also has the right to reduce spending when economic conditions require it.

The system that exists in New Zealand is very different from the systems that have a clear administrative orientation in European countries. While this system has a strong influence on the executive planning authorities, a significant difference from other systems is that it decentralizes management responsibilities within the system. The basis for the allocation of funds to line ministries is the procurement contracts concluded in New Zealand with the permission of the Treasury of the Minister and the Chief Executive Officer of the budget organization. The ministries are then responsible for the terms of the contract and the delivery of the agreed product. However, the New Zealand Treasury has the authority to manage the budget cash register and clean up the balances of bank accounts of government agencies on a daily basis. It also oversees the obligations of public administration bodies that use budget funds under the Public Finance Act by regulating the issuance of orders to carry out expenditures.

In New Zealand, the 1980s saw a major reform in public finance management and accounting. Its essence is that accounting has been transferred to the method of full deductions and to the system of general principles of accounting. In addition, New Zealand's public finance management system is highly decentralized, with an emphasis on budgeting for services.

As mentioned above, the formation of a new treasury system with the help of international financial institutions has begun in our country. As important as it is to

study the experience of foreign treasury practices, the experience of countries with a common history in the near future is even more important to us. Naturally, at the initial stage of public financial management reform in our country, the former Soviet republics with similar conditions to us, as well as other Eastern European countries with a centrally planned economy (MRI), focused on how this work was done, the achievements and shortcomings. - It is expedient to pay attention.

According to international experts, the Republics of Latvia and Kazakhstan have achieved relatively good results in the formation of the treasury system.

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## THE IMPORTANCE OF AN INTERDISCIPLINARY APPROACH TO TEACHING PHILOSOPHY

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### ABSTRACT:

**In this article analyzed the relevance of using an interdisciplinary approach during the teaching of philosophy. The author of this article paid attention to the points of the connection of philosophy and science.**

**KEYWORDS: philosophy, science, problems, approaches, methods, information, knowledge, education, pedagogy, interdisciplinary approach.**

### INTRODUCTION:

Reading and studying philosophy and understanding the essence of the content of philosophical ideas requires one to have knowledge in a certain sense. For while philosophical observation of the universe, being, man, and his life is abstract, it also requires concreteness.

In the process of teaching philosophy, of course, it is important to rely on scientific knowledge, that is, the existing sciences, their achievements. Because the concept of philosophy and science are closely intertwined. Initially, all sciences existed in the structure of philosophy, and later, as a result of differentiation, each science gained the status of an independent science, separated from philosophy, but today the connection between them has not lost its significance.

The process of integration between disciplines and the emergence of

interdisciplinary approaches have a major impact on philosophical thinking, as well as on the existing paradigm. Because the integration between different disciplines leads to a change in research and the emergence of new discoveries, ideas and doctrines, which in turn leads to a change, renewal of our philosophical ideas about the universe.

In the process of teaching philosophy, the interdisciplinary approach is crucial in the development of thinking, worldview. In the process of teaching philosophy, it is important to analyze the traditional problems of philosophy in terms of an interdisciplinary approach.

There are several objective reasons for the growing role of interdisciplinary approaches in the teaching of philosophy.

The first and foremost reason is the nature of human cognition. In this case, especially scientific knowledge becomes increasingly important methodological. That is why we rely on axioms before we base any new theory. However, the nature of axiomatics is always intuitive: there is no need to prove axioms, it is accepted intuitively, on the basis of experience. Then, after the adoption of the system of axioms, the "body" of science is built. This stage involves discursive, logical, proof processes. While any science is surprising, it ends up confirming it through intuition-based experience. In fact, if we conduct 1,000 experiments and "make sure" that our theory is

correct, who can guarantee that in 1001 experiments it will not be rejected. Thus, here we believe in intuition, because verification through experience is distinguished by the fact that the immanent has a limited basis. Similarly, the nature of axiomatics and the nature of experience are also intuitive. So let the theory be created and let it “work”. However, the time will come when the scientist will come across some confirmation that cannot be proved or refuted within the framework of this theory. This situation is strongly confirmed by K.Gyodel's incomplete theorem [1; 62]. In order to acquire new knowledge, it is necessary to create a new system of axioms and a new "body" of knowledge. The mechanics of Aristotle, I. Newton, and Einstein were also in the same situation. At the same time, each old theory goes into the new. This is the essence of the principle of conformity formulated by N. Bor.

Theorists of science, historians of science, justify the development of both science and society in general in relation to information. Indeed, there is a growing trend of integration of philosophical knowledge based on information technology.

“The process of informatization as the next direction of the dynamics of human society requires the development of life in a number of areas. Significant changes are taking place in the field of education in this direction. In particular, due to the scientific revolution and informatization, there is an opportunity to further increase the efficiency of reading and teaching” [2; 22].

However, today people can develop the intuition that is often formed as a result of engaging in philosophy, creativity, art. Thus, along with the objective process of information development, the role of interdisciplinary knowledge, which acts as a bridge between the exact sciences, philosophy and art, is growing. It is difficult to say that creative thinking is

necessary for the simple study and teaching of well-known ideas. It is actually an intuitive-reproductive mental process (learning process, formal-logical operations on computers, etc.). However, it will be possible to demonstrate creative thinking through the introduction of interactive teaching methods in this process as well [3; 12].

The second reason that allows us to talk about the growing role of the interdisciplinary approach in the teaching of philosophy is obvious, and it is due to the fact that the attitude of research in the philosophical sciences to subject and method has changed. The traditional preference of the natural sciences was quantitative methods of research, and the subject consisted of many general laws of natural development.

The efforts of modern science to reveal the uniqueness of each subject, its all-round characterization, sometimes required the involvement of various materials from neighboring humanities and natural sciences. Such an approach is appropriate because no area of knowledge is isolated, and the inclusion of all of these areas in the discussion will make up for the shortcomings associated with the highly specialized nature of education today.

Many problems of modern philosophy cannot be solved without understanding the content of the processes leading to the integration of science and the synthesis of scientific knowledge. This is because the analysis of such philosophical knowledge consists of a variety of disciplines in which modern natural-scientific, mathematical and technical knowledge is differentiated and integrated. In turn, these natural and exact sciences also develop in interaction with each other. Because of this, they help a person to understand this world more deeply. It also has a more effective effect on meeting a person's material and spiritual needs. Today, major

scientific innovations are created at the intersection of sciences [6; 43].

In order to educate future philosophers, it is necessary to increase the fundamental polytechnic training, to strengthen the interaction of all subject teachers. To do this, the following principles must be strictly observed:

- Interdisciplinary approach and the creation of a global scientific and educational environment (the study of not only subjects, but also their problems requires the convergence of methodological approaches in the field of natural sciences and humanities.)

- To develop in students the ability to think and construct invariants of knowledge, relying on the analytical and creative nature of philosophical thinking, not just the scheme of individual formulas in the name and remembering only the cases. They are required to prove that they have no particular meaning or scientific value.

The addition of the above two issues leads to a change in views on philosophy textbooks as a basic methodological tool and a source of knowledge.

By explaining, simplifying, and observing each of the interconnected objects being studied, the reader thereby changes their content, opens them, and thus learns these objects. However, following the rules of thinking not only improves the subject, but also transforms the person as a subject of cognitive activity.

Thus, interdisciplinary relationships have a multifaceted impact on the learning process. For example, it covers a variety of goals and objectives, from setting it to implementing it and achieving results.

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## USING THE POSSIBILITIES OF ART PEDAGOGY IN THE SPIRITUAL EDUCATION OF STUDENTS

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### ABSTRACT:

The article analyzes the possibilities of art pedagogy in the spiritual education of students. Research methodology - analysis of scientific literature on a given topic, as well as practical experience.

**KEY WORDS:** art pedagogy, education, spiritual education, development of spirituality in an educational organization.

### INTRODUCTION:

Psychologists B.G. Ananyeva, V.S. Mukhina, L.F. Obukhova, D.B. Elkonin note that "in youth it is possible for a person to ascend to the highest potential of humanity and spirituality. During the student period, the "sphere of feeling" becomes thinner, especially when meeting art." [1] E.V. Bondarevskaya, L. S. Vygotsky, S. L. Rubinshtein M. M. Bakhtin, V. S. Bibler proved that "in the process of comprehending art and artistic creation, the inner world of a person changes, the motivation of a person to self-knowledge is awakened. and to spiritual perfection." [2] Based on these data, it can be argued that the topic of spiritual education of young people in the vocational education system is relevant.

According to T.A. Breusova, B.M. Nemensky, T.G. Rusakova, the use of the possibilities of art pedagogy can become a mechanism of spiritual education. Purpose of the research: to consider the conditions for using the means of art pedagogy in the spiritual education of students.

### MATERIALS AND METHODS:

In the works of Russian thinkers and teachers N.A. Berdyaev, E.V. Bondarevskaya, V.S. Solovyov, I.A. elevating the personality over the physiological and rational, this is a manifestation of the "human in man". [3] A person strives for spirituality, as the pinnacle of perfection. Spirituality is inherently linked with morality, understood as a manifestation of spirituality in relations with people and society. According to TI Petrakova, the basis of "humanity in man" is the invisible cross of the intersection of the vertical of spirituality and the horizontal of morality. [4] In the pedagogical aspect, in particular in the works of N.L. Shekhovskaya, the highest degree of moral education is called spirituality. [5]

Based on the definition of spirituality, the process of spiritual education is a purposeful activity of motivating a person and helping him to ascend to eternal and higher moral values, manifested in relation to oneself, to another person (neighbour), to culture, to the world.

The fundamental in the definition is the ascent to a common human culture, which is the content of art pedagogy. According to A.A. Melik-Pashayev, art pedagogy is assigned the leading role in spiritual education, as a "humanitarian field, capable of influencing the emotional sphere of the individual, helping to feel, comprehend the mental life of one's and another person, to join the enduring, higher and sacred values that preserve the great works of culture." [6]

Art pedagogy, as a branch of a pedagogical science, contains interrelated components: purpose, content, methods, forms, means, technologies, methods of activity. On the other hand, art pedagogy is an open social system, the effectiveness of which depends on the degree of openness with the environment, which determines the content of art pedagogy

The development of spirituality in the educational organization of higher education occurs through the introduction of students to art, painting, music, theatre, as well as to various types of creative activity. An essential component of spiritual education is the development of the imaginative and emotional sphere of young people in everyday life. The harmony of a person with himself, with the world, is achieved in the course of the development of the motivational, intellectual, sensory-volitional spheres of the personality, through stimulating the appropriation of socially significant personality traits, communicative properties, and the creation of intrapersonal, interpersonal psychological comfort.

An important structural component of students' spirituality is the will, or the ability for self-organization, self-regulation and self-government. Will constitutes "a dynamic aspect of spirituality, providing awareness of the need to choose in favour of higher values." [7] This component of spirituality creates favourable conditions for the development of personality in adolescence, which is a sensitive period of self-education, spiritual self-development in connection with the need for self-realization. The model of spiritual education through art pedagogy was developed by T.B. Balina and consisted of two mutually influencing and complementary components: the content of the spiritual education of students and a complex of creative technologies of art pedagogy. [8]

The content of art pedagogy includes three areas of spiritual education: cognitive

(introducing a person to the world of culture); productive (the formation of the personality) and socio-cultural (introduction to cultural values that are significant both for the individual and for society). According to T.G. Rusakova and I.A. Solovtsova, the content of spiritual education is implemented at three stages of spiritual education: [9]

- 1) The acquisition of knowledge about the spiritual world of a person (enrichment of personal experience based on perception, comprehension, and analysis of existing works of art: visual, musical, cinema);
- 2) Manifestations of spiritual needs (encouraging students to be creative based on visualizing the work, experiencing its meaning, experiencing their own vision);
- 3) Emotional reflection and creative refraction of spiritual knowledge in artistic activity (the realization of one's ideas and the creation of a creative "product" with spiritual content using artistic means.)

The content of the stages of spiritual education is inseparably "woven into the entire process of vocational education, into all forms of educational and extracurricular work in the university." [10] In the system of higher education, spiritual education develops in educational traditions and creative extracurricular activities: competitions, student talk shows, flash mobs, youth newspapers, live magazines, blogs, creative studios, meetings with interesting people, etc. Analysis of the content of creative activities of student youth shows that in modern conditions there is a need to search for new ways of educating and developing the ability of young people to perceive and create a high level of the world of beauty and human relations.

#### **DISCUSSION:**

Let us consider spiritual education by means of art pedagogy from the standpoint of

such concepts: cultural value, controlled system, result, modern understanding.

Analyzing the experience of organizing spiritual education in universities, it can be argued that the means of art pedagogy allow you to achieve goals in ways that are unobtrusively accepted by students. The best examples of art, cultural values - this is what students can openly express emotions, natural impressions, experiences, learn a high level of cultural traditions, participate in motivating creative activity.

Spiritual education as a system is open. It is being replenished with new examples of contemporary art and therefore is as interesting to young people as traditional. Spiritual education, even with eternal values (peace, goodness, beauty, man), cannot be a closed system. Even when one of the components of the system (goals, content, methods, forms, means, technologies, methods) is updated, all the others change. It is the process of contact with the environment that gives the system features that are interesting to students, which is why its effectiveness is determined by the degree of openness of the system.

Spiritual education from the standpoint of the quality of the pedagogical process has two educational characteristics: longevity and incompleteness. They are manifested in the postponing of the result, which is intermediate in pedagogical interaction, because the process of acquiring oneself in achieving high goals, self-improvement, according to the Orthodox psychologist V. S. Slobodchikov, continues until the end of life. An indirect result is an increase in the spirituality and cultural potential of society.

The modern system of spiritual education by means of art pedagogy organically links the eternal values of secular and Christian art, the spiritual and religious traditions of Russian national culture; therefore it can be enriched with Christian morality. Reliance on

folk art, classical masterpieces, works of music, literature, painting, icon painting, samples of moral experience and the ascent of historical figures, Russian Orthodox ascetics is the main condition for the spiritual education of students. The modern approach leads the subjects of education to a dialogue between Christian and secular values.

### **RESULTS:**

Analyzing the process of spiritual education, one can name unresolved problems that reduce its effectiveness. These include:

- 1) Insufficient aestheticization, which gives a genuine and full-fledged experience of art, the educational process of the university. This is a consequence of the neglect of the fact that adolescence is sensitive to an increased interest in the richness of spiritual culture, in the ways of self-expression inherent in art.
- 2) Insufficient use of the experience of spiritual acquisition and ascent of historical and Orthodox personalities. One of the ways of spiritual enrichment of the educational space of the university can be the development of the content, forms and methods of spiritual education of students on the materials of art history and values of Orthodoxy.
- 3) Superficial (clip) perception and misunderstanding by students of the eternal values of the spiritual world, such as truth, ideals, goodness, striving for the holiness of life, compassion, mercy, harmony, beauty, etc. It is necessary to comprehend and realize that spiritual education is a process of changing the inner world of a person, therefore, it is necessary to apply individualized education technologies, especially in creative activities based on the needs of students and their desire to participate in transformative creative activity.

It is possible to minimize the problems if we expand and enrich the artistic and aesthetic component of the educational field of the

university, the space of spiritual self-realization of the university, introduce modern forms of acquiring spiritual meanings based on the creative development and transformation of reality by students.

#### **CONCLUSION:**

1. Spiritual education of students by means of art pedagogy is a long process, covering cognitive, formative, socio-cultural activities. This process is based on the integration of the highest values and spiritual meanings, expressed in works of art that can cause joy from meeting beauty and a desire to create for others.

2. Spiritual education is an open, developing system. Its content is not only works of art, but also creative comprehension, the motivation of students to selfless service to the higher spiritual principle in a person.

3. Technologies of art pedagogy in spiritual education are determined by its content and cover all types of educational and extracurricular activities of a student, based on the principles of individual and collective interaction, passion for art, history of spiritual asceticism.

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# ORGANIZATION OF THE GAME PROCESS OF LEARNING IN THE PRESCHOOL EDUCATION SYSTEM

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## ABSTRACT:

**The article analyzes the organization of game learning in the preschool education system. Research methodology - analysis of scientific literature on a given problem, as well as practical national experience.**

**KEY WORDS: gameplay, learning, preschool education, preschool education, education.**

## Introduction:

Game is one of the main activities for a preschool child. In the course of the game process, the pupil of the child receives skills and abilities, learns the world around him.

- The importance of play is determined not by the amount of time spent playing it, but by the satisfaction of the child's basic needs.
- In play activities, other activities originate.
- Game is a potent stimulus for mental development.

All theoretical areas of pedagogy unanimously recognize the importance of play for young children. [1]

## MATERIALS AND METHODS:

Analysis, observation, data collection, induction and deduction, as well as functional-structural and systems approaches, were used as research methods.

## Discussion:

The world around us is changing rapidly, followed by educational technologies. Preschool education is the first stage of the country's educational system. All these conditions are necessary for the development of the

educational environment and the formation of the child's personality. [2]

Requirements for a kindergarten teacher:

- comply with the requirements of the law on education,
- Work in a team of like-minded teachers,
- Correlate your activities with changes in the education system,
- Competently work with pupils,
- Development of an educational plan,
- Training of pupils in the system,
- Taking into account the age characteristics of the child,
- Building relationships with parents,
- Carry out tasks set by kindergarten management.

Legal documents define the tasks of our preschool education system. The main requirement is to improve the process of upbringing and education. To solve the primary goal, subtasks are distinguished:

- Improving the theoretical training of the teaching staff,
- Mastering theoretical concepts in practice,
- Development and implementation of modern didactic material,
- Creation of a subject-spatial environment in an educational institution.

A training project is being developed to implement the tasks fully. At any stage of its implementation, it is possible to conduct reflection and evaluate the success of the activity. [3]

Development environment organization plan:

- Analysis of indoor conditions for groups.

- Monitoring the level of knowledge of teachers for further training.
- Conducting training activities for the teaching staff.
- Purchase of modern toys and teaching aids.
- Involvement of parents in the arrangement of the learning environment of the group.

Despite the fact that children are constantly in play activities, for more effective learning, play areas should be separated. Teachers note that zoning of the game material is essential. Moving from one section to another focuses children's attention on the essence of learning.

The game should not only arouse interest but also emotionally capture the child.

The new information should be embedded in a familiar game situation.

Playfully mastering new information:

- Determination of the goal of the game,
- Choice of means for the implementation of tasks,
- increasing the percentage of independent actions in the game.

Game methods of pedagogical work:

- Facilities,
- Forms,
- Technology,
- Lessons.

In the literature, there are often methods of pedagogical work for junior schoolchildren with a prefix - "game", which means the adaptation of methods, their integration into the game process. Game becomes not just a separate element of children's activity, but a means of learning. There are differences between the game and game methods in teaching:

1. Real game is a free activity of a child, which is carried out without coercion and external control. Adults do not interfere with the game, cannot prohibit it or interrupt it. Activity is help on request, participation as a player, observation.

2. Game is a form of child's independence. The child is unable to direct the game learning. The result of the child's activity allows you to evaluate the work of consciousness and psyche. [4]

Elements of the game in the learning process allow you to activate the child's mental activity, master complex material, and solve an educational problem.

Game can become an indicator of a child's knowledge and skills. In the process of testing knowledge, you can use the elements of the game. The environment will not be like an exam; the child will feel relaxed and show better results.

Game has a beneficial effect on relationships in the children's team. Peers can actively communicate, experience situations, and achieve common goals. The child learns to be part of a team, to perform everyday tasks and not to forget about their own interests. Game situations leave a mark on the child's mind. [5]

Game is a part of the development:

- Physical,
- Psychological,
- Aesthetic,
- Moral.

Game is an active activity that increases vitality and satisfies the needs of the child.

Game is an emotional uplift, while pleasure is brought not by the result and assessment of the activity, but by its process. The child receives positive emotions from the definition of roles, rules of behavior and from their precise implementation.

The most important condition for conducting a game together with a teacher is his playing competence. This is the ability of an adult to lead the game and become part of the gameplay.

- An adult, that is, an educator must be creative, with a developed creative imagination. This is the ability to come up with a new plot, take a

fresh look at the situation, give new meanings to familiar objects, and not think in stereotypes.

- The teacher must partly become a real player. Children are susceptible to emotions, and playfulness can reduce the quality of the gameplay. The teacher must take the game situation seriously without neglect. The teacher in this situation should be open, artistic, and emotional.

- Sensitivity and tact. The teacher must adhere to the general plan and purpose. At the same time, the management of the game can fail if you only take on managerial functions and give instructions.

- Variability of teacher behaviour. As children grow up, the educator can limit themselves to observation from the side and play along with the children. It is worth moving away from the authoritarian and didactic position of the educator, which has been used for a long time in preschool institutions.

Types of gaming activities and their organization:

- Folk, folklore games - a layer of the cultural heritage of our ancestors. Chastooshkas, jokes, proverbs contain age-old knowledge and ideas about life.

- Round dance games are a unique tool for children's learning and interaction. Children learn to feel music and rhythm, interact together. A round dance can fit into a game of any theme. It's crucial to find the right music and rhythm. Children learn to feel involved in a collective cause.

- Finger games. The child's brain activity is associated with fine motor skills. If some function is reduced, then you should pay attention to finger games. No props are required for the event, preparation of the playing space. The game allows all children to be involved in the process

- Modern narrative role-playing games - have serious developmental potential, help the child to better adapt to the environment. Many of

these role-playing games, such as a shop, a beauty salon, a car repair shop, simulate adult behaviour. The child carefully and exceptionally performs tasks, feels more adult. In the course of role-playing games, the concepts of politeness, interaction between people, and professionalism are developed. The child learns to fulfil and accept responsibilities. A small model of behaviour in kindergarten allows the child to become a grateful and considerate person.

- Didactic games - games during which preschoolers, first together with a teacher, and then independently, learn to solve various problems. This type of play activity takes up a significant part of the time of the kids. Didactic games enrich the child's sensory experience, stimulate the development of mental abilities. It is this activity that stimulates the development of skills that will be useful to the child in life. The didactic games that the teacher selects should be appropriate for the age of preschoolers.

Didactic games include board games with cards, loto, dominoes. During the game, children learn to distinguish shapes, colours, and find paired images. In the future, kids will be able to apply knowledge in modelling and drawing classes. After didactic games, the child can distinguish objects by shape, size, structure, proportions.

- Artistic and didactic games allow the child to master complex operations for analysis, synthesis, comparison, generalization. He will improve these functions for a long time in the process of further training. It is vital that the basic concepts are fixed in the mind of the child. In the course of such games, observation, eyes, visual memory, imagination develop. Children learn the concepts of symmetry, structure, design, colour, spatial arrangement. The general development of the child occurs through the development of visual creativity. Board-printed games are linked to a specific age and developmental level of the child. Children from

the same group, but different subgroups, may require different types of material.

- Outdoor games are one of the favourite games for young children. Due to their biological activity and restlessness, children take part in the process with pleasure. It is crucial for the teacher to ensure the safety of the child in a group setting or on a walk. In the course of such activity, kids improve their motor skills, acquire new, more complex ones. Children develop dexterity, accuracy, endurance. The child learns to interact with peers and follow safety rules. To achieve a result, you have to act independently; freedom of action implies responsibility. The result of the activity will depend only on the actions and decisions of the child.

- Theatrical activity is a type of creative activity that broadens the horizons of the child, forges connections in the children's team. Children can try on different roles when preparing a performance. Performances are often part of a children's party. The child learns to stay on stage, gains experience in public speaking, develops speech skills, and trains memory. There are no analogues of such activities in the educational process.

#### RESULTS:

The result of the research is the study of the organization of the game learning process in preschoolers. It has been determined that play activity is the main form of enhancing the cognitive activity of preschoolers, and, accordingly, has an extremely high value.

#### CONCLUSION:

Game is the only type of child's activity that involves creative freedom. In Uzbek musical education, the idea of forming a personal musical culture through art pedagogy has gone from accumulating the experience of folk pedagogy and the folklore traditions of musical education of children to developing the basics of musical learning and recognizing the

student's musical culture as an essential landmark in musical pedagogy. [6] With the proper conduct of game training, the teacher enormously increases the effectiveness of his activities. It is thanks to gaming activity that preschoolers have the opportunity to realize their creative and mental abilities, which in the future has an impact on the process of consuming new information and its adaptation.

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## CONSTRUCTIVE TRANSFORMATION OF PROJECTIVE THINKING

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### ANNOTATION:

In this research , the problem of constructive transformation in the form of projective thinking is studied systematically, philosophically and reflexively . The article also analyzes the genesis, epistemology, branching, and social significance of the concept of constructivism.

**KEY WORDS:** constructivism, projective way of thinking, transformation, innovative activity, constructiveness, renewal and tradition, way of thinking.

### INTRODUCTION:

From the first years of independence, Uzbekistan has become a state policy to nurture creative youth and innovators who will create advanced economic mechanisms, modern scientific directions and innovative technologies to further accelerate and increase the effectiveness of sustainable development. Because the implementation of large-scale reforms depends on a new and innovative way of thinking.

Innovative development is reflected in a number of qualitative changes. First of all, structural and functional reforms will become a priority in all spheres of society. In a society undergoing such changes, the introduction of new technologies, innovative and projective thinking and action, the widespread use of advanced production methods and tools will rise to the level of social need. This takes the form of a sustainable practice.

In this regard, in the Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis : "The

need for an electronic platform for scientific achievements, the formation of a database of domestic and foreign scientific developments, the need for each higher education and research institution to establish cooperation with prestigious foreign universities and research centers." [1]

Also, new principles and directions are taking their place in the development of social consciousness and thinking, and there are wide opportunities for their improvement [2.9]. This opportunity is reflected in the research of young researchers.

With the rise of science and technology in social development, it is becoming clear that there is a deep similarity between the new scientific way of thinking and the spiritual and cultural life. There is a process of innovation in people's lifestyles as well. At the same time, the directions and paradigms of social sciences and humanities in the Republic have entered the stage of innovative reconstruction. As a result of this process, the concept of 'innovation', which has the ability to have an epistemological effect on the problem of projective thinking, has recently entered the scope of the subject of scientific methodology.

Projective thinking is an ideological and conceptual product that combines tradition and innovation. It always has new plans, projects, systematic, integrative, pluralistic, optimistic, heuristic and creative approaches.

Projective thinking forms a mosaic unity of ideas, principles and norms of rationality formed in the human mind, in which it has a unique, holistic image, functions as a guide, unification, generalization, evaluation of traditional and new ideas. In the form of

projective thinking, individuality, individuality, and especially innovation are the hallmarks.

A developed idea can be a new or restorative idea for the owner of thought. In a certain sense, the term productive thinking has a broader meaning than the term "innovative thinking". On the basis of the formation of non-directional, sectoral innovation thinking is aimed at the development, implementation and dissemination of new ideas, after the activity becomes a routine process, creative thinking rises to the level of productive, creative activity, that is, productive activity. In this way, cognitive, intellectual innovation is formed.[3.571]

The innovation process represents the technological side of innovation. It is a comprehensive phenomenon that involves the emergence, acceptance, assimilation, dissemination and implementation of innovations. Innovative activity expresses the creative side of innovation, leading to changes in existing thinking and lifestyles, tools, objects and methods, social structures and technologies.

Innovation is the discovery, development, and application of new ideas, technologies, information projects, and products to society, and is becoming a major activity in modern systems of production and social activity. In the field of intellectual labor, it becomes a projective innovative thinking that leads to the discovery, invention, development of a new idea or project. Such a cycle is required by a number of social conditions and reasons.

It should be noted that the formation of a sub-industrial society has created an environment of positivity and creativity towards innovation. The definition of such a society is that it is based on machine production, market economy, scientific organization of labor, technical, organizational and economic rationality (rational operation). Striving for

innovation, meeting the needs that are improving through innovation, creating a variety of services is a constant process.

Naturally, social renewal, its theoretical and practical issues, became the subject of research. In the process of formation of the object and subject of this research, the science of "Innovation" was formed. Constructivism (derived from Latin, *constructio*, meaning construction) emerged as an epistemological trend in the philosophy of science in the late 1970s and early 1980s. In particular, P. Watslavik, YE. Glazerfeld, Z. Schmidt, H. von Ferster, U. Maturana, G. Roth, II. Lumann, G. Rom, and others have done a great service in this. [4.142]

The basic idea of constructivism is to be active in constructing the world around us, rather than reflecting it in the processes of thinking and understanding. [5.32] Constructivists oppose simple realism, the interpretation of knowledge of any and all its products as the result of reflection on the interaction with an objective being, and so on.

According to constructivism, there is no truth other than man-made. According to constructivism, the main difference between man and other beings is that he is a thoughtful, even active, or not active, but constructive, creative, and constantly self-creating being. In fact, the constructive transformation of scientific thinking involves an pivotal element in the mechanism of creativity, such as the possibility of continuity.

In the form of thinking, constant updates and innovations are achieved through constructive transformation. Constructivism manifests itself in the form of thinking as a worldview that creates a worldview in a cognitive sense. The principle of constructiveness is a way of thinking that determines social reality. The idea of constructing models in cognition is expressed in the works of the Swiss psychologist J. Piaget.

He used linguistic logic and cognitive theories to describe the psychological knowledge structures of thinking.

The American psychologist J. Kelly described the theory of "personal constructions" as "constructivist alternativeism". With this approach, J. Kelly emphasizes that the universe is full of pluralistic models of man. Kelly compares the creation of a picture of the world by the average person to a scientist who creates hypotheses about the universe, checks their adequacy, and corrects them. [6.78] They developed the theoretical ideas and approaches needed to study the constructive and variable properties and laws of projective thinking.

The constructive transformation of projective thinking in social life is influenced by objective and subjective, internal and external forces, various factors:

✓ First, the constructiveness of projective thinking is also determined by the renewal of paradigms in science.

✓ Second, strengthening the constructive aspects of thinking, applying it to science and practice, provides an opportunity to shape modern thinking and inculcate it in the minds of professionals.

✓ Third, the projective time is a constructive transformation of the way of thinking, its conceptual essence, its social necessity, a methodological task in the acquisition of professional skills by young professionals and scientists.

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## VIEWS ON THE LEVEL OF STUDY OF THE LIFE AND WORK OF SIDDIQUI AMAZE

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### Annotation:

Tajik literature has a number of great geniuses. The works written by them and inherited by us have been passed down from generation to generation without losing their significance for centuries. However, during his short life, he did not study all the peculiarities of the life and work of Siddiqi Hayrat, a contemporary of the master poet Sadriddin Aini, known as a master of his time. Because the poet's manuscripts were scattered until the fifties. For the first time, on the initiative of Rasul Khan Khodzoda, the first collection of Hayrat's poems was compiled. This article deals with the life of the poet, his creative activity and the creation of his office, as well as the subtleties of his poetry, the poetic skill of the poet.

**KEY WORDS:** Devon, S.Ayniy, R.Khodzoda, ghazal, satire, tazkira

### INTRODUCTION:

Hayrat is one of the most talented poets of the late XIX - early XX centuries, who has a special place in the history of Tajik literature with his sincere and meaningful poetry. It should be noted that until recently, not all aspects of the life and work of Muhammadsiddiq Hayrat have been sufficiently studied. Research in this area has been limited. The fact that the poet's works have not yet been studied in detail can be explained by the lack of a critical text and manuscripts of his poems. The first collection of Hayrat's poems was compiled for the first

time in 1964 at the initiative of Rasul Khan Khodzoda. It can be said that no special research has been conducted by Tajik literary critics about this skilled and talented poet.

Sadriddin Ayni was one of the first to inform the scholars about the poet. It is worth mentioning that S. Ayni was a close friend, colleague and companion with Hayrat. Sadriddin Aini spoke about Hayrat and his artistic image in his memoirs, starting with his "Namunai adabiyoti tojik" ("Samples of Tajik literature"), "Yoddoshtho" ("Memoirs") and many other articles.

Sadriddin Ayni says about the poet in his book "Namunai adabiyoti tojik": "Hayrat is one of my humble companions. But because of his talent and love for literature, he rose to the level of a teacher at an early age. It is unfortunate that the owner of the book passed away at a young age (at the age of twenty-seven). Otherwise, this supernatural force could have created geniuses in the world of literature. Over time, seeing that the poet was able to understand the essence of literature and its laws, Ayni's respect for Hayrat increased. This can be seen in his words in Memoirs. " - At the first meeting, I noticed that he was very talented and knowledgeable, and I think that the leader of the poetry I was looking for among the great poets and poetesses of that time was Hayrat. He was my age and a classmate in a madrasa. But from that day on, I chose him as my teacher. "

It is clear from Ayni's sincere thoughts that Hayrat was not only a talented poet and a diligent student, but also one of the most



prominent literary critics of his time. His name was in keeping with his personal qualities, image and talent. Literary critic S.Khojakulov says about S. Ayni's views on Hayrat: It is necessary to acknowledge the description of Ayni and R. Khodzoda about this writer and his literary heritage. ". Hayrat has a special place in the literature of the period with its unique style and taste, pure ideas, new creative spirit, unique talent and vision. Although he did not make a serious and complete change in this process as a poet, but the continuation of the best traditions of classical Persian-Tajik literature, the preservation of its pure lines, the rich depiction of his poems, the its content, its representation of the best aspects of the artistic and literary process, is of special recognition with features such as the period reflecting a special state of creative influence.

Hayrat became a well-known poet in the literary environment of Bukhara in the late 19th century. One day, Sharifjon-Makhdum, one of the famous scholars of the time, informed Sadri Ziyo about the talent of Ayni Hayrat. Sharifjon-Makhdum Hayrat, in order to test his poetic talent, ordered him to finish his father's ghazal. The next day, Hayrat finished the muhammad for the ghazal and handed it over to Ayni to deliver to Sharifjon-Makhdum. Aini says: "Seeing this, Sharifjon-Makhdum admired Hayrat's skill and considered him one of the most unique creators of the time." Here are two verses from this muhammad:

Rafiqi vahshatam, az donishu ulfat ba  
farsangam,  
Xirad dastu girebonam, ba nomu nang dar  
jangam,  
Mapurs, ey do`st, az tahqiqi holi  
hayratohangam,  
"Ba taqlidi chunun z-on dushmani nomusu  
farhangam

Ki shoyad on parirot az sari sho`xi zanad  
sangam."

#### TRANSLATION:

I am terrified of ignorance and ignorance, from knowledge to kindness, from wisdom and hatred in the name of shame in war, Friend, do not ask for astonishing information. "Imitation of reason is the enemy of my honor and culture, This stone may touch my head."

The main sources in the study of the life and work of this talented writer are his artistic heritage, scientific and literary sources of the time, in particular, several special chapters of Ayni's "Memoirs", which are important for understanding the artistic image of the poet. , it is acknowledged to be his commentaries and memoirs. .

The portrait of Hayrat is described in Ayni's Memoirs as follows: ) his nickname was so appropriate to him that I was astonished to see him, and thought of the meaning of his nickname in this full-fledged relationship with the poet. ". Ayni's words in Memoirs show that Hayrat was a humble, simple, curious and sincere artist, despite his high potential and poetic talent. At the same time, Sharifjon Makhdum Sadri Ziyo is a person who made a worthy contribution to the emergence of Hayrat on the literary scene. Sadri Ziyo's yard is one of the prominent centers of Bukhara's literary environment. Every week, Bukhara poets and literary enthusiasts gathered there for poetry readings and discussions. Hayrat also took part in these literary gatherings and honed his creative skills.

Hayrat studied the history of classical Persian and Tajik literature, studied the rules of poetry and poetry. Although Hayrat was the same age and classmate as Ayni, Ayni called Hayrat a teacher because of his extraordinary

abilities and knowledge. It was Ayni who introduced the poet Sharifjon-Makhdum to one of the noble people. For this reason, Hayrat meets famous people, poets and scientists and learns from them about the subtleties of science, culture and poetry. We can see the influence of Ahmad Donish's work "Navodir-ul-vakoe" on the rise of Hayrat's creativity, the expansion of his views and ideas.

The poet stays in bed in the winter of 1901 - refusing to go to school and meet friends. Hayrat lived in the lowest room of the smallest and narrowest Suzangaron madrasah in Bukhara. Regarding Hayrat and the condition of the room in which he lived, S. Ayni writes: "I saw Hayrat's life in a room with nothing but tea and bread, and I found this situation disastrous for the poet. I was crying. But I was not able to help him. That's why I talked to Hayrat's close friends Abdulkhalil-Makhdum, Ahmadjan-Makhdum and Mirza Abdulvahid about this situation and told them all. ". In this difficult situation, his guardian and guardian friends were especially Sadriddin Aini. Hayrat died of the disease in July 1902. According to Sadriddin Aini, his body was buried near the Talipoch Gate, on Chorbakr Road, in the cemetery of his grandfather's grandparents.

After Hayrat's death, his fame grew during his lifetime. During his lifetime, he was praised only by his friends, but after his death, anyone interested in literature became interested in his work. Amir Abdullah Khan, who described himself as a poet, was also interested. He orders Qazikalon Badriddin to find Hayrat's poems and deliver them to him. After that, Kozikalon calls Ayni to his house and asks him to hand over Hayrat's poems to him. "I don't have any of Hayrat's poems. Everything he wrote was in his brother's hands. He didn't

give it to me," he says. But two months after Hayrat's death, his brother also dies.

His literary legacy is small, as he left this world at the same stage of development. However, this legacy of the poet is not summarized in his notebooks and sketches. After the poet's death, Sadriddin Aini and Munzim Hayrat managed to collect scattered poems in the form of devons from his notebooks and some collections of his relatives. Even this one desk of the poet did not appear for a long time. Only in the early 60s, the poet's written legacy was found at the Institute of Oriental Studies of the Academy of Sciences of Tajikistan. Devon consists of continental, rubai, poem, quartet, ghazal, qasida and other poetic samples, totaling 2447 bytes.

Literary scholar R. Khodizoda writes in the foreword to Hayrat's selected poems: "In early 1951, under the initiative and guidance of S. Ayni, I began to study the Tajik literature of the XIX and XX centuries. I began my research by studying the manuscripts of the Firdavsi State Library (currently the manuscripts of this library, collected until 1954, are preserved only in the manuscripts of the Department of Oriental Studies and Literary Heritage of the Academy of Sciences of Tajikistan). In a short time I was able to review all the manuscripts relating to the literature of this period. For this reason, I have neglected and superficially considered many manuscripts that are not directly related to my subject. In the meantime, I came across the inscription "Devoni Hayrat" which was written on sheets of paper of the manuscript. From my inexperience, I thought that these manuscripts were written in recent years. Poems were written randomly on the devon, and nicknames were not even mentioned in many of the poems. Somewhere a poem by Shavkat Bukhari appeared. After studying this manuscript, I was reminded of

the chapter "Heritage of literary wonder" in Ayni's Memoirs.

Literary critic R. Khodizoda adds to Ayni's comments in his Memoirs: under which many low poems were quoted. Therefore, researchers should not accept a meaningless poem under the pseudonym "Wonder" without any research, first make sure that each poem is the property of Wonder, compare them and then come to a decision.

The scholar, who did not read the Devon from beginning to end, thinks that it is a manuscript compiled with poems and ghazals of other poets. Like many other manuscripts far removed from the scholar's own research work, he wrote this devon in a corner of his notebook and did not attempt to study it.

Researcher R.Khodizoda says: "S.Aini spoke sadly about Hayrat and his lost office in almost every conversation. His words always evoked a feeling of friendship, love and sincere gratitude to Hayrat.

During the interview, I quoted the manuscript and said, "It's a pity that Hayrat's poems are missing in this collection."

After that, R.Khodizoda begins to collect Hayrat ghazals from scattered collections. From two to three years he collected many poems and poems of Hayrat. But all this did not define the creative image of Wonder.

He writes: "I have not forgotten this manuscript. After finishing my main work, in 1956 I started to study this office again. I have been translating Hayrat's biography for the last few years with the help of valuable information from the fourth part of S. Ayni's book "Memories". More detailed information about Hayrat has appeared. In addition, I gained some experience and knowledge in recognizing and studying the literature and manuscripts of that period.

Researcher R.Khodizoda, first of all, compares all the poems of Hayrat in Ayni's "Sample literature Tajik" and "Memories" with the text of the devon. All the wonderful poems of Hayrat quoted by S. Ayni in his works were in this divan. Only one byte and one satirical poem were not found in the devon. The reason why these two poems were not included in the devon

"Esdalikalar" asaridan anglashimiz mumkin. Bayt:

Chu nasozi zi shafat budani Ergash soze?  
Tu, ki Iskandari badro'y, xushovoz shavi!

**TRANSLATION:**

How can you not be happy that Ergash is a mediator? You evil face, Alexander, if you are kind!

Surprisingly, this byte was said by accident and may not have been entered into the devon because it was not written anywhere.

Another humorous poem was written about Abdullahhoja Abdi, a poet and writer who was very arrogant in the late 19th and early 20th centuries. Ayni quotes a few verses from it in his Memoirs:

Ey har xami dastoni tu bozori kalova!  
Rishi tuba bozori kalovast ilova.  
Ruxsori tu yak shittazaminest pur az zah!  
Binni tu dar zahkashi on qit`a chu nova!  
Sar hamchu kadu xoliyu az harza dahon pur.  
Qomat chu shutur navchayuishkam chu kajova!  
Yo qomati to`lonii tu cho`bai bayraq,  
Dastor bar on chun yalavi bayraqi Kova!  
Dar go`shai chashmoni tu chirkobai hammom,  
Dar teshuki binni tu loyobai chova!  
Atvori tu chun vaxshiyu andomi tu manfur!  
Kirdori tu bema`niyuguftori tu yova!

**TRANSLATION:**

O whole hand, kalova bazaar!  
Accompany your hair to the bazaar. Your face is full of poison! Here your nose is wet! Your head is as empty as a pumpkin and your mouth is full. Your body is like a camel's vagina! Or your neck is as long as a flagpole, Your hand is like a bucket's flag! Your actions are meaningless and your words are useless!

According to S. Ayni, Abdullahhoja heard Hayrat's humorous poem and immediately ran to Ayni and begged him not to allow the poem to spread among scholars and writers. S. Ayni writes: "I knew that it was impossible to get rid of it without any promises, and I made a firm promise to stop the spread of poetry."

Since Hayrat did not want to be famous as a poet, he did not give a copy of this poem to anyone but me. It turned out that a copy of this poem was not in the hands of the secretary of the Office of Wonder, and therefore this poem was not included in the office.

In addition to the poems quoted in Ayni's "Namunai adabiyoti tojik" and "Esdalikalar", the text of the masnavi "Journey to Fergana" and "Journey to Fergana" is also included in the collection. It is in his Memoirs that Hayrat says that he wrote this masnavi "at my request." However, he did not write about it anywhere. All other poems, ghazals, rubais and quatrains are carefully read and studied by the researcher R.Khodizoda. During his studies, the poet's creative style, in terms of the true depiction of the details of the event, convinced him that this devon is the legacy of Hayrat.

Another issue the researcher wanted to determine was the name of this office secretary. Nowhere in Devon was the

Secretary's name written. He says: "But I am acquainted with the calligraphy of some well-known secretaries and nobles (for example, Sharifjon - Mahdum Sadri Ziya, Mukhtaram, Munzim, etc.), I have seen many manuscripts written by them. I thought that the devon was written by Mirza Abdulvahid Munzim, the author of the Navadir-ul-Waqoe divan. there was no doubt that the poems also belonged to Hayrat."

In 1957, R. Khodizoda published an article in the magazine "Sharqi Surkh" "Kizil Sharq" (№ 5) entitled "Namunai she'rhoi Hayrat" ("Samples of Hayrat poems"), in which the first information about the discovery of Hayrat devon and published new samples of his poems.

In this way, for almost fifty years, "Devoni Hayrat" was hidden from view, and today we can read his rich literary heritage and appreciate the role of Hayrat in literature and his creative skills in the late XIX - early XX centuries.

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## HISTORICAL ASPECTS OF THE ESSAY GENRE

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### ABSTRACT:

**This article provides detailed information about the emergence and formation of the genre of essays in world and Uzbek linguistics. Essays on the development of the essay as a genre, individual characteristics and its role in the fields of linguistics, literature and journalism are analyzed.**

**KEYWORDS:** Essay genre, newspaper language, press, journalistic genres, Michel Monten "Essay", linguistics, journalism, personal opinion, experience.

### INTRODUCION:

Genres of the Uzbek periodicals and their linguistic features, means of expressiveness in the language of the newspaper, adherence to the literary language, the importance of speech culture, the study of modern trends in the development of the press language are among the current problems of Uzbek linguistics. The granting of state status to the Uzbek language, freedom in the use of the language, the emergence of objective opportunities in the language of newspapers are becoming more and more figurative, expressive, fluent, concise, authentic, expressive in a luxurious, high-flying style is significantly reduced. This situation increases the diversity, color and impact of the vocabulary of the newspaper language, the language of the newspaper is getting closer to the artistic style. An in-depth analysis of these issues, in particular, the promotion of newspaper culture, coverage of the media in the development of the Uzbek literary language, recommendations for improving the

culture of the press and literacy are among the most pressing issues of modern linguistics. In particular, the essay, which is considered a journalistic genre, is also an object of study that needs to be studied.

Although the essay genre has a history of four hundred years, it does not have a single definition as a genre to this day. This is a testament to how relevant the topic is.

Although this genre began to appear in Uzbek literature in the 70s and 80s of the twentieth century, it was first used as a genre in the work of the French philosopher Michel Monten's "Essay" ("Experiments"). This work by Monten, which has come down to us, consists of three books, written between 1580 and 1588. In this, Monten writes of the Essay: "The contents of my book are myself."

"Monten's philosophical, historical, political, religious, linguistic, pedagogical, moral worldview, general and private views are reflected in his 'experiences'. Monten wrote about the customs, rituals, and content of the books read by different peoples, and if their writings did not return to the main source — the image of the individual — they would become a collection of scattered commentaries, quotations, and excerpts. [1]

"In the essay genre, the author's personality is one of the key features that make up the genre structure and is important. However, not only the author's personality but also social life is analyzed. Another feature is to express the current problems of today. The genre of essay has a strong imagery and expressiveness, which is an expression of the fact that it is a genre of artistic journalism. [2]

As one of the world's essay researchers puts it, "the protagonist in an essay is the author and the reader," and they see each other face to face, "shaking hands." This is a form of communication between the reader and the reader from the first attempt." [3]

Dialogue is another character that shapes the essay genre. No matter what form he chooses to express his thoughts, no matter how he creates the composition, the author's sincere communication with the reader always remains the leader. For example, modern essayist Andrei Bitov describes his essays as "truth is like a genre". [4]

The German philosopher Theodor Arno describes "an essay as a genre that represents a moment that creates an idea that is not logically formed as a whole".

As L.G. Kaida writes, the essay genre dates back to antiquity. In Lucian's Declaration, Plato's Dialogue, and Mark Tullius Cicero's treatises, man's personal attitude to all things in the world is described. [5]

In 1697, Francis Bacon wrote an essay, and in the late eighteenth and early nineteenth centuries, B. Franklin's essay became known in the United States as the founder of the political essay genre. In Russian literature and journalism in the 1930s and 1940s, writers such as Marina Tsvetaeva, Konstantin Paustovsky, Ilya Ehrenburg, Alexei Tolstoy, and Joseph Brodsky wrote in the essay genre, but the essay genre is not typical for Russian literature and journalism.

Essays, which belong to the genre of art and journalism, have their own characteristics. The essay genre is the object of study of literature on the one hand, linguistics on the other, and journalism on the third. Therefore, the term "essay" is interpreted differently in different literatures. In particular, in the "Explanatory Dictionary of the Uzbek language" "essay (French essay - experience, exercise, sketch) written on literary, philosophical,

social, journalistic and other topics, the problems are interpreted in a free form, not in a systematic scientific way" [6] is described in the "Russian-Uzbek Explanatory Dictionary of Literary Terms" as "Esse -lot.exigo - a work derived from the words approximate, measured, with a free composition, on small topics, expressing personal views and opinions." »[7]. "Essay" is a Latin word meaning "to experiment on oneself." In the "National Encyclopedia of Uzbekistan" "essay - (French essay - try, try, essay) - a free-form, small prose work. An essay expresses a subjective opinion about an object or event or person." [8] It is also clear from the definitions of the essay genre that the Uzbek essay genre is one of the scientific problems that needs to be studied today.

While essays are the object of study of linguistics, literature, and journalism, no science can be considered a complete genre. In the scientific literature, essays are combined with all of the humanities in terms of subject matter: philosophy, literary theory and criticism, aesthetics, political science, sociology, and so on. Essays are widely regarded as one of the most effective genres of philosophical expression of the general aspects of the universe and man.

There is no research on the genre of essays, which is one of the genres of art and journalism, until there is a special study on the analysis of the linguistic features of this genre. Essays as a literary genre as a scientific object of literary criticism are described in detail in the book "Journalism and Publicism" by M. Khudoikulov [9] from a journalistic point of view. She defended her dissertation on "Essay genre in modern Uzbek literature" [10]. However, little is known about the essay genre, which occupies a special place among the genres of art and journalism. Only theoretical knowledge of fiction journalism, as well as essays and essename articles that occasionally

appear in the press, contribute to the development of journalism as much as possible. BN Paluanov's dissertation on "Essay genre in Karakalpak literature" [11] was analyzed from the point of view of literature.

VV Reshetov was the first in Uzbek linguistics to study the language of periodicals, he studied the origin of words in the Uzbek press (Uzbek, Arabic, Persian, Russian) and the frequency of word groups, and compiled a dictionary of commonly used words. [12]

Later, AK Borovkov determined the frequency of use of mastered words in journalistic texts on the example of the newspaper "Zarafshon" and devoted to the analysis of the political lexicon of the Uzbek press. [13]

I.A. Kissen conducted observations on the basis of journalistic and literary texts, analyzed 101044 words actively used in Uzbek prose, and tried to identify the peculiarities of the speech of the author and character in fiction. [14]

In the scientific work of MM Mirzaev studied thematic groups of international words and terms in the press and their application in the language of the press. [15]

M. Ayimbetov is another scientist who introduced a statistical method to the linguistic study of Karakalpak, Kazakh and Uzbek journalistic texts and applied the achievements of engineering linguistics. He first defended his dissertation [16] and later published a separate dictionary, [17] monograph. [18]

In M. Ayimbetov's dissertation the comparative analysis of Karakalpak, Kazakh and Uzbek languages on the example of epics, novels, newspapers, magazines, poetry texts was studied for the first time using the methods of engineering-linguistics and information-statistical, probabilistic distribution model. identified a number of typological features of the lexicon and grammar of the languages, including the

construction of its agglutinative lexicons and genetic similarities not only with the Turkic language family, but also with the Indo-European, Finno-Ugric, Caucasian, and Semitic language families.

S.Muhamedov made his observations on newspaper and journalistic texts on the basis of quantitative (statistical) method. [19] For the first time in Uzbek linguistics, he studied the relationship between language and speech using information-statistical methods, on the basis of which he identified a number of typological features of the lexicon and grammar of modern Uzbek publicist speech. Its distinctive features of the Uzbek language in terms of the construction and transmission of agglutinative lexicons revealed similar issues of language standardization, such as the infinity of the possibility of creating new lexicons from a particular source, as well as the fact that this possibility is extremely limited in journalistic speech. The language material, which served as a source of research, was later published in the form of a dictionary. The dictionary is based on the lingvostatic method, in which lexemes are accepted as a unit of vocabulary.

More than 200,000 word usages were obtained. This dictionary is based on the principles of the quantitative model of Turkish texts.

T. Kurbanov's dissertation on "The journalistic style of the modern Uzbek literary language", defended in 1987, for the first time presented scientific conclusions about its linguistic and stylistic features.

For the first time in Uzbek linguistics and methodology, I. Toshaliyev's manual provided information on the functions, types and uses of newspaper headlines, and analyzed the linguistic and methodological features of headlines.

A.Abdusaidov's researches analyze the peculiarities and problems of the press during the years of independence, the skills of some

journalists in the selection and coverage of topics, the coverage of topics in various fields in newspapers, the shortcomings in the use of language. It also outlines the criteria for studying the language skills of journalists, the use of the heritage of writers and philologists in the education of young journalists, and provides some recommendations.

D. Nematova notes that the journalistic style appeared in the system of speech styles of the Uzbek literary language, mainly in the late XIX and early XX centuries.

A. Mamajonov found that the frequency of simple sentences in journalistic texts is higher than that of compound sentences. In her work "Interpretation of conjunctions in the journalistic works of the independence period" J. Djumabaeva noted that in this style the typical types of conjunctions with equal and subordinate clauses are often used. emphasis has been placed on the sequence of events, summarizing, emphasizing, urging, commenting, persistence, reminding, and so on.

M.Rakhmonov, G.Karimov, L.M.Emelyantseva, K.Yusupov, their scientific works are devoted to the study of the Uzbek press language, the works of K.Bekbergenov, B.Yusupova, T.Masharipova studied the style of Karakalpak newspaper materials. The research also examines the content and form of journalistic genres and provides information about their language and style.

The study and development of essays from the literary and journalistic genres showed that the essay genre was revived in the 80s and 90s with the emergence of modern journalism. Publicity and freedom of opinion allowed for the open discussion of any topic in society and the free expression of their views. Today, the openness and responsiveness of the essay genre has increased the need and interest in the genre. With the development of journalism, it became more popular than other genres.

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## PRODUCTIVE SPENDING OF THE CHILD'S TIME

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### ABSTRACT:

**Harmoniously developed children's school of out-of-school education enriches the imagination of our children to think freely, choose the right profession, and develop fine motor skills.**

**KEYWORDS: proper organization of children's leisure time, use of STEAM program, proper orientation of gifted children.**

### INTRODUCTION

Child- family joy, the base of society. The fact that the child is healthy, educated and strong-willed is not only a parent, but also one of the noble goals of the policy of our state. Therefore, from the early days of independence in our country, high attention and care are being paid to the younger generation.

Young people of our country are working with enthusiasm in various spheres of our life today. They are today students and readers, workers and doctors, educators and engineers and entrepreneurs. Our young people perfectly master computers, internet techniques, several foreign languages, study in developed countries and enter the world arena.

From the first days of our independence, radical reform of the educational system, decent upbringing of a harmonious generation was defined as one of the priority tasks. And this, in its place, has a positive effect on the quality of Education. After all, the fact that the younger generation is brought up on the basis of the ideas of independence, the worthy maturation of our great ancestors depends, first of all, on the lessons that the teacher gives, on his research and aspiration. It is not

surprising that enthusiastic, knowledgeable, highly intelligent specialists make a huge contribution to the development of the industry.

As a result of the introduction of the system of continuous education in our country, it became a common goal to educate an independent – minded, self-sufficient person capable of fully manifesting his mind, thinking and potential, responsible, having a broad outlook, free and free-thinking person.

Priority attention is paid to the creation of the necessary conditions for the emergence of intellectual potential, inner strength and talent in each child. This will serve as a solid foundation for our children to be raised physically, mentally and spiritually from the age of infancy to adulthood, based on a clearly targeted program. The main subject of methodological provision in extracurricular educational institutions is pedagogical activity, which must attach great importance to the pedagogical system in the educational and educational process. Growing on the path of building a legal democratic society, Uzbekistan attaches great importance to the fact that from the first years of its independence it has grown to become a mature generation, capable of educating young people, becoming educated and meeting the requirements of the standards of world education in the future, being able to compete with the youth of developed countries. Of course, such a great goal, lessons taken to secondary schools in the implementation of tasks, practical work are of great importance. Because the occurrence of any aspirations, dreams, intentions and aspirations of children most of all go to the formation of this classroom

activity. The state system and social system, which includes the networks of extracurricular educational institutions, the mass media, the social movement of the organization of work with children in their places of residence, are of great help to the school.

In Uzbekistan, serious attention was paid to the development of the system of extracurricular education. In accordance with Article 17 of the law "on education" of the Republic of Uzbekistan, it was noted that it is desirable "to organize extracurricular educational institutions in the fields of mine-aesthetic, scientific technical, sports and other spheres" for the purpose of satisfying the individual needs of children and adolescents, organizing their free time and leisure activities, as well as other legal and physical persons.

Extracurricular education on the basis of additional educational programs is a pedagogical process aimed at satisfying the existing needs of students, organizing their leisure time and leisure activities, it was organized palaces of creativity of children (adolescents), homes, sports schools of children and adolescents, art schools, music schools, health centers. The relevance of extracurricular activities today is that, in the first place will prevent unemployment, that is, in addition to the school textbook, it is also at home to engage in any training and if our young people, who are currently limited to school textbooks, are attracted to training according to their interests, then the interest of students in the choice of a profession in the future will increase and they grow as mature specialists of the chosen profession.

At the same time, there are opportunities for students and young people to voluntarily study in extracurricular educational institutions and actively participate in circles of their interest in the areas of artistic and

technical creativity, tourism, local development, sports.

Abu Rayhon Beruni, a famous scholar of the East, said: "Our goal is not to make the reader tired. It will always be boring to read something and will make endure. If the reader passes from one issue to another, it will be as if he is traveling in different garden rinks, as soon as he passes through one garden, another garden will begin. A person will come to see and watch them all. Every new thing brings pleasure". Therefore, in our homeland, a perfect human upbringing, which in all respects brings the younger generation to the level of a perfect person, is a complex work, which has risen to the level of state policy.

It is known that students will have 5-6 hours of free time every day except for school. In such free time it is desirable to organize with young people all kinds of educational work, both from class and out-of-school. Classroom and extracurricular activities in general are of paramount importance in the proper and efficient use of students' free time. Extracurricular institutions have always complemented the educational process of secondary schools in the organizational, methodical activities of their education.

The number of educational work carried out in extracurricular educational institutions- this is not to ignore the attention paid to the education of schoolchildren in their spare time, interesting and their ability to spend their free time of youth without making them meaningful, boring, to lead in the direction of the progress of the spiritual world and to raise their activity, initiative to new levels, practical application of theoretical knowledge gained in schools, to test himself in practice in any field of his choice by even more intensifying his enthusiasm for science and technology, it is an expression from the complex of such works as raising creative abilities, making healthy and

full-fledged people of our independent homeland. Extracurricular educational institutions create the first conditions for students' interest in the choice of profession to test their theoretical knowledge gained in schools practically, in connection with the production process, the formation of their qualifications.

At present, on the basis of the latest achievements of science and culture, the search for effective types and methods of preparing the younger generation for life, which is the foundation of our future, is the most important task. In this regard, increasing the effectiveness of extracurricular educational work depends primarily on our search for modern and convenient directions of formation of a harmonious person and its application in practice.

According to Abu Rayhon Beruni, the great scientist of the East: "The time ladder is endless, generations that take the place of one another rise up from the stairs to the stairs, no more. The accumulated experience is delivered by each generation to the next generation, which comes after it, develops and enriches it after itself".

We often realize late that our child is talented, talented, without parents knowing it ourselves. How will it be correct for them to grow up as a harmonious person? Most parents say that the younger the children, the younger still go to the pre-school institution, or if the school passes from the primary class to the upper class and then participates in any circle, then you have created laziness disease to your child, without knowing it yourself. Our great ancestors expressed valuable thoughts about the need to learn about labor and craft. For example, Abdurahman Jami said so: "Do not find gold, learn craft, cross in front of craft gold-dice". And also the great thinker Alisher

Navoi said: "Do not waste your life, work, know the key to happiness."

Bring your child to the mounds and make it possible for them to grow up as a harmonious person. What is actually the hog itself?, why do you need it? Additional training- this is an exercise that is aimed at meaningful spending the free time of each child, this is the first step in the process to choose the training of the big interested in the child himself. Of course, the child feels free, learns to do any work as a team until the end, is spiritually and heartily delighted with the work he or she has done. At present, parents or adolescents themselves attend language courses. Proper language would be an excellent light upon light if the language is learned well and at the same time the craft is also learned. In us there are children's schools of a harmonious generation for artistry. There are training sessions in different directions, in which our sons and daughters from 6 to 18 years old are trained in different directions and show their talents and abilities. If your children are attending classes, where are they after their school? With whom? You will be far from the various unpleasant fantasies.

Children who have participated in additional classes enjoy the work they have created, are searched for the desired result, work, read books to become a master of the skill of the work they are studying without knowing it, even if they are not interested in reading books. It will display the closed edges in the direction they choose.

For elementary school students, the circle forms the students' fine motor skills. If he participates in such circles, then in the upper class he chooses for himself the necessary circle, and in this the labor productivity is higher.

Any circle work is not included in the compulsory school curriculum. It is carried out

by teachers in order to improve the knowledge of children in terms of directions. Participation in the circle will create a basis for choosing the right profession in the future.

Regardless of its direction, the circle receives joy from the collective work of the children, directing them to a specific goal, nurturing love for labor, and thereby developing the ability. It is also a useful lesson for schoolchildren who do not know the time, price of the circle – passing. Children who participate in gangs are not capable of crime, and they are workers.

The president of our country Mirziyoyev Shavkat Miromonovich adopted a decision on the establishment of children's schools of a harmonious generation. According to the resolution, in 2020-2023, “children's tourist bases” for 100-200 seats will be established in the presence of children's schools of “harmonious generation” in Bukhara, Kashkadarya, Namangan, Samarkand, Khorezm regions and Tashkent City. From the 2020/2021 school year in children's schools” harmonious generation “STEAM-education” program will be introduced.

### **BEGINNER TECHNICAL MODELING-WHAT IS IT?**

In the initial technical modeling circle, boys and girls are accepted from the age of 6 years, in which children learn to draw, shave, glue. During the circle training, the maturation of the hands develops new ideas are formed and the circle of thinking grows. In the first academic year of the circle, children are made up of different things constructors through ready-made Lego's, different things from colored paper, cardboard fruits on the basis of pictures from pieces of colored paper, animals are made through pieces of colored paper, which are ground and scraped, drawing drawings of different sizes. If one learns to draw geometric figures and make clippings,

then in the second school year they learn to make models of different things based on the geometric shapes made. They invent different things, for example , using triangles, rectangles, prisms, cones, pyramids, slindr and other shapes from the geometrical shapes that are laid out. The center for children of the adolescent generation is now a school of children of the adolescent generation, which began its activity on the basis of the STEAM-education program. In the STEAM — education program, lessons in the field of Natural Sciences (Science), Technology , technical creativity (Engineering), art , mathematics are taught in English. Technical creativity in the program” STEAM-education ” is the first stage of this after the initial round of technical modeling, they can continue the round in the areas of robotics, automodel, aviomodel, shipbuilding, computer graphics and design architecture.

Simply on the ground of the initial technical modeling circle, many inventions come into being. Children in the elementary class, that is, from the 1 class they themselves can do technology lessons well. Later interest in the same sciences will increase as Labor, fine arts, mathematics, geometry, drawing, Physics, Chemical sciences will become a link.

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## EDUCATING SCHOOLGIRLS IN THE SPIRIT OF THE OLYMPICS

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### ABSTRACT:

**The article is about proration of Olympiad ideas among sportswomen in order to get healthy and prepare the Olympic champions.**

**KEY WORDS: ancient, Sogd, Massaget women, sport, girl pupils, healthy in physical culture, order, resolution, organizational work, exercise ancestors.**

### INTRODUCTION:

Today, the training of Olympians requires a deep scientific and methodological approach. At different times, women have different attitudes to physical education. The differences in attitudes were primarily due to the laws in society, religious views, and the idea that women were the weaker sex. In the East, as well as in our regions, in the Middle Ages, there was a lot of resistance to women exercising.

In ancient times, in the Sogdian, Massaget, and other tribes, which were our ancestors, women practiced on an equal footing with men. In the civil wars, his weight was borne by women on an equal footing with men, and according to historical records, "My dear history" was written by G.A. Hidoyatov's book emphasizes that the women of the Sogdian and Massaget tribes were skilled horsemen, snipers, swordsmen and wrestlers. In the modern Olympics, women were first allowed to participate in archery exercises from 1904. At the 1908 London Olympics, they competed in

figure skating and tennis, swimming from 1912, and gymnastics and athletics from 1928. allowed. In every Olympic Games, women's sports results have grown. Thanks to the independence of our republic, there is ample opportunity for schoolgirls to engage in physical culture and sports, however, it is no secret that the participation of Uzbek girls in the Olympics is still low. This now requires certain organizational work among the student girls. It can be said that now this work has begun and they are continuing with rapid photos.

For example, the Decree of the First President of the Republic of Uzbekistan IA Karimov No. PF 3154 "On the establishment of the Fund for the Development of Children's Sports in Uzbekistan" dated October 24, 2002, the Decree of the President Sh.M. Mirziyoyev dated June 3, 2017 No. PP 3031 Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated January 29, 2019 No 65 "On measures to radically improve the system of public administration in the field of physical culture and sports" PF 5368 dated March 5, 2018 "On measures to further develop sports" and the resolution "About acceptance of special tests and competitions" Alpomish "and" Barchinoy ", determining the level of health", 2019

An example is the decision of February 13, No. 118 "On approval of the Concept of development of physical culture and mass

sports" in the Republic of Uzbekistan for 2019-2023.

In order to implement Olympic ideas among schoolgirls, to educate them in the spirit of Olympic ideas, special attention should be paid to physical education classes and extracurricular activities in schools. Nowadays, it is not correct to assume that all physical education and sports activities are tied to the economic level. It can be said that the lack of professionalism and initiative in professionals exacerbates the shortcomings.

Qualities such as perseverance, aspiration, perseverance, endurance are much higher in schoolgirls than in boys. It is enough to start them on the initiative. Currently, many schoolgirls in the country are known for their sports achievements. For example, Shohida Ahmedova freestyle wrestling, Olima Kamilova, Mukhtasar Tokhirova shooting and others. In the implementation of Olympic ideas among schoolgirls, educating them in the spirit of Olympic ideas, not only training Olympians, is also the health of the nation. In this regard, we make the following recommendations for educating schoolgirls in the spirit of their Olympic ideas.

1. Carrying out advocacy work with parents on the physical education of schoolgirls.
2. More reflection of Olympic ideas in the content of the school curriculum of physical education and other scientific and methodological manuals.
3. Publication of popular picture books for students, reflecting the Olympic champions and their sporting achievements.
4. Dedication of scientific research, physical education and sports of schoolgirls.
5. More coverage of best practices in preschool education, primary education, public education, "Bolajon" magazines.
6. Organization of training courses for women in physical education and sports, etc.

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## COMPETENCY APPROACH TO PHYSICAL EDUCATION LESSONS OF SECONDARY SCHOOLS

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### ABSTRACT:

**The article emphasizes the need for a competent approach to the subject of physical education in secondary schools, while recognizing the requirements of today's times, its specifics. There is also a life skills program that needs to be developed in the student to implement this approach**

**KEY WORDS: physical education, competence, motor skills, education, cognitiveness.**

### INTRODUCTION:

It is known that the school is a dwelling that shapes skills by giving students knowledge in certain disciplines. The purpose of school education is determined by the set of knowledge and skills that the graduate must possess on the basis of the established program. Today, however, this approach is not enough. The society requires not only graduates who have mastered the established knowledge, but also students who are able to practically solve life and professional problems in the future. Today, when falling into any problematic situation, it is very important to be able to solve it positively, to prepare a graduate at a level that can justify his decision and choose a reasonable method. As a result of this need, the concept of compensation appeared.

The process of physical education of schoolchildren can serve as a real school of life, knowledge, communication, understanding and

self-expression. Based on the spiritual foundation of the individual, it is necessary to develop in children the desire for introspection, self-esteem and self-improvement.

Modernization of the educational system of Uzbekistan requires a radical change in physical education. At present, the activities of a physical education teacher are based on the following tasks:

- formation of a system of knowledge on physical education and vital motor skills;
- develop individual motor skills and increase the physical training of students;
- to educate the individual about the values of physical perfection;
- formation of the need for selected sports and physical exercises;
- education of moral and voluntary qualities;
- • develop interpersonal communication experience.

The competency approach in the field of physical education will help to carry out these and other functions of the modern lesson, which will help to formulate the vital competences of students. At present, there is no single opinion on how many and what compartments should be formed in the students.

<i>Of the main competences in the field of physical education manifestation</i>				
<b>Basic competences</b>	<b>The scope of compensation</b>	<b>Compensation activities</b>	<b>Social significance for the student</b>	<b>Personal significance for the student</b>
General cultural	Cultural and historical sphere	General activities; ability to have relevant historical experience	Knowledge of the cultural and historical foundations of physical culture, comprehensive physical and spiritual development, to know the role of physical culture in shaping the ability to lead a healthy lifestyle; health and high performance; training for labor and protection of the motherland	To determine the importance of systematic physical education for improving health, increasing physical training and preventing diseases; develop interest and habits in systematic physical education and sports
Educational and cognitive	science, art	ability to learn all my life, knowledge, skills	Knowledge of the basics of physical development and education to shape a spiritually rich and healthy person	Possession of the necessary knowledge for physical education and sports; knowledge of the basics of personal and public hygiene; knowledge of the rules for the regulation of physical activity in the morning exercise, regular exercise conditions
Communicativ	Field of	Oral and written	Having different	Ability to analyze

e	communication	communication skills	information; opportunity to discuss the development of sports and physical education; development of your position on these issues	and evaluate the activities of friends, classmates; ability to make recommendations for independent physical education classes based on modern sports and fitness technologies
Social	social relations (politics, labor, religion, nationality relations, ecology, health)	take responsibility for participating in shared decision making	Understanding the benefits of physical exercises for human health, increasing their working capacity and increasing their life expectancy, as well as the role that physical exercises play in the prevention of occupational diseases, in the fight against occupational injuries	The ability to use physical culture to prepare for professional activities; to have modern requirements for the scientific organization of labor and rest
Personal	social and cultural sphere	identify the main goals of life and the ways to achieve them. Active adaptation to the socio-cultural environment to achieve key life goals	Mastery of the technique of self-awareness; determination of personal and life itself	Ability to express oneself and self-development; ability to manage the physical state of the body

The formation of basic skills requires a certain program of action from the teacher:

<b>The activities of the physical education teacher in the formation of the basic competencies of students</b>		
<b>Objectives of physical education</b>	<b>Physical culture is the knowledge, skills and knowledge that provides individual health</b>	<b>Formed powers</b>
1. Take care of your own health, improve individual skills in physical education classes, prevent diseases	Physiotherapy complexes. First aid for injuries. To determine the individual characteristics of physical development and physical training. Understand the importance of a healthy lifestyle, avoid bad habits with the help of physical education.	Personal
2. Development of modern health care systems technologies in physical education	Complexes of Professional practical exercise. To relieve fatigue and improve performance, autogenous the simplest ways to exercise and relax. Know the physical indicators of a person, the positive impact of physical exercises on health and the factors that shape a healthy lifestyle.	Authority in social, health restoration activities
3. Enrich the motor experience with professional-practical exercises aimed at preparing for future life activities	General and practical physical education. Possession of methods of motor activity. Ability to perform test assignments, which determines the individual level of physical preparation.	Educational and cognitive abilities in motor activity, taking into account individual characteristics of physical development and medical indicators
4. Mastering the system of knowledge about physical education classes, their importance in the formation of a healthy lifestyle and social direction.	Personal health, knowledge of the features of physical development, the possibility of correcting them through physical exercises; the ability to organize individual forms of physical exercises; the ability to perform individual exercises, the acquired knowledge and skills in practical activities	General cultural, personal

In conclusion, the introduction of a competency-based approach to the physical education lessons of secondary school students will contribute to the formation of the following among the students:

- ability to work without a permanent leader, take responsibility on his own initiative;
- ability to initiate without requiring it from others;
- awareness of problems and willingness to seek solutions;
- ability to analyze new situations and apply existing knowledge;
- ability to find a language with others;
- willingness to acquire new knowledge on their own initiative (taking into account their own experience and opinions with others);
- the opportunity to learn something new from high-class athletes.

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## INTERPRETATION OF ANIMALISM IN UZBEK LITERATURE ON THE EXAMPLE OF THE WORK OF TAĞAY MURAD “HORSE WHINING EVENING” (OT KISHNAGAN OQSHOM)

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### ABSTRACT:

**This article is devoted to animalistic and its specific study. In the article, the work of Tağay Murad “Horse whining evening” (Ot kishnagan oqshom) is analyzed as a figurative interpretation, the writer's intention through the image of the animal in the story, the idea of the work and the characteristics of the character as an artistic image, the harmony of relations between man and animal is illuminated.**

**KEY WORDS: animalistic, artistic literature, metaphysics, animal images, external and internal world, artistic interpretation, imagination.**

### INTRODUCTION:

The genre of animalism, which is characterized by its artistic interpretation in world literature, is not a novelty for Uzbek literature either. In modern literature, this genre is studied as a separate scientific research direction. Animalism means a figurative representation of animal images in artistic works. This term, which was originally used in painting in relation to the image of an animal, later it began to be used even in artistic literature. Excellent examples of animalistic literature were created by such writers as Ernest Seton Thompson, Jack London, Mikhail Sholokhov and Genghis Aytmatov. Such works also existed in Uzbek literature from ancient times.

Indeed, in the “Avesto”, which was created three thousand years ago, animal images are also visible. In addition, we can see that the

image of animals bears a special meaning in the work of Nasiruddin Rabguzi “The story of Rabguzi” by the XIII century.

Initially, animals were introduced into the artistic literature in a figurative way with the aim of displaying some aspects of man, then the image of animals became a target, and not a means. Even in modern Uzbek literature, works of the animalistic genre began to see the face of the world. Tağay Murad turned the work of Ernest Seton Thompson “Wild ambler” (Yovvoyi yo’rg’a) into Uzbek and made a contribution to Uzbek readers. The translation leaves its imprint on the creativity of each of the creators, the impact of which, of course, can be positively assessed. In the story of Tağay Murad “Horse whining evening” (Ot kishnagan oqshom), horse's friendship with a man is manifested in artistic paints. The protagonist-Ziyodulla kal will spend his time in a lifetime with a horse named Tarlon. Tarlon is the nickname of a horse. The horses, which itself is white and after the age of nine, are spotted, put a name as Tarlon.

In general, each work of Tağay Murad is devoted to a specific topic, the author strongly studies the realities and the essence of this work before writing it to the chosen one. It is also in the “Horse whining evening” (Ot kishnagan oqshom): detailed information is given about the breeds of horses, what kind of feline they have. At the beginning of the work, the horse's friendship with a man is emphasized in several places: “...Buddies, car is iron! There is no soul! Iron without soul, to a person will not be friends! Although iron does

not have a heart! The horse becomes a friend to the man. Because the horse has a soul, although he has a heart! . During the reading of the work, it can be seen that there are two main heroes in the story : if one is a rider with a Ziyodulla, the other is a Tarlon. At this point in time, we can see the peculiarity of Animalism, that is, the image of animal is introduced into the work as the main goal, and not as a means of describing something. It should be noted separately that the horse is not depicted as a divine animal that descended from heaven in his work as Tağay Murad, but also indicates the need to educate any animal. The Ziyodullo rider first breeds the horse from the head. In particular, the following passage shows that the rider also needs great skill: "While being a four-legged creature horse... yes-yes, while the horse is going... what disposition finds, remains the same dispositio . What finds the deed, remains in the same act. What it sees, what it knows, what it learns, all-all remain in the body, remain in the brain. That's when the rider says that he will fix the horse, he will suffer. The horse can not be corrected! The friends, best horse, riders are mind-blowing building! The best of all is a horse rider heartbroken building!". The breeding of a horse does not consist only of stroking and plowing.

In the story, it is believed that the horse is also a biological creature, the reserve of food for its growth should be energetic illuminated: "I started feeding barley to the Tarlon. I gave four kilos of barley in azahn. I gave six kilograms of barley in a lunch. I gave five kilos of barley in the evening. I gave salt in my palm. Tarlon ate a lot of salt. I kept white sugar in my palm. Tarlon took the candy with his lips. Kars-Kars ate. Now I salted the tail of the slaughtered sheep-salted... Buddies, the horse is anesthetized, the mouth is hell!" . If the horse's super paradise is to enjoy riding it, then the mouth hell is in difficulty to feed its belly.

The sensitivity of horses in the story is also described in several pages. In general, the sensitivity of horses among the people is expressed in many stages. Turkmen poet Mahtumkuli also stood in the question-answer poem with the poet Turdi:" The horses that are not taught to catch will feel like a man", giving the idea. We observe that the same sensitivity is also taken into the pen several times in the "Horse whining evening" (Ot kishnagan oqshom):"There is not what the friends do not know about the horse! The horse knows the snow-rain, the dove in advance. Especially, the wedding and the mistress immediately knows". During the reading of the story, we will witness that the horse is depicted in more places than the rider, its desires, desires are revealed in an incredibly natural way. A lot of riders, of course, want to get a capricorn, but our Tarlon wants more than a rider though. Ziyodulla rider, who knows its desire, also understands his horse very well. In this place, one can say that the creation of a clear artistic interpretation of what it wants without letting the horse into the language is one of the great achievements of Tağay Murad. Tarlon for the first time very much wants to get goatling, but the goatling will fall out of the hands of the rider. But the Ziyodulla rider, who did not want his horse to die, shows himself as if he had taken a capricorn. This is also a way to find a language with a horse: "The Tarlon has reached the trough, beating in the compression of the horses. Capricorn stopped a wander. I toothed the whip from the stalk. I myself went to the trough. Now I would raise a horse, having pressed a hoof, the goatling fell out of my hand. The Tarlon was pushed by a gang of horses. The Tarlon stood and wandered away from the patchwork. Left aside. Tarlon do not be offended, do not let the soul fall, I went to the earth for a mile, and I came to Tarlon. I took out the fur collar!"

In the story, the character of some people is also revealed during the depiction of human and horse friendship. Especially, in the image of the cub, it can be seen that the horses performed the image of the leader, showing the bravery or rascal character of the wrestlers. Tarlon throws itself into a deep shadow, so as not to give the capricorn, and the stream will run away. But due to the fact that the rider dropped the capricorn, wrestler refused to give him money. In this situation, the bearded rider puts a heavy condition to the wrestler: "Look where Tarlon threw itself! The horse did not throw away from you, from fear of me, no , threw out of self-sacrifice to the man! So even though you roll dice from the horse's head, your fee will not go away! Give me your fee! If you give, you give, do not give, I will bring a sheep from my house to this field! Tell them, tell them". Here in such situations, we can also witness that the character of the heroes is revealed by means of animals.

In general, one of the main features of animalism is the delivery of the external and internal world of animals to the reader. Since Ziyodulla was a rider who understood the character of the horse, he also expressed to it that Tarlon was such a loyal friend. In the story, it is said that the horse is still a four-legged animal, accordingly, he was also given convincing feedback about the need to be treated: " I know, there is no mood in the Tarlon, I know! Friends, each horse will have its own character, mood. The days when the horse does not have a mood do not bend the neck to a person. On these days, a person does not return at all from the grinding of the bladder, although if it touches a lot of irritation, then the person will be gnawed from the shoulder, and the tooth will be gnawed! At such times, some riders hit the horse's head with a whip handle. As a result, the horse will run away, tearing his rider in the agony of the soul.

That's how the horse was decorated from a man. The horse returns from man! Draws to his ogres ancestor! He puts his ancestors, escapes depending on the fields. It is added to go horses. They see with their bears, they pamper with their paws. It takes the air of its ancestors!". From the above lines it can be seen that even a horse can not make any rider, for this it will be necessary to understand its language. Changes in social life, as in other works, do not show their impact on the fate of the heroes, even in the "Horse whining evening" (Ot kishnagan oqshom). In particular, over the policy of giving horses to meat, the Ziyodulla kal had suffers a lot. He can not even imagine what kind of meat he comes from the market, and Tarlon also turns out to be such a meat: "One hand was left in the meat, one hand in the knife. My eye remained in the Tarlon! You are the best! Hand over to meat? So the breed? So who is the good-natured? Is there any other creature that makes meat? Itself, how does the meat? Is that? I stared at the meat on the table. Those so though? Although Tarlon will be so? Although the solder is a collar, the bone is a collar? Next, the skull-race will be separate. They throw their hooves at the dog. Dogs eat hooves gnawing. They bury their tails by the mane. Mane rot under the soil. So mane? It is not mane, silk, silk!". It remains only to protect the rider from the transfer of his horse to meat. For this he uses the trick that he has in himself. This goodness that he did to the horse, of course, will not remain unanswered.

At the end of the work, Tarlon saves the owner from the inevitable death in the clutches of hooligans. These places of the work bring joy to the reader's soul. We go to the realization that the horse, the four-legged animal, is superior to the two-legged savages. Tarlon's scene of falling in love with horse Olakuz is also described as incredibly natural and touching. Tarlon, who fell in love, without even going into



the talk of the owner, goes to the Olakuz and, having reached his intention, finds his house at night. Of particular importance in the story is the characterization of the interaction of animals with the concept of human emotions: "Tarlon and Olmakuz kissed one another. It was piquant and piquant. And the Olmakuz ripened into his mouth, and the nose began to ripen. What it said to the Olmakuz, what it said. What it said, what it said—it knew its own, it knew its own, it knew its own Olmakuz... Tarlon was disappointed, Olmakuz was disappointed!" .

During the reading of the story "Horse whining evening" (Ot kishnagan oqshom), the attributes of the horse such as loyalty, loyalty are revealed. As we reach the end of the story, it becomes clear why it is so named: Tarlon, who sees his owner being chased by unknown people, whispers of anger: " It looked at the fields and stared at them. Tarlon's ears gnawed. And it looked at the village, and it looked down. Tarlon shrugged its razor. Then, it looked at me. It spread its legs big. It stretched its neck. It stretched its snouts. It did not pinch its ears". On this night, the horse Tarlon shows its solidarity to the rider Ziyodulla, preserving his life: "I felt Tarlan's breath. I embraced the tumult and embraced it. I wiped its forehead. Then my palm became a mound. I thought sweat, horse skin. I brought my palm to my eyes and looked. Then, I looked at the Tarlon with a stitch.. Tarlon leaked blood from his forehead... I cried. I said press my lungs, I could not press..." . As Tarlon rode the owner on his own and went to his house in search of salvation from all over the world, it will be as if the main idea of the story, which the rider passed through the soul of Ziyodulla, who found this comfort only from his horse, was reflected in himself: "Tarlon, you are my friend, my friend. Was, I do not say them my friend

anymore. My friend is you, Tarlon... Tarlon, you are my friend of doom, my friend of doom..." .

In the place of the summary, it should be noted that the direction of animalistic has existed in Uzbek literature since ancient times and has its place in modern literature. The main feature of the direction of animalism is explained by the fact that in this artistic story animals are depicted not as a means, but as a goal. Through it, the fact that nature and man are an integral whole is reflected in the works of art.

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**THE EFFECT OF VARIOUS HEPATOPROTECTORS ON PATHOLOGICAL SYNDROMES IN CHRONIC LIVER DISEASES AND DETERMINATION OF THE SPECIFIC GRAVITY OF DRUG GROUPS**

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**ABSTRACT:**

**Chronic hepatitis, cirrhosis of the liver and their consequences remain a global medical and social problem in the world. In the clinical practice of previous years, a variety of drugs were used as means of pathogenetic therapy, many of which turned out to be ineffective and went out of use. At the same time, widely known data on the ability of liver tissue to regenerate allow a rather high assessment of the prospects and potential possibilities of pathogenetic therapy of chronic hepatitis and cirrhosis using hepatoprotectors [1.2.5].**

**Drug therapy for patients with liver pathology should always be as economical as possible. In each case, it is necessary to compare the degree of necessity of prescribing the drug and the potential danger of its side effects. In the treatment of patients with liver diseases, polypharmacy is extremely undesirable, and the prescribed doses, as a rule, should not exceed the average therapeutic and course [9.10.12].**

**KEY WORDS: chronic hepatitis, cirrhosis, hepatoprotector, cholestasis, cytolytic syndrome.**

**RELEVANCE OF THE PROBLEM:**

Despite the improvement of preventive, therapeutic and diagnostic methods, liver diseases continue to be a frequent cause of complications and deaths. In recent years, a number of international and national recommendations have been published aimed at optimizing the pharmacotherapy of liver diseases. However, in practice there are significant differences between the pharmacotherapy of liver diseases practiced in real clinical conditions and existing standards. This dictates the need for pharmacoepidemiological studies aimed at obtaining data on the real practice of using drugs for liver diseases, and especially by doctors from rural medical centers, which patients usually turn to.

Drug therapy for patients with liver pathology should always be as economical as possible. In each case, it is necessary to compare the degree of necessity of prescribing the drug and the potential danger of its side effects. In the treatment of patients with liver diseases, polypharmacy is extremely undesirable, and the prescribed doses, as a rule, should not exceed the average therapeutic and course

Management of patients with chronic liver diseases (CHLD) requires significant material costs - this is not only payment for treatment, but also indirect costs associated with temporary and permanent disability of the patient. This fact necessitates the use by doctors of modern and effective methods for the diagnosis of prevention and ChLD.

Today, not one new treatment for CHLD can be adopted unless it has been proven to have a positive effect on patient survival. This method of evaluating the effectiveness and safety of the drugs used and the method of treatment is called "evidence-based medicine. A number of requirements are presented to the pharmacotherapy of ChLD: it must be based on the results of evidence-based medicine, be combined, carried out in small doses of drugs and lead to an improvement in the quality of life of the patient.

Based on the foregoing, pharmaco-epidemiological studies play an important role in understanding the problems associated with the introduction of patients with CHLD. The lack of independent epidemiological studies of CHLD in Uzbekistan does not allow us to fully talk about the detailed characteristics of patients with CHLD, the methods of diagnosis used, the nature and results of their treatment. In the analysis of the work carried out in the regions of the Republic of Uzbekistan, a number of problems were identified related to the introduction of CHLD: insufficient diagnosis of this disease, different approaches to their treatment of the disease, different doses and frequency of use of drugs, lack of sufficient control over the dynamics of treatment, polyprogramming, non-identification and lack of correction of risk factors and associated pathologies. The above does not allow us to draw final conclusions about the situation with the introduction of patients with CHLD in the regions of the republic and especially in the Bukhara and Navoi regions.

The above stated testifies to the relevance of conducting focused research on the use of hepatotropic drugs in real medical practice, the results of which allow not only to assess the adequacy of the diagnosis and therapeutic measures performed in patients with CHLD, but also to make adjustments to the algorithm for administering patients with this pathology and to maintain the gap between everyday clinical practice and achievements of medical science. [1,2]

From the foregoing, it becomes apparent that chronic hepatitis C is a disease requiring a long and expensive treatment and therefore the study of pharmacoeconomics in these patients is very promising [3,4].

We previously studied the structure and frequency of drugs used for the treatment of chronic hepatitis C [5,6,7,8,9]. The results of these studies required research and the study of pharmacoeconomic aspects of the treatment of this disease.

The aim of this work was to study and analyze the costs of treatment of chronic hepatitis C in hospital.

#### **MATERIALS AND RESEARCH METHODS:**

A retrospective study was performed at the Bukhara Regional Multidisciplinary Medical Center, a department of gastroenterologists in the period from 2015-2019 with CHLD diseases. Bukhara region analyzed 5000 case histories (CHLD) of which 1167 (ChH) were subjected to in-depth study.

The subject of the study was the drugs used to treat this disease. The cost of acquiring the used medicines was calculated taking into account the average market value of the drug corresponding to the hospitalization of the patient period and the average length of hospital stay. The obtained results were processed by the method of variation statistics..

In connection with the above, we separately studied the structure and costs of

individual drugs of first-line drug groups for the treatment of chronic hepatitis C. First of all,

hepatoprotective drugs were analyzed. The results of this analysis are presented in table 1

**Table 1: Costs of hepatoprotectors used to treat chronic hepatitis C**

No.	Types of Medicines	unit of measurement	Price	Destination quantity	Amount	Percentage ratio
1.	Essential 5 ml (№5 in a box)	№5 in a box	26626	236	6288522	26%
2.	Carsil tab. (№80 in a box)	№80 in a box	24590	226	5562918	23%
3.	Ursosan cap. (№50 in a box)	№50 in a box	62500	88	5538731	22.9%
4.	Hepa-mertz 10мл (№10 in a box)	№10 in a box	105000	40	4208468	17.4%
5.	Heptral-400мг (№5 in a box)	№5 in a box	150000	10	1523755	6.3%
6.	Liv-52 (№100 in a box)	№100 in a box	6200	78	483732	2%
7.	Apcosul (№100 in a box)	№100 in a box	4658	62	290239	1.2%
8.	Seripar 5мл (№1 in a box)	№1 in a box	9316	31	290239	1.2%

As can be seen from the data presented, 8 representatives of hepatoprotectors were mainly used for the treatment of chronic hepatitis C. At the same time, the essential drug was Essentiale, Karsil, Ursosan, the “gold standard” in the treatment of the pathology under study. Which accounted for 72.0% of the funds for the purchase of hepatoprotectors. Apcosul and seripar turned out to be less expensive, which amounted to 1.2% of the spent

The cost of hepatoprotectors used to treat chronic hepatitis C (in 24186604 thousand soums) funds. At the same time, only 28% of the funds for the purchase of hepatoprotectors were spent on the rest of the drugs (hepomerts, heptral, liv-52, apcosul.) Therefore, from the group of hepatoprotectors, the most expensive is the essence, for which 4/1 of the funds were spent. At the same time, it is required to find out if the costs of this group of drugs are consistent with the needs of hospitalized patients. If we take into account

that, as a rule, for the treatment of one patient with chronic hepatitis C, ursosan capsules are prescribed in doses from 10 mg to 18 mg [14], depending on the severity of the pathological process, then in our case 16800 capsules (250 mg each) of ursosan were needed. To purchase this amount of the drug was required 22154924sum. However, according to our analysis, over the course of the year, 4400 capsules (250 mg each) of ursosan in the amount of 5538731 thousand soums were used, which is only 22.9% of the required cost for this drug. Apparently, these results are not due to the low availability of patients with this drug, but rather the presence of contraindications for use, the risk of complications, as well as with comorbid conditions. It should be noted that the essence was used in injection form, the cost of which amounted to 628852sum. This fact also affects the provision of patients with this drug. However, even when summarizing the costs of the injectable and encapsulated form of the essence, despite the increase in purchase costs,

the minimum proper need of patients for this drug is not covered. According to our data, patients with chronic hepatitis C also received hepatamerz, heptral, liv-52, apkasul, the costs of which accounted for ¼ of the cost of hepatoprotectors. Given that the vast majority of patients with chronic hepatitis C had a severity of the course of the disease, it becomes clear the need for the combined use of two or more hepatoprotectors.[14].

In the structure of hepatoprotectors for oral administration, 4 drugs turned out to be costly: karsil, ursosan, hepamerts, liv-52 and apkosul (Fig. 6). Karsil and ursosan accounted for 55.9% of the cost of purchasing hepatoprotectors for oral administration. Moreover, among these two drugs were the costs of which amounted to almost half the costs of these 4 drugs. Therefore, in the structure of treatment of patients with chronic hepatitis C from hepatoprotectors for ingestion, more funds were spent on the purchase of drugs with selective action on liver cells and on hepatoprotectors with less pronounced side effects.

Table 2. Costs of hepatoprotectors, used (per os) for the treatment of chronic hepatitis C (11875620 in thousand soums.

№	Types of Medicines	unit of measurement	Price	Destination quantity	Amount	Percentage ratio
1	Carsil tab. (№80 in a box)	№80 in a box	24590	226	5562918	23%
2	Ursosan cap. (№50 in a box)	№50 in a box	62500	88	5538731	22.9%
3	Liv-52 (№100 in a box)	№100 in a box	6200	78	483732	2%
4	Apkosul (№100 in a box)	№100 in a box	4658	62	290239	1.2%

The total number of hepatoprotectors used in patients with chronic hepatitis C during the year, regardless of their route of administration, is 1785 injectable form, 454

box of tablet form. Taking into account the probability of a combination of enteric and parenteral routes of administration of drugs and an increase in the frequency of their intake per day up to 3 times, we separately calculated the coverage of the needs of patients with chronic hepatitis for hepatoprotectors. At the same time, it was found that the number of hepatoprotectors we identified provides the need for 292 patients with chronic hepatitis C. Therefore, the cost of acquiring hepatoprotective, regardless of their dosage forms and trade names, theoretically allows you to fully ensure the need for the analyzed patients with chronic hepatitis C for drugs from the group of hepatoprotectors. However, it should be borne in mind that not all hepatoprotectors used are effective and safe for the body in our case, which requires preliminary differentiation of the hepatoprotectors used, taking into account both the peculiarities of the pathology and the organism of patients with chronic hepatitis C. Indeed, the importance of hepatoprotector in the treatment of chronic hepatitis C has significantly decreased in recent years due to the advent of new effective pathogenetic therapy regimens [15]. Hepatoprotectors in chronic hepatitis C are mainly used as pathogenetic therapy and their action is aimed at restoring liver function and reducing the severity of disease symptoms.

### CONCLUSIONS:

Among the hepatoprotectors prescribed for CHLD in 2015-2019, more than half were drugs containing essential phospholipids, which had a better effect on the clinical course of chronic hepatitis of non-viral etiology in the form of a decrease in the number of exacerbations and transition to liver cirrhosis.

Pharmacoeconomic analysis of drugs used to treat CHLD showed that in 2015-2019, the structure of the most expendable drugs

(group A) did not show enough for both etiotropic and pathogenetic therapy, minor infusion and metabolic drugs prevailed in it.

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## द्वि-वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति

विनिता कुमारी

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आर्यभट्ट ज्ञान विश्वविद्यालय पटना, से संबद्ध ।

### सार

शिक्षा एक महत्वपूर्ण और सर्वव्यापी विषय है । यह मानव की उपलब्धि है । शिक्षा का उद्देश्य समाज के उद्देश्य पर आधारित होता है । शिक्षा को औपचारिक या अनौपचारिक तरीके से प्रदान करने के लिए शिक्षक की आवश्यकता होती है तथा शिक्षक को शिक्षक बनने के लिए अध्यापक शिक्षा की आवश्यकता । प्रस्तुत शोध द्वि-वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति पर आधारित है । इस शोध का उद्देश्य लिंग, शिक्षण माध्यम, महाविद्यालय का स्वरूप, निवास-स्थान, शैक्षणिक योग्यता के आधार पर द्वि-वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति में सार्थक अंतर का अध्ययन करना है। इस शोध में सर्वेक्षण विधि का प्रयोग किया गया है । यादृच्छिक प्रतिचयन विधि के द्वारा 200 बी.एड. महाविद्यालय के शिक्षक-प्रशिक्षणार्थियों को चयनित किया गया । इस अध्ययन में स्वनिर्मित एवं वैधीकृत द्वि-वर्षीय बी. एड. पाठ्यचर्या के प्रति मनोवृत्ति मापनी का प्रयोग किया गया । आंकड़ों के विश्लेषण के लिए टी-अनुपात का प्रयोग किया गया । इस अध्ययन से निष्कर्ष प्राप्त हुआ कि द्वि-वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति औसतन अच्छी है । लिंग , शिक्षण माध्यम, निवास-स्थान, महाविद्यालय के स्वरूप तथा शैक्षणिक-योग्यता के आधार पर द्वि-वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति में सार्थक अंतर नहीं पाया गया ।

**मुख्य बिंदु :** द्वि-वर्षीय बी. एड. पाठ्यचर्या, मनोवृत्ति तथा अध्यापक शिक्षा ।

### परिचय

बी. एड. (बैचलर ऑफ़ एजुकेशन ) कोर्स एक पूर्व –सेवा कालीन प्रशिक्षण कोर्स है । यह मुख्य रूप से स्नातक पास

प्रशिक्षणार्थियों को दिया जाता है। बी. एड. प्रशिक्षण प्राप्त करने वाले प्रशिक्षणार्थियों को भी शिक्षण-अधिगम प्रक्रिया से होकर गुजरना पड़ता है, जिसमें पाठ्यचर्या महत्वपूर्ण भूमिका निभाता है।

बी. एड. कार्यक्रम NCTE के द्वारा नियंत्रित किया जाने वाला एक शैक्षणिक गतिविधि है। सर्वप्रथम यह कार्यक्रम हमारे देश में एक वर्ष की अवधि के रूप में चलाया जाता था, लेकिन NCTE ने 1998 में बी. एड. कोर्स को दो वर्ष का करने की बात कही। उसकी बात को ध्यान में रखते हुए NCERT ने अपने सारे क्षेत्रीय शिक्षा महाविद्यालय (RCE) में यह दो वर्ष कार्यक्रम कर दिया। लेकिन दो वर्षों का बी. एड. कोर्स NCTE Nov,28,2014 के भारत सरकार के राजपत्र (under government of India Gazette Notification) No- 346 (F.N. 51 -1 /2014/NCTE/N&S) के आधार पर किया गया है। 2014-15 वार्षिक सत्र तक बी. एड. कार्यक्रम एक वर्ष के रूप में चलाया जाता था। लेकिन भारत के सुप्रीम कोर्ट से सुझावित संगठन न्यायधीश वर्मा आयोग (JVS) 2014 के सुझाव पर शैक्षणिक जगत में लगभग 15 कार्यक्रमों के मानदंड एवं रूप में बदलाव किया गया। इसके अंतर्गत B.Ed, B.P.Ed, तथा M.Ed कोर्स को एक साल के बदले दो वर्ष करने की सलाह दी गई। इसके पीछे मुख्य उद्देश्य शिक्षा- जगत तथा शिक्षण से सम्बन्धित कौशल तथा गतिविधियों को सशक्त करना है।

अर्थात् बी. एड. कोर्स दो वर्ष के आधार पर पाठ्यचर्या का निर्माण किया गया जो वर्तमान परिस्थितियों एवं समाज की आवश्यकता को ध्यान में रखकर बनाया गया है।

### **अध्ययन की सार्थकता**

वर्तमान समय में शिक्षण कार्य से सम्बन्धी लोग की मानसिकता बदल गई है। अधिकांश लोग की अवधारणा है की शिक्षण कार्य बहुत सरल है, इसे कभी भी ग्रहण किया जा सकता है। यही कारण है की अधिकांश व्यक्ति अपना पेशा (करियर) पहले मनपसंद या अन्य क्षेत्र में बनाते हैं और वहाँ असफल होने के बाद वे अंत में शिक्षण कार्य में आपना पेशा (करियर) बनाना शुरू करते हैं, जिसके कारण उनके शैक्षणिक उपलब्धि पर प्रभाव पड़ता है। यह अध्ययन बी. एड. प्रशिक्षणार्थियों में द्वि-वर्षीय बी. एड. पाठ्यचर्या के प्रति मनोवृत्ति पर आधारित है। यह अध्ययन प्रशिक्षणार्थियों के पाठ्यचर्या के प्रति मनोवृत्ति का पता लगाकर उनकी समस्याओं को कम करने में सार्थक सिद्ध होगी। शिक्षा के माध्यम से मनोवृत्ति में परिवर्तन होता है तथा मनोवृत्ति के आधार पर व्यक्ति अपने शैक्षणिक उपलब्धि को हासिल करने में सफल होता है, इसके साथ ही इस शोध का ये भी प्रयास है की शिक्षक जो राष्ट्र विकास एवं सामाजिक परिवर्तन में मुख्य भूमिका निभाते हैं वे स्वयं द्वि वर्षीय बी. एड. पाठ्यचर्या के प्रति साकारात्मक मनोवृत्ति विकसित करें जिससे उनकी शैक्षिक उपलब्धि उत्तम हो।

### **सम्बन्धित साहित्य की समीक्षा**

गोराइन (2017) ने पश्चिम बंगाल में दो वर्षीय बी.एड का कार्यक्रम की ओर शिक्षक शिक्षकों के विचार पर अध्ययन किया और अध्ययन में यह भी पता चला कि पुरुष और महिला, ग्रामीण और शहरी शिक्षक शिक्षकों को दो वर्षीय



बी.एड. कार्यक्रम में काफी अंतर नहीं था। 82.5 % प्रशिक्षु दृढ़ता से दो-वर्षीय बी.एड. कार्यक्रम प्रति सहमत हैं। तथा 17.5 % प्रशिक्षु दृढ़ता से दो-वर्षीय बी.एड. कार्यक्रम प्रति असहमत हैं।

**सुधा (2017)** ने द्वि- वर्षीय बी.एड. पाठ्यचर्या के प्रति शिक्षक प्रशिक्षुओं तथा शिक्षको की मनोवृत्ति का अध्ययन किया जिसका उद्देश्य छात्र शिक्षकों और शिक्षक शिक्षकों के रवैये की पहचान करना है। अध्ययन से पाया कि मनोवृत्ति संबंधित व्यक्तियों के मानसिक झुकाव को निर्धारित करने में एक महत्वपूर्ण भूमिका निभाता है। दो साल के शिक्षक शिक्षा कार्यक्रम से संबंधित शिक्षण के क्षेत्र में शिक्षा अनुसंधान, दृष्टिकोण एक सांकेतिक और व्यापक आयाम का गठन करता है।

## शल्य परिभाषा

शोधार्थी में शोध में आने वाले विशिष्ट पदों का वर्णन निम्नलिखित तरीके से किया है :-

**बी. एड. पाठ्यचर्या:-** पाठ्यचर्या से अभिप्राय उस तकनीक एवं उपकरण से है जिसकी सहायत से शिक्षक-प्रशिक्षणार्थियों को प्रशिक्षित किया जाता है। यह कार्यक्रम 2014 तक एक वर्ष के रूप में चलाया जाता था। लेकिन भारत सरकार तथा राष्ट्रीय अध्यापक शिक्षा परिषद् (NCTE) नवम्बर 28, 2014 के सुझाव के अनुसार अब इस कार्यक्रम को दो वर्ष के रूप में चलाया जाता है। पाठ्यचर्या के अंतर्गत पेडागोजी ज्ञान, विषय वस्तु ज्ञान, तथा पाठ्य-सहायक गतिविधियाँ सम्मिलित होती है।

**बी. एड. पाठ्यचर्या के प्रति प्रशिक्षणार्थियों की मनोवृत्ति:-** मनोवृत्ति मुख्य रूप से मानव मन की उस दशा को कहते हैं। जब वह किसी वस्तु के प्रति किसी भी प्रकार की सकारात्मक या नकारात्मक सोच रखता है। यहाँ द्वि-वर्षीय शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति से अभिप्राय है उनकी सोच से है की वे द्वि-वर्षीय बी. एड. पाठ्यचर्या के प्रति किस प्रकार की सोच रखते हैं।

## शोध उद्देश्य

लिंग के आधार पर द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति में सार्थक अंतर का पता लगाना।

भाषायिक- मध्यम के आधार पर द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति में सार्थक अंतर का पता लगाना।

निवास- स्थान के आधार पर द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति में सार्थक अंतर को जाँचना।

संस्थान के प्रकार के आधार पर द्वि-वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति

में सार्थक अंतर का पता लगाना |

## शोध विधि

शोध समस्या के अनुरूप आकाड़ों के संकलन के लिए सर्वेक्षण विधि का प्रयोग किया गया है। आकाड़ों के संकलन के लिए पटना को लिया गया है। जिसमें 200 शिक्षक प्रशिक्षणार्थियों का चयन यादृच्छिक विधि से किया गया है। प्रस्तुत शोध में निम्नलिखित स्व-निर्मित तथा वैधिकृत उपकरणों को प्रयोग किया गया है-

## प्रदत्त संग्रह की प्रक्रिया

सर्वप्रथम शोधार्थी ने प्रतिदर्श के रूप में चयनित महाविद्यालय में जाकर शिक्षक प्रशिक्षणार्थियों को अनुसन्धान में लाये जाने वाले उपकरणों से परिचय कराया | पुनः शिक्षक-प्रशिक्षणार्थियों पर उपकरण को क्रियान्वित किया।

## अध्ययन के समष्टि एवं प्रतिदर्श

शोधार्थी ने प्रतिदर्श के रूप में दो सौ शिक्षक-प्रशिक्षणार्थियों का चयन किया, जो सरकारी मिशनरी तथा प्राईवेट शिक्षण संस्थानों से थे |

## उपकरण

स्वनिर्मित एवं वैधिकृत द्वि-वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति निर्धारण मापनी।

## संख्यांकीय तकनीक का प्रयोग

माध्य

प्रमाणित विचलन

टी-अनुपात

## अध्ययन की परिसीमाएँ

समिष्टि के रूप में पटना शहर के शिक्षा- बिभाग के बी. एड. प्रशिक्षणार्थियों को लिया गया है।

प्रतिदर्श के रूप में केवल 200 बी. एड. प्रशिक्षणार्थियों को लिया गया है।

## परिकल्पनाएं

शोधार्थी ने शोध के लिए विशिष्ट उद्देश्य के अधर पर निम्नलिखित परिकल्पनाओं को बनाया है-

लिंग के आधार पर द्वि-वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों के मध्य मनोवृत्ति में कोई

सार्थक अंतर नहीं है |

भाषायिक –माध्यम के आधार पर द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों के मध्य मनोवृत्ति में कोई सार्थक अंतर नहीं है |

निवास- स्थान के आधार पर द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों के मध्य मनोवृत्ति में कोई सार्थक अंतर नहीं है |

### परिकल्पनाओं का विभेदक विश्लेषण

**नल परिकल्पना 1-** लिंग के आधार पर द्वि -वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों के मध्य मनोवृत्ति में कोई सार्थक अंतर नहीं है |

#### तालिका -1

लिंग के आधार पर द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति

लिंग	माध्य(mean)	मानक विचलन (SD)	संख्या (N)	टी- मूल्य (t -value)	स्वतंत्रता का अंश (df)	सार्थकता स्तर At(5%)
महिला	160.58	24.37	144	1.09	0.27	सार्थक नहीं
पुरुष	165.41	29.45	56			

(5% सार्थकता स्तर पर 198 स्वतंत्रता अंश के लिए तालिका मूल्य 1.96 )

उपर्युक्त तालिका से स्पष्ट होता है कि लिंग के आधार पर द्वि- वर्षीय बी.एड. पाठ्यक्रम के प्रति शिक्षक प्रशिक्षणार्थियों के मध्य मनोवृत्ति में सार्थक अंतर नहीं है क्योंकि लिंग के आधार पर प्राप्त टी-मूल्य का मान 1.0 9 है जो 5 % सार्थकता स्तर के तालिका मान (1.96) सारणी मूल्य से कम है इसलिए नल परिकल्पना को स्वीकार किया जाता है |

**नल परिकल्पना - 2** भाषायिक –माध्यम के आधार पर द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों के मध्य मनोवृत्ति में कोई सार्थक अंतर नहीं है |

### तालिका -2

भाषायिक –माध्यम पर द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति

	माध्य	मानक विचलन	संख्या	टी	पी	टिप्पणी
हिन्दी माध्यम	163	27.73	108	0.25	0.56	सार्थक नहीं
अंग्रेजी माध्यम	160.8	23.68	92			

(5% सार्थकता स्तर पर 198 स्वतंत्रता अंश के लिए तालिका मूल्य 1.96 है )

उपर्युक्त तालिका से स्पष्ट होता है कि भाषायिक –माध्यम के आधार पर द्वि - वर्षीय बी.एड. पाठ्यक्रम प्रति शिक्षक प्रशिक्षणार्थियों के मध्य मनोवृत्ति में सार्थक अंतर नहीं है क्योंकि भाषायिक- माध्यम के आधार पर प्राप्त टी-मूल्य का मान 0.25 है जो 5 % सार्थकता स्तर के तालिका मान (1.96) सारणी मूल्य से कम है इसलिए नल परिकल्पना को स्वीकार किया जाता है |

**नल परिकल्पना 3-** निवास- स्थान के आधार पर द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों के मध्य मनोवृत्ति में कोई सार्थक अंतर नहीं है |

### तालिका -3

निवास- स्थान के आधार पर द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति

	माध्य	मानक विचलन	संख्या	टी	पी	टिप्पणी
ग्रामीण	162.82	26.71	58	0.35	0.76	सार्थक नहीं
शहरी	161.57	25.65	142			

(5% सार्थकता स्तर पर 198 स्वतंत्रता अंश के लिए तालिका मूल्य 1.96 है )

उपर्युक्त तालिका से स्पष्ट होता है कि निवास- स्थान के आधार पर भी वर्षीय बी.एड. पाठ्यक्रम प्रति शिक्षक प्रशिक्षणार्थियों के मध्य मनोवृत्ति में सार्थक अंतर नहीं है क्योंकि ग्रामीण तथा शहरी निवास- स्थान के आधार पर प्राप्त टी-मूल्य का मान 0.35 है जो 5 % सार्थकता स्तर के तालिका मान (1.96) सारणी मूल्य से कम है इसलिए नल परिकल्पना को स्वीकार किया जाता है |

### शोध अध्ययन के निष्कर्ष

प्रस्तुत अध्ययन में द्वि-वर्षीय बी.एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति का अध्ययन करने के पश्चात् शोधार्थी द्वारा निम्नलिखित निष्कर्ष प्राप्त हुए हैं :

लिंग के आधार पर द्वि -वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों के मध्य मनोवृत्ति में सार्थक अंतर नहीं है| अतः कहा जा सकता है की द्वि -वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों की मनोवृत्ति पर लिंग का कोई प्रभाव नहीं पड़ता है | इसका कारण यह हो सकता है कि महिला तथा पुरुष दोनों ही बी.एड.पाठ्यचर्या में एक जैसा रूचि रखते होंगे|

भाषायिक –माध्यम के आधार पर द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों के मध्य मनोवृत्ति में सार्थक अंतर नहीं है | अतः कहा जा सकता है कि शिक्षक-प्रशिक्षणार्थियों की भाषा चाहे हिन्दी हो या अंग्रेजी द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति मनोवृत्ति में अंतर उत्पन्न नहीं कर सकता |

निवास- स्थान के आधार पर द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति शिक्षक-प्रशिक्षणार्थियों के मध्य मनोवृत्ति में सार्थक अंतर नहीं है | अर्थात् ग्रामीण तथा शहरी शिक्षक-प्रशिक्षणार्थियों की द्वि- वर्षीय बी. एड. पाठ्यचर्या के प्रति मनोवृत्ति एक समान है | इसका कारण उनकी शिक्षण कार्य के प्रति जागरूकता तथा रूचि हो सकती है |

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## **DEVELOPING SCALES BASED ON MONTESSORI METHOD AS A LEARNING MEDIA OF MATHEMATICS FOR PRIMARY SCHOOL**

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### **ABSTRACT:**

This study aims to develop, analyze the feasibility and effectiveness of learning with scales media based on Montessori methods. The type of this study was Research and Development with ADDIE development model (Analysis, Design, Development, Implementation, Evaluation). The techniques of data collection employed observation, interview, test, questionnaire, and documents. The techniques of data analysis were product data analysis, test of learning accomplishment, t-test, and N gain test. The results of the study indicated that the feasibility test of the materials was 3.29 and the media was 3.76 in very feasible criteria. In the learning accomplishment test, the z count (2.04124) > z table (1.64) which indicated that the learning outcomes passed the learning accomplishment criteria more than 75%. T-test showed that t count (7.229) > t table (2.660) which indicated that the average learning outcomes in posttest were higher than the average learning

outcomes in pretest. The improvement was 0.754 with high criteria. The conclusion of this study is implementing scales based on Montessori methods is valid and feasible in decimal rounding learning. Moreover, mathematics learning is effective by using scales based on Montessori methods.

**KEYWORDS:** Learning media, mathematics, Montessori methods, scales

### **INTRODUCTION:**

Mathematics is always used in everyday life (Surya 2017:85-94), this demands students to understand concepts in mathematics. Failure to understand the concepts makes it difficult for students to understand the development of materials in higher grades (Pilomonu, 2014). Based on the study conducted by (Aris, Ilma, Putri, & Susanti, 2017), the use of media can help students understand the concepts being studied. In addition, based on the study by (Kaune, Nowinska, Paetau, & Griep, 2013),

games can also be used to develop the concept of materials that the students are learning.

However, in fact, mathematics is also not an exciting subject for students (Sujati, 2016) even most of the students find mathematics difficult. The students also get unsatisfactory learning results. This results in low student learning outcomes.

The fact about low mathematical abilities of Indonesian students is indicated from the results of PISA 2018 (OECD, 2018) that the average mathematics score was 379, below the average score of 489. In line with this, the researchers revealed that the mathematics scores of grade 4 students at Jatisari Public Elementary School, Semarang were the lowest compared to other subjects. The low learning outcomes of mathematics in grade 4 were caused by several factors both from the teachers and students. The teacher factor was the limited learning media, while the student factor was lack of enthusiasm, only smart students in mathematics who were eager to follow the learning.

On the other hand, learning arithmetic operation is quite important, as it exists in almost all topics of mathematics (Ahmad & Sivasubramaniam, 2010; Hendriana, Charitas, Prahmana, & Hidayat, 2019). This is because learning arithmetic operations on numbers means learning about numbers, symbols and notations (NCTM, 2000), and it plays an important role in student performance in other mathematical topics.

Failure to implant the concepts will make it difficult for students to understand the development of material in higher grades (Pilomonu, 2014). In fact, students still memorize what they get from the teacher, not understanding the concepts given by the teacher although mathematics is closely related to daily life. Many life problems require the ability to calculate, measure, and convey

information in mathematical language (Ully, Zulkardi, & Putri, 2010).

The level of mathematics knowledge and skills directly affects the quality of individual's life of our and our society (Mutlu, 2019). Besides mathematics is considered important, it is widely used in all aspects of life. For example, when we want to buy goods online with a weight of 0.69 kg, 1.27 kg, and 2.89 kg, the weight of the item purchased will be carried out to calculate the shipping costs. This is considered abstract for students if the students are not directly involved.

Involving students directly is useful to enhance students' understanding of the concepts. Direct involvement of the students is needed in mathematics learning. Mathematics is the study of patterns and relations of analytical thinking to solve the abstract and practical problems (NCTM, 2000). Development of education demands student-centered learning, where students are active and free to learn the materials, while the teacher acts as a facilitator (Amir, Mufarikhah, Wahyuni, Nasrun, & Rudyanto, 2019). Mathematics learning is more into participating instead of like watching a match. Directly involving students requires interactive learning media.

Based on the aforementioned background, the researchers limit the development of scales based on Montessori methods to the media of mathematics learning for grade 4 students at Jatisari Public Elementary School, Semarang. Learning media is anything that can convey messages from a source to create a conducive learning environment so that efficient and effective learning can be achieved. Montessori method is a method invented by Maria Montessori that emphasizes the concept of student-centered learning and learning while playing for children (Montessori & Gutek, 2004).

In general, this study aims to describe the development of the scales design, test the



feasibility of the scales, and test the effectiveness of learning using the scales based on the Montessori Method.

#### METHODS:

They type of this study was Research and Development with ADDIE model. The steps in ADDIE model included Analysis, Design, Development, Implementation, Evaluation (Aldoobie, 2015).

The research subject was 40 students in grade 4A of Public Elementary School Jatisari. The product trial of scales media based on Montessori methods was conducted to 8 students, and the other 32 students were involved in the trial of using this product.

In this study, the independent variable was the development of scales based on Montessori methods, while the dependent variable was mathematics learning outcomes of grade 4A students at Jatisari Public Elementary School. The techniques of data collection employed observation, interview, test, questionnaire, and documents. The techniques of data analysis were product data analysis, test of learning accomplishment, t-test, and N gain test.

#### RESULTS:

The results of the research and development of scales based on Montessori method evaluated several things including: (1) the development of scales based on Montessori method; (2) the feasibility of scales based on the Montessori method; and (3) the effectiveness of mathematics learning using scales based on the Montessori method.

### 3.1 Developing Scales based on Montessori Method

Scales based on the Montessori method were adapted from number scales. The scales were used as learning media for estimating decimal fractions. The scales were developed

based on the student needs analysis, teacher needs analysis, and Montessori methods. Montessori is a learning method proposed by Maria Montessori who believed that students must be the center of learning (Shivakumara, J, & O, 2016). Following are the development results of scales based on the Montessori method.



Figure 1 Scales



Figure 2 Puzzle Cover Display

The product of this development was the media consisting of scales and puzzles. The scales were developed from number scales. Number scales are mathematical teaching aids consisting of Cuisenaire rods as scale hands, weight, poles, and legs (Puspita, Usada, Istiyati, & Kamsiyati, 2016). Based on the study by (Fadillah, Susiaty, & Ardiawan, 2017), number scales were used to teach the concepts of addition, subtraction, multiplication, and division operations on round numbers. There are many reasons why puzzles are used in informal and formal education (Maric, Haan, Hogendoorn, Wolters, & Huizenga, 2014). There are many reasons why puzzles are used in informal and formal education (Moursund, 2007). Puzzle is used by arranging pieces of the

picture into a unified whole. The developed puzzles consisted of 2 sides, if all answers are correct, the puzzle will create a complete butterfly picture.

### 3.2 The Feasibility of Scales based on Montessori Method:

The scales media based on Montessori method were evaluated for its feasibility by material and media experts. The results of the material expert's evaluation of the scales media based on Montessori method by Dr. Nuriana Rachmani Dewi, S.Pd., M.Pd, obtained a mean score of 3.29 in the "very good" criteria. Meanwhile, the results of the media expert's evaluation conducted by Heri Triluqman BS, S.Pd, M.Kom, obtained a mean score of 3.76 in the "very good" criteria.

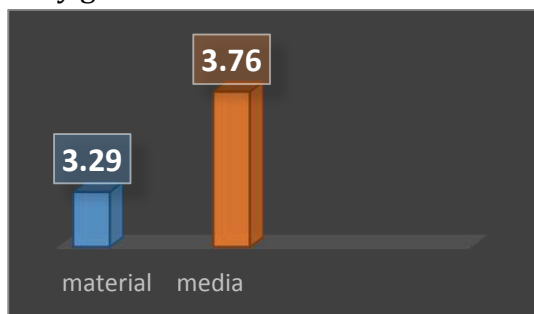


Figure 3 Diagram of material and media experts' evaluation

The conformity of material in Scales based on the Montessori method media with basic competencies and curriculum is very good. While material conformity with the indicator of learning and learning needs, clarity and sequence of material presentation in the media is assessed well. The material expert provided suggestions for improving the answer key in the questions. Moreover, the media expert suggested several improvements, including: (1) making a container (2) increasing the puzzle size (3) changing the shape of the scales load (4) changing the puzzle picture.

### 3.3 The Effectiveness of Mathematics Learning using Scales based on Montessori Methods:

The effectiveness of mathematics learning using scales based on the Montessori method was obtained from cognitive learning outcomes through formative tests in the form of pretest and posttest. Effective in Kamus Besar Bahasa Indonesia (Indonesian Dictionary) means there is an effect, there is an implication. The effectiveness of learning using the media can be seen from student learning outcomes through product trials and usage. The product trial was conducted to 8 students in grade 4 of Jatisari Public Elementary School, and the usage trial was carried out to 32 students in grade 4 of Jatisari Public Elementary School. The activities accomplished by the students in the product usage were the same as those in product trials in small groups. To investigate the effectiveness of learning, the researcher conducted learning accomplishment test, t-test, and N gain test.

#### 3.3.1 Learning Accomplishment Test:

Learning accomplishment test was used to test whether the test results using the scales media based on Montessori method can achieve learning accomplishment. Below are the hypotheses tested.

Ho :  $\pi \leq 0.75$  (the percentage of classical learning accomplishment of the students is less than or equal to than 75%)

Ha :  $\pi > 0.75$  (the percentage of classical learning accomplishment of the students is more than 75%)

Table 1 Results of learning accomplishment test in product trial and usage

Class	Z <sub>count</sub>	Z <sub>table</sub>	Criteria
<b>Product Trial</b>	1.85058	1.64	Ha is accepted
<b>Usage</b>	2.04124	1.64	Ha is accepted

It indicated that 75% students passed the learning accomplishment with the score above the minimum accomplishment criteria.

### 3.3.2 T-Test:

T-test was used to investigate the difference in the students' average scores in pretest and posttest. Below are the tested hypothesis.

Ho :  $\mu_{\text{post}} \leq \mu_{\text{pre}}$  (the average posttest score is less than or equal to the average pretest scores)

Ha :  $\mu_{\text{post}} \geq \mu_{\text{pre}}$  (the average posttest score is more than the average pretest scores)

Table 2 T-Test results of product trial and usage

Class	Average Pretest Score	Average Posttest Score	N	t <sub>count</sub>	t <sub>table</sub>
Product Trial	3.646	8.96	8	13.129	2.977
Usage	3.751	8.464	32	7.229	2.660

From the comparison of t count to t table, it can be concluded that both at the product trials and usage, the average score of learning outcomes is higher after learning using the Scales media based on the Montessori Method.

### 3.3.3 N gain Test:

N-gain test was conducted to investigate the improvement in student learning outcomes after using the Scales media based on Montessori method.

Table 3 Results of n-gain test

Class	Average Pretest Score	Average Posttest Score	N-gain	Criteria
Product Trial	3.646	8.96	0.836	High
Usage	3.751	8.464	0.754	High

Based on Table 3, it can be seen that the learning outcomes in product trials and in usage trials increased with high criteria.

### DISCUSSION:

Based on the results and discussion of the study, it was concluded that mathematics learning of estimating decimal fraction using Scales based on the Montessori method consists of effective scales and puzzles. The effectiveness of learning can be seen from the improvements after using the Scales media based on the Montessori method. This is in line with the study by (Nugrahanta, Rismiyati, Anugrahana, & Kurniastuti, 2016), the results of the study showed that the learning outcomes of elementary students improved by using teaching aids dakon board based on the Montessori method. Another study conducted by (Sujiati, 2016) concluded that the average student learning outcomes increased after using Montessori teaching aids. Another study by (Sari, 2014) revealed that puzzle media are effective in increasing students' ability to understand fraction concepts. Furthermore, the media used in groups also makes learning more effective. This is in line with the research by (Arsaythamby & Zubainur, 2014) that mathematics learning in elementary schools is more effective through group activities. A study by (Yurniwati & Hanum, 2017) indicated that students prefer to move, play in groups rather than having to sit quietly and merely listening to the teacher's explanation. By playing, children will practice balance, both gross and fine motorize, controlling limbs, agility and eye and hand coordination (Amir et al., 2019). The role of a Montessori educator is to creating a cooperative and supportive setting that is organized and seems pleasing to the learners (Shivakumara et al., 2016). This can be realized when the student uses the scales to practice the estimation process.

Basic competencies related to developed media are 3.3 explains and performs the estimation of addition, subtraction, multiplication and division results for the two integers, fractions or decimals and 4.3 solving

estimation problems of addition, subtraction, multiplication and division results for the two integers, fractions or decimals. Computational estimation is seen as an important topic in primary mathematics education and also a frequently employed skill in everyday life (Sekeris, Verschaffel, & Luwel, 2019).

#### CONCLUSIONS:

This study is a Research and Development (R&D). The product is the Scales based on Montessori method adapted from the existing number scales. Creating the Scales media takes into account the problems, potential, needs, and characteristics of number scales and the characteristics of Montessori method. The products developed in this study are scales and puzzles which are put into containers. Because of the limitation of researchers, this media is designed and focused on the concept of estimating the addition and subtraction of decimal fractions for grade 4 students.

The feasibility of this Montessori-based media is based on the evaluation of the material expert and the media expert. The score from material expert is 3.29 with very good criteria. The score from media expert was 3.76 with very good criteria. Therefore, the learning media is feasible to be used in mathematics learning for estimating decimal fractions for grade 4 students.

The Scales based on Montessori method is effective in improving mathematics learning outcomes for estimating decimal fractions of grade 4 students at Jatisari Public Elementary School. The feasibility test in product trials obtained  $Z_{\text{count}} = 1.8506$  and  $Z_{\text{table}} = 1.64$  with classical accomplishment criteria. Furthermore, the accomplishment in usage trials obtained  $Z_{\text{count}} = 2.0412$  and  $Z_{\text{table}} = 1.64$  with classical accomplishment criteria. The results of the product trial t-test obtained  $t_{\text{count}} = 13.129$  and  $t_{\text{table}} = 2.997$ , while the t-test in the usage trials

obtained  $t_{\text{count}} = 7.229$  and  $t_{\text{table}} = 2.660$ . Therefore, it can be concluded that  $t_{\text{count}} > t_{\text{table}}$ , then  $H_0$  is accepted so that the average posttest score is higher than the average pretest score. N-gain test was conducted to determine the increase in students' learning ability during the pretest and posttest. The N-gain score in product trials was 0.836 with high criteria and in usage trial was 0.754 with high criteria. It can be concluded that mathematics learning in decimal fraction estimation using Scales media based on the Montessori method is effective so that learning outcomes increase.

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## **PR ACTIVITIES AS AN EFFECTIVE WAY TO PROMOTE ECOTOURISM**

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### **ABSTRACT:**

Ecological Tourism is a journey through relatively untouched natural places. Ecotourism, as a part of the social sphere performs the following functions: rational use of free time for tourists, providing employment of the population of the specific area, raising the standard of their living, ecological education of tourists, raising the culture of relationship with nature, Developing ethical norms of behavior in the natural environment and increasing personal responsibility in this direction, actuate the principles of "Green Marketing", preserving etalon objects of nature.

The development of ecological tourism on the territory of Georgia covers the following aspects: 1. Identification those natural objects and areas that represent the sphere of interest for tourists; 2. Development of such tourism programs that provide minimal impact of tourists on natural complexes and do not restrict overly tourist opportunities; 3. Supporting the economic welfare of local residents, encouraging them to preserve regional, natural and cultural heritage; 4. Development of tourism services to attract international tourists; 5. Development of effective marketing strategies in the field of ecotourism.

Proper PR and advertising campaigns can become a current means of promoting and popularization of ecotourism in our

country, both in the domestic and foreign markets.

Ecological PR uses all kinds of PR tools: publications, social advertising, creating publicity, civilized lobbying, special events, participation of community, blogs.

Ecological tourism, which is not yet popular in our population, needs to be actively promoted. In the field of ecological services, ecotourism becomes a tool of ecological PR with the aim of raising public awareness.

**KEYWORDS:** ecological tourism, ecotourism promotion, ecological PR, ecological education, PR tools.

### **INTRODUCTION:**

Deterioration of the world ecological situation caused by climate change, ozone layer depletion, demographic explosion, ecosystem depletion and drastic reduction of biodiversity, weakening of energy resources, environmental pollution, drinking water scarcity, reduction or destruction of particularly protected natural areas, variability of natural processes taking place in the biosphere, provides a basis for many experts to make predictions about the development of ecotourism. Environmental degradation is taking place at an ever-increasing pace, which is having a negative impact on the daily lives of the planet's population. Ecotourism may become a serious alternative to an industry focused on the enhanced exploitation of the natural resources of a country or region. {1}

According to the Ecotourism Society (USA), ecological tourism is the travelling to relatively pristine natural areas. Ecotourism, as part of the social sphere, performs the following functions: rational use of tourists' free time, employment of the population of a particular area, raising their living standards, ecological education of tourists, raising the culture of relations with nature, developing ethical norms of behavior in the natural environment and increase personal responsibility in this regard, actuate the principles of "Green Marketing", maintain the standard objects of nature. In general, the development of tourism increases revenues, which is important for the formation of the country budget, which, in turn, creates the opportunity to forming and implements strategies for the further development of ecotourism. {3}

According to experts, in the 21st century, the growth rate of ecotourism will be high, and the revenues generated will make a significant contribution to the economic development of many countries around the world and especially developing countries. This will stimulate the socio-economic growth of the backward and, above all, mountainous regions. High hopes are placed on ecotourism in terms of realization of the concept of sustainable development of tourism. Rational use of natural and cultural-historical tourism resources will avoid many negative consequences of mass tourism.

Among the main drivers of ecotourism formation, the anthropogenic load strengthened on natural and cultural-historical tourism resources, caused by mass tourism, plays a leading role, which increases in direct proportion to the growth rate of tourist visits. Given the forecast of tourism development in the 21st century, there is an obvious increase in resistance to meeting the demand for

tourism and the rational use of tourism resources.

Negative aspects of the impact of mass tourism on the environment and tourism resources were mentioned as far back as the foreign and domestic studies of the 1970s. Today, anthropogenic pressure and its deterrent effects takes place in most of the tourist areas, in almost all sectors of the tourism industry. For example, in Poland, for this reason, the length of water tour routes in rivers and lakes has been reduced by 40%, and in the seas by 70%, the area of damaged forests has been increased by 60%. The average rate of soil and soil washing has exceeded the permissible limit 86 times as a result of tourist traffic in the Balinger Canyon in the USA. {4}

The problem of sustainable development is especially relevant for the unique natural objects and events involved in tourism, for natural reservations. Tourists are often the main source of income for people living in the vicinity of such facilities (this is especially true in mountainous regions).

The impact of tourism on natural complexes can be direct and indirect, the scale of which is difficult to determine. Examples of the impact of tourism on the components of the natural environment can be named as follows: in the soil - loss of fertile layers, reduced looseness, changes in humidity and temperature of the microflora; In plants - change in species composition, change in spatial structure, distribution of individual characteristics into tiers; In the water system - changing the characteristics of the shoreline and the seabed, increasing the volume and turbidity of the sludge, changing the organic and chemical composition.

It should be noted that ecological tourism is a very important direction of social-economic development not only of a specific place or region, but also of the whole country. At the same time, it has an important



component - the focus on environmental protection, therefore, on the ecological modernization of business processes, which meets the modern world requirements for sustainable development.

The aim of the research is to present the role of PR in the development of one of the most important directions of tourism - ecotourism.

The main objectives of the research are:

1. Discussion of the current situation in the ecotourism market in Georgia; 2. Offering effective and result-oriented PR opportunities for the development and promotion of ecological tourism in Georgia.

Main part. The ecotourism business is based on many projects and programs of tourist service, where in addition to tour agents and tour operators, the following facilities participate: 1. Institutions that serve the accommodation of ecotourists; 2. Food facilities; 3. Transport service companies; 4. Advertising and information tourism services; 5. Trade facilities; 6. Health centers, etc.

These facilities that comprehensively constitute the ecotourism infrastructure provide ecotourists with numerous services throughout the route and determine the development of the ecotourism business. It should be noted that tourists visiting less developed regions often have to be prepared to forget the usual standards of comfort. In some ways, this can also be considered an attractive aspect of ecotourism. Tourists should be informed about the specifics of the place they are visiting and also about how to behave in order to minimize the impact on the environment. This is the main responsibility of the tourism industry. But at the same time, the existence of ecological tourism resources is essential. Here we must allocate recreational resources. Protection and detection of recreational resources include normalization of pressure on natural complexes, allocation of

green zones and resort forests, protection of recreational lands, forest use measures, maintaining the cleanliness of groundwater, mineral resources and springs, etc.

Not only recreational resources but also geographical location, historical and cultural heritage, the originality of the sights, natural conditions, tourist centers and zones are important in ecotourism. Natural and geographical conditions are the priority basis for the development of tourism business. In the initial stage, it develops intensively in the countries and regions that have the necessary climatic conditions, later it becomes necessary to demand the level of education and cognition, and then - historical and cultural resources become very important. {1}

Ecotourism is considered as one of the directions of tourism based on the use of natural objects. As the experience of European countries shows, ecotourism in local areas can ensure the economic development of the local community in a way that preserves and improves the quality of the natural environment. Activities in the field of ecotourism and its infrastructure are usually small, but taken together, in a complex way can play a special role in creating the necessary environment for the emergence of new industries, providing jobs, generating tax revenue, attracting investors. The main goal of ecotourism is the use of ecological and information resources. Ecological resources - this is the natural balance of environmental components, which is formed without the active intervention of humans. The main value of ecological resources is the originality of nature. This is what attracts tourists. People living in cities are constantly feeling the negative impact of polluted air and water, noise and social conflicts. As a result of the use of ecological resources, people get a healing and cognitive effect, and when it comes to information resources, they make it possible

for those who want to approach ecological resources and benefit from them.

Environmental protection is an integral part of ecotourism development strategy. It can also bring economic benefits. In ecotourism, this happens when both the environment and the business are healthy. Sometimes the interests of the population are sacrificed for the protection of the environment. For example, residents may be barred from doing agricultural work, collecting fuel and building materials. The environment is sacrificed to the maximization of short-term profits, the existing ecosystem is destroyed. Degradation of tourism resources works against both interests (environmental protection and ecotourism). It is also very important to take into account that tourism cannot develop without some impact on the environment. However, without caring for the environment, it is impossible to focus on tourism alone. Therefore, one of the main principles of sustainable development of ecotourism is to ensure the involvement of local people in it. {5}

Georgia has great potential for the development of ecotourism due to its diverse natural zones, aesthetically attractive landscapes, the Caucasus Mountains covered with permanent snow and glaciers, karst caves, with unique flora and fauna untouched by urbanization and cultivation processes, unique monuments of history, culture and nature, not a small number of relict and endemic species included in the Georgian and International Red Book, protected and developed networks of natural areas. Ecotourists are especially attracted by the rich ethno culture, various public holidays, customs, unique samples of folk crafts, traditional hospitality of the population and Georgian cuisine. {2}

The development of ecological tourism on the territory of Georgia includes such aspects as:

- Identify the natural objects and areas that are of interest to tourists;
- Development of such tourism programs that ensure minimal impact of tourists on natural complexes and do not overly restrict the opportunities of tourists;
- Supporting the economic well-being of local residents, which encourages them to preserve the regional natural and cultural heritage;
- Development of tourism services to attract international tourists;
- Develop effective marketing strategies in the field of ecotourism.

In Georgia, ecotourism can comprehensively solve nature protection and social-cultural problems, food supply, transport, accommodation for tourists. Ecotourism, as an integral part of the service sector, has its specifics and functions that allow us to define it as an autonomous field of economic activity. The field of ecotourism services includes the base of natural facilities, infrastructure and services that affect the quality of tourism services and the development of ecotourism in the country. {1}

Georgia's integration into the world economy system necessitates the development of ecological tourism as a priority direction of the world tourism industry, which allows us to simultaneously preserve natural values in a mode of sustainable development, to develop infrastructure and replenish the state budget. All of this puts on the agenda the need to make the right marketing moves.

As ecotourism is a part of the service industry, unlike material production, its marketing is more difficult; therefore, proper PR and advertising campaign can be a topical means of developing and promoting ecotourism in our country, both in domestic and foreign markets, which is mainly carried out through various means of mass

communication, especially - through television and the Internet.

With the help of environmental PR, the society and the state formulate the direction of development in environmental issues and solve ecological problems. Clearly, environmental issues must be resolved jointly by humanity, but this is not always possible on the background of economic and political crises. Today, the state tries to solve environmental problems as follows: every citizen of the country realizes the ecological threat and takes care of nature. For this purpose, a purposeful process of formation of ecological culture and ecological awareness of citizens is underway in Georgia. This is the main task of ecological PR. {6}

One of the levers of ecological education and, consequently, ecological PR is the close acquaintance of the population with the natural world, in direct contact with it (in campaigns, special ecological tours).

Ecotourism is a special type of travel, the main purpose of which is: ecological education, careful attitude towards nature, as well as providing a full-fledged recreation in a pristine natural environment. However, it can be said that ecotour is a specific ecological event that makes it one of the tools of ecological PR.

Environmental PR uses all kinds of PR tools: publications, social advertising, publicity, civilized lobbying, special events, community participation, blogs.

The mass media contributes to the formation of the problem and its inclusion in the agenda; The media influences the development of state policy (for example, programs, laws), directly participates in its implementation and evaluation of the results obtained. Mass media can become reliable partners not only in formation of positive image of the firm and advancing the ecological tour, but also in advancing the ecological

thought. In this case, the forms of communication with the massmedia can be press-conferences and briefings, followed by the publication of information in the massmedia, the press attention to the tour advertising campaign events, and the most effective lever for influencing the mass media will be the joint invitation of journalists and employees of travel companies to a press tour.

Publicity this is the public interest in the subject, the formation of the subject's awareness and popularity, gaining and maintaining the public's interest in this or that object. One of the ways to create publicity is special events, in particular, environmental events, competitions, festivals, flash mobs, sports and cultural-recreational events, etc.

Specially organized events are planned in advance; the target groups of consumers, society, organizations, as well as state structures are informed about their holding in different ways.

Conventional Information Events - conferences, seminars, meetings, roundtables on environmental issues can be seen as special as a result of proper coverage by the media.

A specially organized tour involving massmedia representatives and ecologists can also be turned into a special event. At this time: promotion of the ecological idea and the tour organizer tour operator; promoting of ecotourism as a new form of recreation; attract tourists, the press and the public to the region where the tour takes place.

Environmental PR also uses lobbying in a civilized form, which involves representing environmental organizations with various levels of government.

Social advertising is aimed at disseminating environmental thought and building environmental awareness among the population.

Public participation implies public participation in solving environmental problems.

The use of social networks and blogs to spread ideas, goods and services has become very popular. By connecting with high-profile bloggers today, ecotour can be successfully promoted. {6}

Ecotourism will be greatly promoted by holding PR-events such as "Ecological Tourism Day", "Tourism and Ecology", "Ecological Music Festival", etc.

The mass media should present natural (national parks, protected areas, etc.) and cultural-historical objects, complete data about the whole country or individual region, where ecotours and ecological-educational events should take place. It will even serve to create the image of an attractive tourist country for nature lovers.

Using all the above-mentioned means, it is possible to create a positive image of Georgia as a region with the best potential for the development of ecological tourism outside its borders and to interest many potential tourists. At the same time, tourists' impressions, their information, information received through various media and communication can play an essential role in shaping and strengthening the image.

Thus, properly conducted environmental PR will interest many people, and the more participants in the ecotours, the more will expand the circle of society that is interested in the ecological condition of the regions and the preservation of the world around us.

Ecotourists' service in the regions needs the hotels, restaurants, cafes, as well as development of cultural components (museums of local lore, ethnocultural centers). The implementation of such a program will create new jobs. At the same time, the population will not completely switch to the

services of tourists; most will continue to live as usual, engaging in traditional fields of agriculture, which ensures the use of nature in a saving mode.

#### **CONCLUSION:**

Thus, ecotourism, which is not yet properly popular among our population, needs to be further actively promoted with PR activities, aimed at raising public awareness in the field of environmental services; ecotourism becomes an instrument of environmental PR.

Ecological tourism is considered not only as a means of ecological education, but also as a means of attracting tourists to explore nature and, consequently, to preserve it.

Conducting ecological tours in the regions of Georgia will help to draw public attention to the ecological condition of these regions, as well as create new jobs in the field of tourist services, which will lead to the expansion of infrastructure in settlements.

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**ACCORDING TO THE IMMUNOLOGICAL PARAMETERS OF PEOPLE WITH FAMILY BRONCHIAL ASTHMA IN THE UZBEK POPULATION DIFFERENTIAL-DIAGNOSTIC AND PROGNOSTIC CRITERIA OF THE DISEASE**

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**ABSTRACT:**

The article examines the spectrum of immunoglobulin, anti-inflammatory and increasing cytokines in blood serum in familial bronchial asthma, as well as the nature of the pathogenetic and clinical types that determine the course of the disease. 346 relatives from 49 families with bronchial asthma were examined. At the same time, total IgE, IL-6 and interferon- $\gamma$  were tested in serum using the IFA method using the Vector-Best test system. Serum levels of total IgE, IL-6 and interferon-g detected in the blood serum of patients with familial bronchial asthma were analyzed for pathogenetic types of AD disease, disease severity, medical history and disease control. It has been shown that in familial bronchial asthma, an increase in total serum IgE, IL-6 and a decrease in interferon-g are differential diagnostic markers of disease progression, allergic type, accelerated disease progression and uncontrolled disease.

**KEY WORDS:** familial bronchial asthma, total IgE, IL-6, interferon-g, differential diagnosis, prognostic criteria.

**RELEVANCE:**

One of the main people of the pathogenesis of bronchial asthma is the remission of the immunological state of the organism. In bronchial asthma, a change in immunological reactivity develops, a violation of balance in the cytokine system is manifested. Cytokinins, which are part of the immune system, perform the main key function in bronchial asthma, participate in the development of a chronic inflammatory process and are responsible for the character of inflammation rejection. One type of cytokines is interleukins, which have an anti-immune effect on immune inflammation and inflammation in ba disease [5,6,7,8,9,10,12].

Also known is the increased amount of IgE in the blood serum in allergic diseases in cases of mumps. In bronchial asthma, however, an increase in the amount of IgE is considered to have an important diagnostic significance[4,11].

Despite the fact that the majority of the literature on immunological changes observed in bronchial asthma to date has been established, the immunological characteristic of bronchial asthma collected in the family in the Uzbek population has been poorly studied[1,2,3]. Therefore, it is necessary to study the immunological characteristics of

patients with family bronchial asthma in the Uzbek population.

#### **PURPOSE OF THE STUDY:**

To examine the evaluation of differential-diagnostic and prognostic criteria of the disease according to immunological parameters of patients with family bronchial asthma in the Uzbek population.

#### **MATERIALS AND METHODS OF RESEARCH:**

We studied IL - 6 and gamma - interferon in blood serum in patients with bronchial asthma, in 49 probands and 346 relatives from I - IV generations. Proband's relatives in the family were divided into 3 groups: relatives who suffer from BA (82/346 - 23.70%); other allergic diseases (allergic rhinitis, atopic dermatitis, urticaria and others (81/346 - 23.41%), as well as healthy relatives in the family (183/346 - 52.89%). Family members from 4 years to 78 years were 395 people, including 186 men (47.09%) and 209 (52.91%) women. The median age was 33.55 years.

All BA patients underwent comprehensive clinical and laboratory examinations. Patients were verified according to the who international classification (X-revision, ICD-10).

Immunological tests of patients with familial BA were performed in the laboratory of the Institute of immunology and immunodiagnosics of the Academy of Sciences of the Republic of Uzbekistan. Determination of the level of INF- $\gamma$  and IL-6 in blood serum was performed by enzyme immunoassay using the test system for ELISA "ELISA-INF -  $\gamma$ -IL - 6" (JSC "Vector-best", Russia, 2009). Determination of IgE concentration in blood serum was performed using the enzyme immunoassay system of the research and production Association-Biotechnology.

The obtained data were subjected to statistical processing on a Pentium-IV personal computer using programs developed in the EXCEL package using a library of statistical functions with the calculation of the arithmetic mean (M), standard error (m), relative values (frequency,%), student's criterion (t) with the calculation of the error probability (p).

The control group consisted of almost healthy people living in the Republic of Uzbekistan aged 17 - 62 years (average age 28.64) 45 people (23 of them men and 22 women).

#### **CONCLUSION:**

In the study, the distribution of the quantitative index of total IgE, il-6 and interferon- $\gamma$  detected in the blood serum of patients with family ba was carried out according to the pathogenetic types of the disease. It was noted that the mean value of total IgE, IL-6 and IFN- $\gamma$  ( $304,9 \pm 65,67$  me/ml;  $14,0 \pm 2,7$ ;  $7,1 \pm 1,6$  PG/ml) in blood serum in patients with family ba in the general group who were observed increased reliably ( $67,2 \pm 16,4$  me/ml;  $8,6 \pm 2,4$ ;  $4,4 \pm 0,8$  PG/ml).

It was noted that the mean value of total IgE in the serum of patients with allergic type of familial BA disease ( $564.2 \pm 72.04$  IU / ml) was eight times higher than that of practically healthy individuals ( $67.2 \pm 16.44$  IU / ml). The mean value of serum IL-6 ( $18.3 \pm 1.3$  pg / ml) in patients with allergic type of familial BA disease was observed to be significantly higher than in practically healthy individuals ( $8.6 \pm 2.4$  pg / ml). The mean value of serum IFN-g ( $5.1 \pm 0.12$  pg / ml) in patients with an allergic type of familial BA disease did not differ significantly from that of practically healthy individuals ( $4.4 \pm 0.8$  pg / ml).

It was noted that the mean value of total IgE in the serum of patients with nonallergic type of familial BA disease ( $156.4 \pm 21.5$  IU / ml) was twice that of practically healthy

individuals ( $67.2 \pm 16.44$  IU / ml). The mean value of serum IL-6 ( $11.3 \pm 1.06$  pg / ml) in patients with nonallergic type of familial BA disease was not significantly different from that of practically healthy individuals ( $8.6 \pm 2.4$  pg / ml). The mean value of IFN - g ( $8.9 \pm 1.08$  pg / ml) was found to be twice that of practically healthy individuals ( $4.4 \pm 0.8$ pg / ml).

The mean values of total IgE, IL-6, and IFN-g in the serum of patients with a mixed type of familial BA disease were ( $312.9 \pm 44.23$  ME / ml;  $14.8 \pm 1.23$ ;  $7.87 \pm 1$ , respectively). ,  $28$  pg / ml) was found to be significantly above the practically healthy individual index ( $67.2 \pm 16.44$  ME / ml;  $8.6 \pm 2.4$ ;  $4.4 \pm 0.8$  pg / ml).

1 – Table Characteristic of immunological indicators of pathogenetic types of bronchial asthma

Patients Group	Immunological indicators		
	IgE(IU/ml)	IL-6(PG/ml)	IFN-γ (PG/ml)
Control group	$67,2 \pm 16,44$	$8,6 \pm 2,4$	$4,4 \pm 0,8$
General Group	$304,9 \pm 65,67$	$14,0 \pm 2,7$	$7,1 \pm 1,6$
P	0,01	0,05	No
Allergic BA	$564,2 \pm 72,04$	$18,3 \pm 1,3$	$5,1 \pm 0,12$
P	0,01	0,02	No
Noallergic BA	$156,4 \pm 21,5$	$11,3 \pm 1,06$	$8,9 \pm 1,08$
P	No	No	0,05
Mixed BA	$312,9 \pm 44,23$	$14,8 \pm 1,23$	$7,8 \pm 1,28$
P	0,02	0,05	0,05

Analysis of our study showed that those who were diagnosed with family ba had an increase in total IgE, il - 6 in blood serum, a decrease in the amount of interferon-γ, a decrease in the amount of total IgE, il - 6 in blood serum, an increase in the amount of interferon-γ in noallergic type. These indicators were shown to be differential diagnostic immunological marker of the same type of disease while.

When the analysis of the immunological indicators of the disease in patients with ba in

the family is carried out on the pogons of the family, it can be concluded that the presence of family ba disease I – the average value of the total IgE in the blood serum ( $311,1 \pm 32,4$  me/ml) in patients with pogony increased by 4.6 times from the indicator of practical healthy persons ( $67,2 \pm 16.44$  me/ml), the average value of IL-6 in the blood serum ( $18,2 \pm 2,9$  PG/ml) to the indicator of practical healthy persons ( $8,6 \pm 2,4$  PG/ml), it was noted that the figure of individuals ( $4,4 \pm 0,8$  pg/ml) increased by 1,6 times.

The average value of total serum IgE ( $262.6 \pm 21.3$  IU / ml) in patients with stage II familial BA was 3.9 times higher than in practically healthy individuals ( $67.2 \pm 16.44$  IU / ml). The mean value of IL-6 ( $17.7 \pm 2.1$  pg / ml) more than doubled from that of practically healthy individuals ( $8.6 \pm 2.4$  pg / ml), the average value of serum IFN-g ( $7.8 \pm 0.9$  pg / ml) was 1.7 times higher than that of practically healthy individuals ( $4.4 \pm 0.8$ pg / ml).

In patients with stage III familial BA disease, the mean value of total IgE in the serum ( $171.6 \pm 18.6$  IU / ml) was 2.5 times higher than in practically healthy individuals ( $67.2 \pm 16.44$  IU / ml). The mean value of IL-6 ( $14.5 \pm 2.7$  pg / ml) was 1.7 times higher than that of practically healthy individuals ( $8.6 \pm 2.4$  pg / ml), the mean value of IFN-g in serum ( $8,9 \pm 1.4$  pg / ml) was twice as high as in practically healthy individuals ( $4.4 \pm 0.8$ pg / ml).

The average value of total serum IgE ( $132.3 \pm 12.7$  IU / ml) in patients with stage IV familial BA was 1.9 times higher than in practically healthy individuals ( $67.2 \pm 16.44$  IU / ml). The mean value of IL-6 ( $12.3 \pm 1.9$  pg / ml) was 1.4 times higher than that of practically healthy individuals ( $8.6 \pm 2.4$  pg / ml), the mean value of serum IFN-g ( $9,6 \pm 1.2$  pg / ml) was 2.2 times higher than that of

practically healthy individuals ( $4.4 \pm 0.8\text{pg} / \text{ml}$ ) [Table 2].

Table 2 Characteristic of immunological indicators on the severity of rejection of bronchial asthma in the family

The degree of severity of the disease	Immunological indicators		
	IgE(IU/ml)	IL-6(PG/ml)	IFN- $\gamma$ (PG/ml)
Control group	67,2 $\pm 16.44$	8,6 $\pm 2,4$	4,4 $\pm 0,8$
I stage	311,1 $\pm 32,4$	18,2 $\pm 2,9$	7,2 $\pm 1,1$
P	0,01	0,01	0,05
II stage	262,6 $\pm 21,3$	17,7 $\pm 2,1$	7,8 $\pm 0,9$
P	0,01	0,01	0,02
III stage	171,6 $\pm 18,6$	14,5 $\pm 2,7$	8,9 $\pm 1,4$
P	0,01	no	0,02
IV stage	132,3 $\pm 12,7$	12,3 $\pm 1,9$	9,6 $\pm 1,2$
P	0,05	no	0,01

In patients with familial BA, a decrease in total IgE and IL-6 levels in the patient's serum was observed with an increase in disease progression, but an increase in IFN-  $\gamma$  levels was observed. An increase in the severity of this disease can be predicted by the addition of infectious inflammation and insufficient control over the disease.

When analyzing the immunological parameters of patients with familial BA based on the length of the disease, the average value of total serum IgE ( $304.2 \pm 24.9 \text{ IU} / \text{ml}$ ) in patients with familial BA up to 5 years was 67%.  $2 \pm 16.44 \text{ ME} / \text{ml}$ ) 4.5-fold increase, the average value of total IgE in the serum ( $271.6 \pm 26.7 \text{ ME} / \text{ml}$ ) in patients with familial BA with a history of 5-10 years was 4.0 times higher than in practically healthy individuals ( $67.2 \pm 16.44 \text{ ME} / \text{ml}$ ) the average value of total IgE in the serum ( $189.4 \pm 25.8 \text{ IU} / \text{ml}$ ) in patients with familial BA with 10-15 years of experience was 2.8 times higher than in practically healthy individuals ( $67.2 \pm 16.44 \text{ IU} / \text{ml}$ ); The average value of total serum IgE ( $172.7 \pm 22.4 \text{ IU} / \text{ml}$ ) in patients with familial BA for more than 15 years was 2.5 times higher than in practically

healthy individuals ( $67.2 \pm 16.44 \text{ IU} / \text{ml}$ ). was found.

When analyzing the immunological parameters of patients with familial BA based on the length of service, the average value of serum IL-6 ( $16.2 \pm 1.9 \text{ pg} / \text{ml}$ ) in patients with familial BA up to 5 years of age was 8%. ,  $6 \pm 2.4 \text{ pg} / \text{ml}$ ) increased by 1.9 times, the average value of serum IL-6 ( $15.4 \pm 2.1 \text{ pg} / \text{ml}$ ) in patients with familial BA with a history of 5-10 years of disease was 1 ( $8.6 \pm 2.4 \text{ pg} / \text{ml}$ ) from the practically healthy individuals. An 8-fold increase in the mean value of serum IL-6 ( $14.6 \pm 2.3 \text{ pg} / \text{ml}$ ) in patients with familial BA with a history of the disease of 10-15 years compared to practically healthy individuals ( $8.6 \pm 2.4 \text{ pg} / \text{ml}$ ). ml) increased by 1.7 times, the average value of serum IL-6 ( $13.1 \pm 2.9 \text{ pg} / \text{ml}$ ) in patients with familial BA for more than 15 years ( $8.6 \pm 2.4 \text{ pg} / \text{ml}$ ) was noted to increase 1.5-fold.

When analyzing the immunological parameters of patients with familial BA based on the length of service, the average value of serum IFN-g ( $6.0 \pm 0.9 \text{ pg} / \text{ml}$ ) in patients with familial BA up to 5 years was 4 times higher than that of practically healthy individuals ( $4.4 \pm 0.8\text{pg} / \text{ml}$ ) 1.3-fold increase, the average value of serum IFN-g in patients with familial BA with a history of 5-10 years ( $6.4 \pm 1.2 \text{ pg} / \text{ml}$ ) is 1.5 times higher than in practically healthy individuals ( $4.4 \pm 0.8\text{pg} / \text{ml}$ ). The average value of serum IFN-  $\gamma$  ( $7.2 \pm 1.5 \text{ pg} / \text{ml}$ ) in patients with familial BA with a history of the disease of 10-15 years ( $4.4 \pm 0.8 \text{ pg} / \text{ml}$ ) 1.6-fold increase in mean serum IFN-g ( $8.4 \pm 1.4 \text{ pg} / \text{ml}$ ) in patients with familial BA with a history of more than 15 years ( $4.4 \pm 0$ );  $8\text{pg} / \text{ml}$ ) was noted to increase 1.9-fold [Table 3].



3 table Characteristic of immunological indicators for the duration of bronchial asthma

Duration of the disease	Immunological indicators		
	IgE(IU/ml)	IL-6(PG/ml)	IFN-γ (PG/ml)
Control group	67,2 ±16,44	8,6±2,4	4,4±0,8
1-5 years	304,2±24,9	16,2±1,9	6,0±0,9
P	0,01	0,05	no
5-10 years	271,6±26,7	15,4±2,1	6,4±1,2
P	0,02	0,05	no
10-15 years	189,4±25,8	14,6±2,3	7,2±1,5
P	0,05	0,05	no
15 йилдан куп	172,7±22,4	13,1±2,9	8,4±1,4
P	0,05	no	0,05

The table shows that in patients with familial BA, an increase in the length of the disease was accompanied by a decrease in total serum IgE and IL-6, and an increase in IFN-g. It is also possible to predict the presence of infectious inflammation and insufficient control over the disease.

When analyzing the immunological parameters detected in patients with familial BA according to the degree of disease control, the average value of total serum IgE in patients with familial BA ( $243.4 \pm 29.3$  IU / ml) was lower than in practically healthy individuals ( $67.2 \pm 16.44$  ME / ml) was significantly increased. The mean value of serum IL-6 ( $9.6 \pm 3.3$  pg / ml) was lower than that of practically healthy individuals ( $8.6 \pm 2.4$  pg / ml) and the mean value of IFN-g ( $4.8 \pm 0,9$  pg / ml) was not significantly different from practically healthy individuals ( $4.4 \pm 0.8$  pg / ml).

The mean value of total serum IgE ( $456.7 \pm 32.8$  IU / ml) in uncontrolled patients with family BA was 6.8 times higher than that of practically healthy individuals ( $67.2 \pm 16.44$  IU / ml), serum IL-6 the mean value ( $15.7 \pm 4.5$  pg / ml) was 1.8 times higher than that of practically healthy individuals ( $8.6 \pm 2.4$  pg / ml). It was noted that the mean value of serum IFN-g ( $3.5 \pm 0.8$  pg / ml) was significantly lower

than that of practically healthy individuals ( $4.4 \pm 0.8$ pg / ml) [Table 4].

The mean value of total serum IgE ( $243.4 \pm 29.3$ ) in patients with familial BA was found to be twice as low as in non-controlled patients ( $456.7 \pm 32.8$ ). Similarly, the mean value of serum IL-6 ( $9.6 \pm 3.3$ ) was observed in patients with familial BA compared with uncontrolled patients ( $15.7 \pm 4.5$ ). The mean value of serum IFN- γ ( $4.8 \pm 0.9$ ) was not significantly different from that of uncontrolled patients ( $3.5 \pm 0.8$ ).

Table 4 Characteristic of immunological indicators for controlled weight loss of bronchial asthma in the family

Degree of control of the disease	Immunological indicators		
	IgE(IU/ml)	IL-6(PG/ml)	IFN-γ (PG/ml)
Control group	67,2 ±16,44	8,6±2,4	4,4±0,8
Controlled BA	243,4±29,3	9,6±3,3	4,8±0,9
P	0,01	no	no
Uncontrolled BA	456,7±32,8	15,7±4,5	3,5±0,8
P	0,01	no	no

Immunological parameters in the patients in the study showed that the disease was in remission in patients with BA control, and consistent with the period of observation of BA in uncontrolled patients. This indicator is also of diagnostic and prognostic importance in the disease.

Table 5 shows the taxonomy of immunological indicators in the families of probands, caries and health care patients with family bronchial asthma in the study population. The table shows that the average value of total IgE in total serum in family probands ( $497.9 \pm 33.6$  IU / ml) was significantly higher than in practically healthy individuals ( $67.2 \pm 16.44$  IU / ml), IL-6 in serum The mean value of the amount ( $14.0 \pm 2.9$  pg / ml) significantly exceeded the indicator of practically healthy individuals ( $8.6 \pm 2.4$  pg / ml) and the average value of the

amount of IFN -  $\gamma$  in the serum ( $7.1 \pm 1, 2$  pg / ml) was significantly higher than in practically healthy individuals ( $4.4 \pm 0.8$ pg / ml).

The mean value of total IgE in total serum ( $285.6 \pm 29.3$  ME / ml) in relatives with BA in the family was significantly higher than in practically healthy individuals ( $67.2 \pm 16.44$  ME / ml) and the mean value of serum IL-6 ( $12.4 \pm 2.6$  pg / ml) was significantly higher than that of practically healthy individuals ( $8.6 \pm 2.4$  pg / ml). It was noted that the mean value of serum IFN-  $\gamma$  ( $5.1 \pm 0.9$  pg / ml) did not differ significantly from that of practically healthy individuals ( $4.4 \pm 0.8$  pg / ml).

In healthy relatives in the family, the mean value of total serum IgE ( $304.9 \pm 32.9$  IU / ml) was significantly higher than in practically healthy individuals ( $67.2 \pm 16.44$  IU / ml) and the mean value of serum IL-6 ( $9, 3 \pm 1.9$  pg / ml) was significantly higher than in practically healthy individuals ( $8.6 \pm 2.4$  pg / ml). The mean value of serum IFN-  $\gamma$  ( $4.8 \pm 0.8$  pg / ml) did not differ significantly from that of practically healthy individuals ( $4.4 \pm 0.8$  pg / ml).

Table 5 Characteristic of immunological indicators in individuals in the family

Group of those who conducted the study	Immunological indicators		
	IgE(IU/ml)	IL-6(PG/ml)	IFN- $\gamma$ (PG/ml)
Control group	67,2 $\pm$ 16,44	8,6 $\pm$ 2,4	4,4 $\pm$ 0,8
Probands	497,9 $\pm$ 33,6	14,0 $\pm$ 2,9	7,1 $\pm$ 1,2
<i>P</i>	0,01	no	0,05
Sick relatives	285,6 $\pm$ 29,3	12,4 $\pm$ 2,6	5,1 $\pm$ 0,9
<i>P</i>	0,01	no	no
Healthy relatives	304,9 $\pm$ 32,9	9,3 $\pm$ 1,9	4,8 $\pm$ 0,8
<i>P</i>	0,01	no	no

Thus, total serum IgE levels were found to be higher in family probands ( $497.9 \pm 33.6$ ). This means that the disease in the proband occurred during the fall. In relatives with BA

( $285.6 \pm 29.3$ ), the total amount of total IgE was lower than in the proband, indicating that the patients were in remission. High levels of total IgE in healthy relatives ( $304.9 \pm 32.9$ ) indicate that they have other allergic diseases. Serum IL-6 and IFN-  $\gamma$  levels also showed that family members were more suitable for the above stages of the disease.

The correlation between IgE, IL-6, and IFN-  $\gamma$  in the study groups in the family is shown in Table 6. The data in the table show that when a correlation was found between IL-6 and IgE concentration levels in patients with familial BA, a single correlation was confirmed in the general group of patients ( $r = 0.64$ ;  $P < 0.01$ ). It was also found that patients with allergic BA also had a correlation ( $r = 0.74$ ;  $P < 0.01$ ). There was a weakly expressed correlation between IL-6 and IgE concentration levels ( $r = 0.25$ ;  $P < 0.05$  and  $r = 0.11$ ;  $P < 0.05$ ) in patients with mixed and nonallergic BA disease.

Negative correlation between IFN-  $\gamma$  and IgE concentration level ( $r = -0.34$ ;  $P < 0.02$ ) in patients with bronchial asthma in the general group when studying the correlation coefficient value of IgE level and IFN-g in serum of patients with familial BA observed. It was also observed that patients with allergic BA also had a negative correlation ( $r = -0.30$ ;  $P < 0.02$ ).

6 – Table Correlation of IgE, IL-6 and IFN-  $\gamma$  in the study groups

Patients Group	Correlation indicators		
	IgE-IL-6	IL-6-IFN $\gamma$	IgE- IFN $\gamma$
General Group	0,64	-0,33	-0,34
<i>P</i>	0,01	0,02	0,02
Allergic Ba	0,74	-0,21	-0,30
<i>P</i>	0,01	0,05	0,02
Noallergic Ba	0,11	-0,41	0,04
<i>P</i>	0,05	0,02	no
Mixed Ba	0,25	0,04	0,22
<i>P</i>	0,05	no	0,05

Between IL-6 and IFN- $\gamma$  concentrations, patients with BA also had a general ( $r = -0.33$ ;  $P < 0.02$ ), allergic ( $r = -0.21$ ;  $P < 0.05$ ) and especially nonallergic. in the group ( $r = -0.41$ ;  $P < 0.02$ ) a negative correlation was observed.

The results of the correlation analysis show that the production of cytokines in different pathogenetic forms of BA is specific.

#### CONCLUSION:

Thus, in the Uzbek population, the indicators of immune status in patients with familial bronchial asthma have important differential-diagnostic and prognostic significance.

An increase in total IgE, IL-6, decrease in interferon-g, decrease in total IgE, IL-6 in non-allergic patients, increase in interferon-g in patients with familial BA are differential diagnostic immunological markers of disease differentiation.

In patients with familial BA, a decrease in total IgE and IL-6 levels with increasing disease progression and experience, but an increase in IFN-g indicates the presence of infectious inflammation and insufficient control of the disease, indicating the need for timely treatment.

The identified immunological indicators are of diagnostic and prognostic significance, indicating that the high in probands in the family is the period of exacerbation of the disease, and the low in probands in relatives with BA indicates the period of remission of the disease. This indicates the need for timely treatment and prophylactic planning.

High levels of total IgE detected in healthy relatives in the family indicate the presence of other allergic diseases and a genetic predisposition to the disease, indicating the need for primary prophylaxis.

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## TO STUDY THE INCIDENCE OF BRONCHIAL ASTHMA IN FAMILY GENETIC AND EPIDEMIOLOGICAL STUDIES

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### ABSTRACT:

This article presents an analysis of the literature on the frequency of spread of bronchial asthma, genealogical characteristics among Uzbek families of the population. Despite the large amount of work, the significance of genetic factors in the course of the disease, bronchial asthma, accumulated in the family among the Uzbek population, has not yet been sufficiently studied. It can be said that the occurrence of hereditary factors and environmental conditions in this type of disease, bronchial asthma among the population of families belonging to the population, creates the basis for the development of plans for the prevention and prognosis of the disease of bronchial asthma.

**KEY WORDS:** family bronchial asthma, Uzbek population, genealogical characteristic.

### INTRODUCTION:

As a result of genetic and epidemiological studies conducted in a number of families around the world, it is noted that bronchial asthma (BA) is very common among family members. The risk of developing the disease in children is three times higher than in a healthy family if one of the parents is diagnosed with BA, and the risk of infection in children is six times higher if both parents are diagnosed with BA [2, 3].

In the literature, it was emphasized that the prevalence of BA is 10-25% among individuals in the family [1,2,5].

A.M. Ubaydullaev, M. A. Yakimova for the first time in the Uzbek population, a genetic study conducted in a family of patients with BA studied the prevalence and hereditary predisposition of this disease in Uzbek families. In an inbred marriage, a severe course of AD in an infected family and an early onset of the disease were detected [4,5]. Based on the above, it should be noted that it is important to determine the course of the BA disease in the family, to assess its hereditary transmission, and the laws by which the disease occurs and is observed in the family.

### OBJECTIVE:

To study the incidence of bronchial asthma in the Uzbek population, as a result of genetic and epidemiological studies conducted in the family.

### OBJECT AND SUBJECT OF RESEARCH:

To complete this task, genetic testing was performed in 49 families with a genetic predisposition to AD by genealogical methods, genealogy, and genealogical analysis.

The main task of the genealogical method is to study the distribution of genetic traits in family members. This is achieved by creating a tree based on the occurrence of a particular disease,

which answers questions about the features of transmission from generation to generation. Genetic analysis of the family tree is used for medical and genetic counseling, that is, to solve questions about hereditary diseases in the family, the risk of patients being born in the family.

Using the genealogical method, genetic information specific to AD in the family was collected by parents, sometimes by interviewing grandparents. The distribution of AD disease and its symptoms in relatives or descendants of the patient, as well as their transmission from generation to generation, the degree of their Association with proband, and individual questionnaires for each person were determined. From the collection of clinical and genealogical information about patients, their families and descendants, the genealogy of the younger generation was formed. A written explanation of the information was given. In the genealogy structure, the order for each generation was represented by Roman numerals, and from top to bottom it sang to the left of the tree. The order of each generation was written from left to right, from bottom to top, in Arabic numerals. Through genealogy, the relationship of each member of the generation to the diseased proband was demonstrated. The representation of generations and representatives of each generation in this direction, on the one hand, provides information about the degree of kinship of probands, on the other hand, the genetic predisposition to the disease and its transmission routes, as well as the role of kinship. An example is to demonstrate the pedigree drawn up for the family of the patient Utasheva Marxam.

## RESULT:

Genealogical analysis was performed using genealogical data and genealogy.

The frequency of AD in their families depends on the order in which THE patients were born in this family, and this condition has also been identified. Observations showed that the first child in a family consisted of 31.65% (25) of sick people, the second child in a family of sick people-24.05% (19), the third child in a family of sick people-16.45% (13), the third child in a family of sick people-11.39% (9), the fifth child in a family of sick people-5.06% (4), the sixth was registered.

The study found that in 43 of 49 families with AD, their parents were diagnosed with AD as a result of genealogical studies conducted to determine the predisposition to AD in affected families. Of these, 15 (30.61%) only in fathers, 24 (48.98%) only in mothers, and 4 (8.16%) in native relatives (inbreeding) of infected parents were registered with BA (table.5). in 3 families, her parents were healthy, but her father's brother and sister were ill with BA, and in 3 families, her parents were healthy, but her mother's brother and sisters were ill with BA. To study the cause of AD in the family, 49 probands and their 346 relatives were examined. In our study, the accumulation of BA in the family was 23.7% (82 out of 346 sick relatives). This indicates that the incidence of AD in families of the Uzbek population is 2-4 times higher than in the General population (5-10%).

During the study, the incidence of AD in the affected family was registered in 74 (933%) patients in the first generation of the family, in 8 (9.7%) patients in the second generation. Familial BA disease was observed in 8.53% (7) of cases, while in patients born from inbred Nichols. In such patients, the course of the disease is manifested by increased susceptibility to dressings, to medical procedures that are accompanied by severe degrees.

In the study family, the incidence of AD was registered in 74 (90.3%) patients in the

first-generation family and in 8 (9.7%) patients in the second-generation family. Familial BA disease was observed in 8.53% (7) of cases in patients born from inbred marriages. In these patients, the course of the disease was severe and difficult to treat.

Thus, the study of the pathogenesis of AD in the family allows us to assess the susceptibility to the disease as a result of the study, the ways of its transmission, the occurrence of the disease in families and its relapses. It can be said that the occurrence of hereditary factors and environmental conditions in this type of AD disease among the population of families belonging to the population creates the basis for the development of plans for the prevention and prediction of AD disease.

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## TEACHING ENGLISH THROUGH LITERATURE AND INTEGRATING LITERATURE INTO FOREIGN LANGUAGE TEACHING

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### ABSTRACT:

**Literature plays a very important role in teaching four basic language skills like reading, writing, listening and speaking. However, when using literature within the language classroom, skills should never be taught in isolation but in an integrated way. Teachers should attempt to teach basic language skills as an integral a part of oral and written communication use, as a part of the means for creating both referential and interactional meaning, not merely as a facet of the oral and written production of words, phrases and sentences.**

**KEY WORDS: imaginative literature, foreign language, integrated language.**

### INTRODUCTION:

Reasons for using literary texts in foreign language classes in line with Collie and Slater, there are four main reasons which lead a language teacher to use literature within the classroom. the globe of a unique, play, story is an imaginary one, it presents a full and colorful setting during which characters from many social and regional backgrounds may be described. A reader can discover the way, the characters in such literary works see the planet outside, their feelings, customs, traditions, what they are doing, believe in, how they speak and behave in several places, parties. the primary reading may be done by the teacher and will not require students to perform an oversized and

complicated task. it's necessary that they enjoy reading, and too many tasks can deprive them of this. allow them to get familiar with the fragment and check their predictions, or answer a awfully general question about the text. During the first stages of literature in foreign teaching classical works by renowned authors were integrated into the curriculum.

These texts were mostly used for translation purposes and exercises on reading comprehension. This led the scholars to appear in a very dictionary for every and each foreign word they are available across. Literature in foreign language teaching tends to stress its role in improving communicative competence and make an awareness in students on the culture and society of the relevant country. The didactics of literature in foreign pedagogy suggest different strategies to familiarize students with understanding and interpreting literary text-sin a far off language.

The warm-up can specialize in the source of the literary fragment. you'll be able to invite students to read a brief reference about this. you'll discuss or briefly tell them how this work is so famous. Reading fiction in English allows you to broaden the horizons of learners, study various cultural and historical events, increase active and passive vocabulary, multiply both linguistic and general cultural knowledge. Reading in English contributes to the dialogue of cultures, acquaints students with the realities inherent in another culture, other peoples and nationalities.



Reading will never lose its relevance, as a form of intellectual activity, as a way of spiritual and moral education and as a source of aesthetic pleasure. Therefore, the utilization of the grandiose possibilities of the book within the study of an overseas language is conditioned. Within the classes on extracurricular reading, strengthening of interdisciplinary ties takes place through acquaintance with classics and contemporary authors of the country of the studied language, with their works reflecting in a way the realities of the country's language and culture, opening a «window» to the planet of another culture, process of intercultural communication.

#### **METHODOLOGY OF RESEARCH:**

The teacher has an important role in teaching English through literature. First, he should determine the aim of language teaching in relation to the needs and expectations of the students. Giving a questionnaire or interviewing with the students orally, the teacher can set up the aim and the objectives of the language teaching. Second, he should select the appropriate language teaching method, teaching techniques, and classroom activities. Then, the teacher should select the literary texts relevant to the aim and the objectives of his teaching. While selecting literary texts to be used in language classroom, the students' language proficiency, interests, age, sex, etc should be taken into account in order not to bore students with inappropriate materials. At elementary levels, for example, students should be given simplified or specially written stories.

At advanced levels, however, students are given literature in its original form so that they can develop their literary competence in the target language. To put it another way, students learn practically the figurative and

daily use of the target language in the literary texts and encounter different genres of literature (i.e. poems, short stories, plays, etc.) at advanced levels. Observing how characters in a play or a short story use figures of speech, such as simile, metaphor, metonymy, etc so as to express their communicative intention, students learn how to write English more clearly, creatively, and powerfully.

The use of literary texts for reading within the teaching of English promotes the event of intellectual and cognitive abilities. Newly acquired linguistic and socio-cultural knowledge and skills can significantly improve the extent of motivation of scholars and help them feel more confident in using English — irrespective of their level of language training. Teaching of English is extremely closely connected with the study of English culture and literature. The familiarity with the most effective samples of classical and modern literature undoubtedly takes place within the culture of the countries of the studied language.

Fiction plays a very important role in shaping the human personality. In fiction, the experience of the many generations, basic moral and spiritual values are laid. Through reading, students absorb the norms of ethical behavior and morality. During reading, both the cognitive and emotional spheres of the personality are involved.

#### **GENERAL ANALYSIS:**

We noticed that Literature plays a crucial role in teaching four basic language skills like reading, writing, listening and speaking. However, when using literature within the language classroom, skills should never be taught in isolation but in an integrated way. Teachers should try and teach basic language skills as an integral part of oral and communication use, as a part of the means for creating both referential and interactional

meaning. In reading lesson, discussion begins at the literal level with direct questions of fact regarding characters, settings, etc.

When selecting a unique to be employed in the foreign language class, the language teacher should concentrate as to if the novel has an intriguing story that may be of interest to the complete class. Themes and settings captivating their imagination and exploring the human condition should be included within the nature of the chosen novels. Novel should have a robust, fast-paced plot and interesting, well delineated, memorable characters. The content of the novel should be suitable to students' cognitive and emotional levels. The study of foreign language suggests broad spectrum of methods and types of language within the foreign literature. Reading literary text, creative work, the coed interprets an intensive lexicon, linguistic analysis of texts, compare it together with his linguistic communication.

The ideal way for several to extend understanding of verbal and nonverbal aspects of communication within the country within which that language is spoken – a visit or an extended stay- isn't probable and for such learners literature is helpful. It provides learners with a good range of individual lexical and syntactic items. They become aware of many features of the written communication and reading. They study functions of sentences, ways of connecting ideas and by this manner they develop their writing skills. They become more productive. When the learner reads a literary text, he begins to inhabit it. He becomes an element of this text. Understanding the meaning of story he becomes enthusiastic to seek out out what happens event unfold via the climax.

Choosing books relevant to the real-life experiences, emotions, or dreams of the learner is of great importance. Language difficulty has

got to be considered also. If the language of the piece of writing is straightforward, this might facilitate the comprehensibility of the literary text but isn't in itself the foremost crucial criterion. Interest, appeal, and relevance are prominent. Enjoyment; a fresh insight into issues felt to be associated with the guts of people's concerns; the pleasure of encountering one's own thoughts or situations exemplified clearly in an exceedingly work of art; the opposite, equal pleasure of noticing those self same thoughts, feelings, emotions, or situations presented by a very new perspective: of these are motives helping learners to address the linguistic obstacles that may be considered too great in less involving material.

#### **CONCLUSION:**

I think students are very bored learning a language by reading literal texts there. But the task of teachers is to assist solve this problem. Because it brings learners closer to language, culture and traditions. It helps to spell and spell them correctly. Literature all told its forms is ubiquitous in today's society, and it's clear how important it's with this concept. Literature could be a central a part of many lives. Learning through literary language has the potential to search out similarities in two different cultures. this can help students enrich their vocabulary and find a higher start within the language. When reading English language literature, students study history, customs, and see how London looked through Dickens eyes as they read novels, poems, stories, and more.

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## SURGICAL TREATMENT OF VASCULAR INJURY WITH TRAUMATIC SHOCK

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### ABSTRACT:

**Purpose of the study:** Identify the features and offer the best tactics for the surgical treatment of vascular injuries in traumatic shock.

**Material and methods:**The clinic has 36 patients with hemorrhagic and traumatic shock. Of them: 33 men (91.6%), women 3 (8.3%). We found, among those admitted to the clinic, 36 patients with hemorrhagic and traumatic shock. So, in 5 patients, the condition was extremely serious. The use of angiography and MSCT is of great importance for the early diagnosis of traumatic vascular damage.

**Results:** We have performed 36 different operations for patients with shock after vascular injury: vessel ligation-19; lateral suture-5. Of them: at the same time imposed side seam venous vessels. Circular suture-4; autovenous shunting-3; prosthetics-4: primary amputation - 1 and 7 patients with epineural suture.

Along with this, severe shock, massive tissue damage and irreversible ischemia were indications for limb amputation in 1 (2,7%) patients with vascular damage. Arrosive bleeding was observed, only in one patient. In 24 (94,4%) patients, wound healing was primary, in 2 (5,5%) patients, wounds healed by secondary intention.

**Conclusions.** The high efficiency of timely application of reconstructive-restorative operations - autovenous shunting and vascular

prosthetics after stabilization of hemodynamic parameters depends on the degree of traumatic and hemorrhagic shock.

**Key words:** traumatic shock, causes, localization, features and tactics of surgical treatment.

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### INTRODUCTION

This work analyzes the current state of etiology, methods of early diagnosis and treatment of traumatic vascular injuries of the extremities [6]. Recent years have been characterized by a sharp increase in the number of injuries accompanied by damage to the great vessels. Damage to large arterial and venous vessels leads to death in 10-56% of patients. According to M.P. Korolev. et al. [8], such outcomes were observed in 25.3% of cases. It should be noted that damage to the great cervical vessels is a serious type of injury. Until now, it remains a complex and difficult task. All these problems lead to unsatisfactory treatment results, sometimes reaching from 27-75% of cases. One of the tendencies in the change in the nature of these injuries, in particular, combat gunshot injuries, is the number of concomitant wounds, mainly of the

limbs with damage to large blood vessels and bones from 40-75%. [1-3]

However, despite this, vascular trauma remains a problem for the surgeon. This is due to the persisting contradictions in the choice of the optimal treatment tactics for arterial injuries. At the same time, injuries with damage to the vessels of the extremities are a common cause of disability and death of victims.

Wartime damage to the subclavian and axillary arteries of the upper limb ranges from 3.2-23.7%, and in peacetime from 15-30% [4,7]. In 38.4-95% of cases, damage to the arteries of the extremities is accompanied by bone fractures. Mortality in case of damage to the vessels of the upper limb reaches 80-90% [7].

As part of our work, we do not pretend to be an exhaustive solution to this problem. However, some opinions and provisions on the problem under study, in our opinion, are controversial and require clarification.

**Purpose of the study:** Reveal the features and propose the optimal tactics for the surgical treatment of vascular injuries in traumatic shock.

**Key words:** traumatic shock, causes, localization, features and tactics of surgical treatment.

**Material and methods:**

Features of specialized care for traumatic and hemorrhagic shock is a complex surgical problem. In our study, when providing emergency care to 170 patients with traumatic vascular injuries, 36 patients admitted to the clinic were found to have hemorrhagic and traumatic shock, of which 33 men (91.6%), 3 women (8.3%). thorough analysis and determination of the optimal approach to treatment with traumatic shock, we distributed them by gender and age, which are presented in the table. №1.

Table 1. Distribution of patients by sex and age

Patient age	Including		number sick (in percentage)
	Men	Women	
Up to 20 years	3	-	8,3%
21-30 years	14	1	41,6%
31-40 years	10	1	30,5%
41-50 years	5	1	16,6%
51-60 years	1	-	2,7%
61-70 years and older	2	-	5,5%
<b>Total:</b>	33	3	100,0

It should be noted that the main causes of vascular damage were sharp cutting objects: knife-9; window glass-19; razor blade-2; explosion-2; blunt trauma-1; pilorema-1; cotton picker-1 and other-3 patients. In addition, traumatic vascular injuries were actions of a criminal nature: suicide, attempted murder, received in a state of strong intoxication.

It should be emphasized that the tactics of a surgeon in providing specialized care to patients with vascular injuries, especially in traumatic shock, cannot be of the same type. The leading factors in the choice and tactics of treatment should be: the general condition of the patient; the degree of ischemia; the nature of the vascular injury; anatomical formations in the limbs and associated injuries. Shock conditions were often observed in acute blood loss. So, in 45-72% of patients, it was accompanied by damage to the great vessels.

Currently, there are all possibilities for performing reconstructive and restorative operations on vessels with simultaneous anti-shock measures. However, the operation on the great vessels against the background of shock can have serious consequences. This is due to the entry into the general bloodstream of products of ischemic tissue damage. To resolve the issue of the possibility of performing reconstructive surgery on the vessels against the background of shock, an objective assessment of the degree of limb ischemia and its progression is required.

Depending on the nature and localization of vascular damage in patients with shock, the distribution was as follows: brachial artery - 17 (12.3%); femoral artery-5 (3.6%); carotid artery-1 (0.7%); occipital artery-1 (0.7%); subclavian-1 (0.7%); ray-2 (1.4%); ulnar-7 (5%); shins (popliteal artery, tibial artery and vein) -1 (0.7%).

Along with this, we have established the nature and connections of injuries with other local injuries (Fig. 1-6).

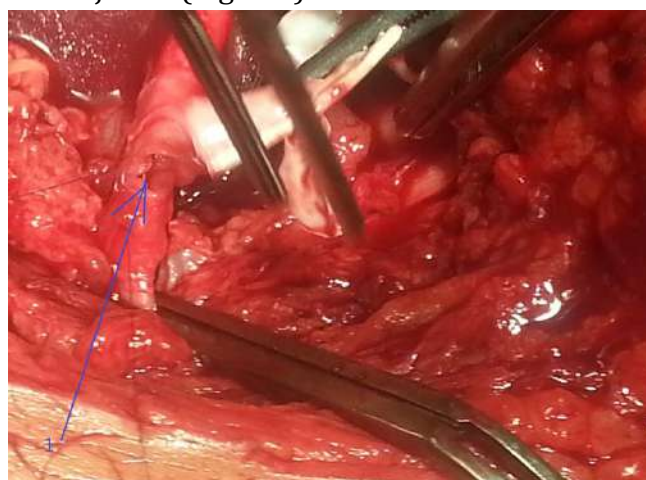


Fig. 1. Lateral suture on the left external iliac artery.



Fig. 2. Condition after the application of a lateral suture on the left external iliac artery.



Fig. 3. 1. Stab-cut wound of the subclavian region with complete intersection of the subclavian artery, on the left. The subclavian artery is repaired by forming an end-to-end anastomosis.

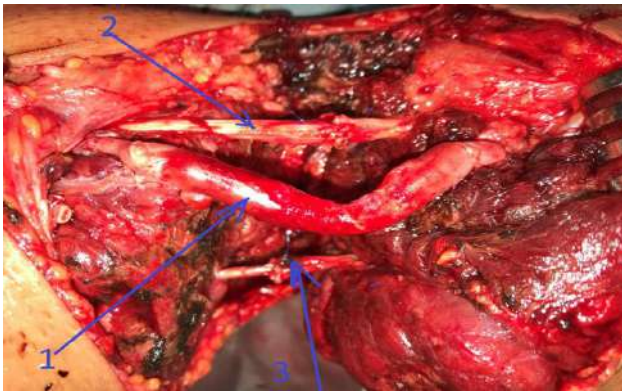


Fig. 4. 1. Autovenous prosthetics of the brachial artery, right. 2. Restoration of the median nerve end-end. 3. End-end ulnar nerve restoration.



Figure: 5. General view of the limb after restoration of the brachial artery, median and ulnar nerves, on the right.



Figure: 6. After recovery after 5 days.

Based on the analysis of indicators of various vascular injuries in their treatment of shock patients, the degree of hemorrhagic shock was established. We have identified 4 degrees of hemorrhagic shock.

I degree of hemorrhagic shock in 5 (3.6%) patients. BCC deficit up to 15%. BP is above 100 mm Hg. Art. central venous pressure (CVP) within normal limits. Slight pallor of the skin and increased heart rate up to 80-90 beats / min, hemoglobin 90 g / l or more.

II degree of hemorrhagic shock was found in 27 (19.5%) patients. BCC deficit up to 30%. With a state of moderate severity, weakness, dizziness, darkening of the eyes, nausea, lethargy, pallor of the skin are observed. Arterial hypotension up to 80-90 mm Hg. Art., a decrease in CVP (below 60 mm water column), tachycardia up to 110-120 beats / min, a decrease in urine output, hemoglobin 80 g / l and less.

III degree of hemorrhagic shock was found in 4 (2.8%) patients. BCC deficit is 30-40%. Moreover, the condition is severe or very severe, lethargy, confusion, pallor of the skin, cyanosis. HELL is below 60-70 mm Hg. Tachycardia up to 130-140 beats / min, weak pulse filling. Oliguria.

IV degree of hemorrhagic shock was found in 1 (0.7%) patients. BCC deficit is more than 40%. The extreme degree of oppression of all vital functions: there is no consciousness; AD and CVP; and the pulse in the peripheral arteries is not determined. Breathing is shallow and frequent. Hyporeflexia. Anuria. Roughly, the amount of blood loss can be estimated by calculating the shock index. Laboratory blood tests were carried out in 36 patients against a background of shock: hemoglobin from 62 to 109 g / l - 22; hematocrit - 6 from 20 to 39%; 1 PTI - 84%; fibrinogen-4 from 4210 to 6660 g / l. and one patient was -1776 g / l.

So, in shock of I-II degree, the restoration of blood flow was carried out with anti-shock measures. In case of traumatic and hemorrhagic shock of the III degree, reconstructive and restorative operations were performed after stabilization of hemodynamic parameters. We found out of all those admitted to the clinic, 36 (26%) patients with hemorrhagic and traumatic shock. Moreover, in 5 (3.6%) patients, the condition was extremely serious. At the same time, we determined the level of blood loss: 1000-1500 ml - 6; 1500-2000 ml - at 25; 2500-3000 ml - in 5 patients. Along with this, we have established the degree of shock for: first -5 (3.6%); the second - 27 (19.5%); the third - 4 (2.8%) patients. At the same time, the patients' blood pressure ranged from 60/30 to 100/60 mm. rt. Art. and a pulse from 60 to 130 beats in one minute.

During surgery under local anesthesia, 6F introducer sheaths are installed in the femoral artery on both sides. Further, an endovascular temporary complete balloon occlusion of arterial vessels was performed. At the same time, a balloon catheter (6x60 mm in size) was used to expand to complete occlusion and vascular patency. The occlusion occurred at a pressure in the balloon up to 9 atm with an RBP of 10 atm. Contrast Unigexol-350 - 100 ml (1 bottle of 100 ml). At the same time, 3 thousand MED heparin was introduced (Fig. 7).



Fig. 7. Rentgenendovascular complete occlusion of the subclavian artery, left.

Determination of the circulating blood volume deficit was carried out according to the value of the shock index by the Allover method (the ratio of the pulse rate to the level of systolic blood pressure), and the shock index was the volume of blood loss (BCC), which is shown in Fig. 2.

To prevent such a complication, we suggested performing perfusion of the ischemic organ. For this, the composition of the perfusion solution was made: broad-spectrum antibiotics (cefuroxome, brolumycin, cyptrioxan) - 1.0; FFP -200 ml; rheomacradex 400 ml; physiological solution - 500 ml; papaverine solution - 5 ml; novocaine solution-200 ml; 4% sodium bicarbonate solution - 150 ml; heparin-20000ED; fibrinolysin - 20,000 ED; diphenhydramine solution-4 ml. and hemosorption to combat acute limb ischemia.

Table 2 Allover shock index indicators

Shock index value	Circulating volume deficit blood
0,5	15%
1,0	30%
1,5	50%
2,0	70%

**Results and discussion:** In order to eliminate the vascular injury, in shock, we



performed 36 operations of a different nature, which is presented in Table 3.

Table 3. The nature of the operation for vascular wounds

Locale-damage denium	Operations on vessels					
	Boco howl the seam	Circus-lar-ny the seam	Autovenous shunt	Prosthetics dying	Amputation	Re-knitting
Region shoulder	1	5	3	4		4
Region shins						1
Region hips	3				1	3
Nadkluchic region	1					
<b>Beam region</b>						2
Ulnar region						7
Areas shins						1
<b>Delays luchny</b>						1
<b>Total:</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>19</b>

Ligation of the vertebral artery, when it is injured in the first segment, is performed from a typical supraclavicular or vertical approach. When an artery is exposed on the left, the thoracic lymphatic duct may be tied. Ligate, all damaged lymphatic tributaries. The artery is isolated along its entire length, from its mouth to the entry into the opening of the transverse process of the C6 vertebra, and ligated. Operations for injured vertebral artery, in the second segment, in case of impossibility of ligation of the proximal segment of the transected artery, the canal of the transverse processes can be sealed with wax, tamponed with muscles. In the operation of wounding the vertebral artery, in the third segment, bleeding from the ends of the vertebral artery can be stopped by tamponing the muscle with deep

sutures, closer to the mastoid process of the temporal bone. In this leaf, the vertebral artery is most superficially located in relation to the skin. In this case, the bleeding is stopped by the imposition of a vascular suture. The vascular suture is one of the most important stages of vascular reconstructive surgery. However, very often the imposition of a vascular suture is the main stage, the essence of reconstructive surgery. The advances in vascular surgery are largely associated with the development and improvement of the vascular suture technique. When applying a suture, it is necessary to take into account the following basic provisions: sufficient mobilization of the vessel; thorough exsanguination of the operating field with temporary clamping of the proximal and distal parts of the vessel. Further, the suture is applied

using special instruments and atraumatic needles, which ensures minimal trauma to the vessel wall, especially intima. The suture is applied through the weight layer of the vessel wall. The ends to be stitched should touch along the seam line with their inner sheath. The suture material should not enter the vessel lumen. This is to ensure minimal contact with blood, in order to avoid thrombosis. The needles are inserted from the edge of the vessel approximately 1 mm from the edge of the vessel, the seam stitches are placed at a distance of 1-2 mm, one from the other.

Vascular ligation-19; side seam-5. Of these: the lateral suture of the venous vessels was simultaneously imposed. Circular seam-4; autovenous shunting-3; prosthetics-4 primary amputation-1 patient. At the same time, 7 patients underwent an epineural suture. To solve tactical issues in a patient's state of shock, we were guided by an assessment of the severity of the condition; the nature of the injury and the progression of ischemia. Early reconstructive surgeries for rapidly progressing ischemia and shock, along with anti-shock measures, were performed by us in 36 patients. Severe shock, massive tissue damage and irreversible ischemia were indications for limb amputation in 1 (2.7%) patients. Arrosive bleeding was observed in only one patient. In 24 (94.4%) patients, wound healing was primary, in 2 (5.5%) patients, wounds healed by secondary intention.

#### **CONCLUSIONS:**

1. The use of angiography and MSCT has an effective treatment for the early diagnosis of traumatic vascular injuries.
2. Surgical tactics for reconstructive operations consists in stitching the circular end-end suture, even in cases of diastasis reaching up to 3 cm. With a large vessel defect, it is necessary to use autovenous bypass grafting or vascular prosthetics

3. The high efficiency of the timely use of reconstructive and restorative operations - autovenous bypass grafting of vessels after stabilization of hemodynamic parameters depends on the degree of traumatic and hemorrhagic shock by means of endovascular complete occlusion of the vessels.

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## THE SULTAN OF HADITH SCIENTISTS - IMAM AL-BUKHARI

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### ABSTRACT:

**This article provides information about Imam al-Bukhari and his work Al-Jame 'as-Sahih, who achieved great success in the science of hadith in the ninth century and was awarded the title of "Amir al-Mu'minin" in the Muslim world.**

**KEYWORDS:** Imam al-Bukhari, Bukhara, science of hadith, Sahih Bukhari, exile, Hijaz, Mecca, Medina, Samarkand, Khartang, monument, international center, ethics, family.

### INTRODUCTION :

Imam al-Bukhari, the founder of the authentic direction in the science of hadith, a mature and well-known hadith scholar, has earned respect in the Muslim world through his knowledge among talented, intelligent scholars, teachers and friends, described as "Amir al-Mu'minin" and "Imam al-Muhaddithiy". considered to have a sharp mind. Imam al-Bukhari's real name is Muhammad, his surname is Abu Abdullah, his nickname is sometimes Imam al-Muhaddasi (imam, leader of the muhaddiths), sometimes Amir al-mu'minin fi-l-hadith (Amir of the science of hadith), and his nephew Muhammad ibn Ismail ibn Ibrahim ibn al-Mughirah ibn Bardazbeh ibn Bazazbeh.

Imam al-Bukhari was born in Bukhara, which has long been famous for its scientific and cultural development. In this magnificent city, Bukhara, on the 13th day of the month of Shawwal, 194 AH, after the salawu-ul-Jumu'ah (July 21, 810 AH), the Imam of all the hadith scholars, the Prophet (peace and blessings of Allaah be upon him) , Imam al-Bukhari, who

gave them eternal life, was born. Imam al-Bukhari began studying hadith at the age of 10. At the age of 11, he began to find fault with some of his teachers. Abu Ja'far Muhammad ibn Abu Hatamal al-Warraaq writes, "When I heard al-Bukhari say, 'The inspiration for memorizing the hadiths came to me when I was in primary school,' I said, 'How old were you then?' I asked. 'I was 10 years old, maybe even younger," he said. It is clear from this example that Imam al-Bukhari memorized the hadiths from a very young age and took a special interest in them.

### MAIN PART:

Al-Bukhari first studied the science of hadith in Bukhara. He studied the science of hadith from the hadith scholars Muhammad ibn Sallam al-Poykandi (777-839) and Abdullah ibn Muhammad al-Masnadi al-Jufi (died 843) who lived in this city and memorized many hadiths.

According to sources, al-Bukhari studied all the famous books of his time until he reached puberty, and at the age of 16 he went on Hajj with his brother Ahmad and his mother. He studied Islamic teachings, more hadith, from prominent scholars in major cities such as Balkh, Basra, Kufa, Baghdad, Homs, Damascus, Cairo, Mecca and Medina. Al-Bukhari spent most of his life as a foreigner in Mecca and Medina. Here, while studying, he began to gather information for his works. The Syrian scholar Jamaliddin al-Damashqi, in his book The Life of Al-Bukhari, wrote: "When I was eighteen, I wrote The Problems of the Companions and Subordinates, and later The Great History. At that time, I was living near the tombs of the Prophet in Madinah. I used to

write mostly on moonlit nights. There were very few names in history that I didn't know. But I didn't want the book to be long ... " This information testifies to al-Bukhari's great zeal and courage in the path of science. Wherever Al-Bukhari went, his main goal was to study science, and he was there with the sheikhs, scholars and nobles. For example, al-Bukhari visited Baghdad, the capital of the Arab Caliphate, eight times, each time with the jurist Imam Ahmad ibn Hanbal, where he studied hadith. Imam al-Bukhari recalls in one of his works, "I wrote the hadiths from 1,080 hadith scholars." Years later, he returned to his native Bukhara. The people of Bukhara also welcomed the great muhaddith. Here al-Bukhari taught students the science of hadith. Abu Tohirhoja Samarkandi writes about the last days of the great muhaddith in his book "Samaria": "He came to Khartang (now Poyariq district). It was here that the mercy of Allah was bestowed ... Imam Muhammad died in 256 (869 AD) on the night of Eid al-Fitr after the night prayer. In honor of independence, a monument to Imam al-Bukhari will be erected in the village of Khartang, Chelak district of Samarkand. This monument was erected on the site of the mausoleum of the scholar in accordance with the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated April 29, 1997 "On the celebration of the 1225th anniversary of the birth of Imam al-Bukhari according to the Hijri-Lunar calendar." The complex was opened in 1998. The memorial complex will serve first as a shrine, a shrine, and then as a place for daily, Friday and Eid prayers. The total area is 10 ha. The complex includes a mausoleum, an administrative building, a mosque, a library, a research room and other ancillary rooms. Up to 1,500 people can pray in the mosque and on the porch. On the right side of the altar inside the mosque hangs a piece of kiswa-kabapush, presented to the First

President of the Republic of Uzbekistan Islam Karimov by the King of Saudi Arabia Fahd ibn Abdul Aziz.

The Imam Bukhari International Center was established on November 4, 1998 to study and promote Bukhari's rich heritage. Imam al-Bukhari has left a valuable and rich scientific legacy for generations, and he has written more than 20 works. In the library of the Muslim Religious Board, the scholar's "Al-Jam as-Sahih" ("Reliable Collection"), "At-Tarikh al-Kabir" ("Great History"), "At-Tarikh as-Saghir" (" Little History ", " Al-Qiraatu khalfa-l-Imam "( " Reading behind the Imam "), " Raf'ul-yadani fis-Salati "( " Raising both hands in prayer "). ancient copies are available.

Imam al-Bukhari's At-Tarikh al-Awsat (Middle History), At-Tawsir al-Kabir (The Great Tafsir), Al-Jame al-Kabir (The Great To ' It is known from history books that he wrote a number of books, both large and small, such as "Kitabul-Khiba" ("The Book of Gifts"). Imam al-Bukhari's most famous work in the Islamic world was undoubtedly Al-Jame 'as-Sahih (The Trustworthy Collection), also known as Sahih Bukhari. Bukhari has been writing this work for 16 years. The most important aspect of it is that the hadith scholars before Imam Bukhari did not selectively include all the hadiths they heard in their collections. Imam Bukhari, on the other hand, divided the hadiths he heard from different narrators into sections, divided them into believers, and created a separate book. Al-Bukhari's disciples say that he memorized one hundred thousand sahih (trustworthy) and two hundred thousand inaccurate (doubtful) hadiths and selected Al-Jame 'as-Sahih from about six hundred thousand hadiths. The scholar Ibn Salah (d. 1245) states that the number of authentic hadiths included in this work of al-Bukhari is 7,275, including repeated ones, and 4,000 hadiths that are not repeated.

Al-Bukhari's Al-Jame 'as-Sahih is the first Sunni-recognized Sihahi Sitta (Six Sahih Books). According to Islamic scholars, Al-Jami 'al-Sahih is more eloquent than previous collections of hadith. The author has compiled not only hadiths concerning the laws and customs of his contemporaries, but also hadiths on the biography of Muhammad and his Companions, and even on the historical and ethnographic aspects of the period in which the Prophet lived. In Al-Jame 'as-Sahih, the hadiths of the Prophet (peace and blessings of Allaah be upon him) include "Faith," "Purification," "Prayer," "Zakat," "Hajj," "Marriage," "Divorce," and the Book of Trade. It is divided into 100 chapters, such as the Book of Peace, the Book of Testament, The First Creation (ie, The Origin of the Universe), Jihad, The Angels, and The Wisdom of Water. In each chapter, the hadiths on the subject are narrated with a reliable source of narrators. The hadiths included in Imam Bukhari's collections are not limited to reflecting the general rules of Islamic teaching. They are a set of true human qualities and exemplary disciplines such as love, generosity, openness, respect for parents, women and adults, kindness to orphans, compassion for the poor, love of country, diligence and honesty. They provide guidance, advice and advice on what is good, what is bad, what to do, what to refrain from, which are of educational value to the people of our modern society, especially the younger generation.

In Sahih Bukhari, there are many exemplary hadiths about the family - the relationship between husband and wife, parents and children, brothers and sisters. In particular, Book of Manners, Chapter 2. Who deserves to be treated well? Abu Hurayra narrated that a man came to the Messenger of Allah, may Allah bless him and grant him peace, and said, "O Messenger of Allah, who has the right to treat me well?" They asked. The

Messenger of Allah, may Allah bless him and grant him peace, said, "Your mother!" They said. He said, "Who else?" They asked. The Messenger of Allah, may Allah bless him and grant him peace, said, "Your mother!" They said. He asked, "Who else?" The Messenger of Allah, may Allah bless him and grant him peace, said, "Your father." They replied.

Chapter 3. He does not jihad unless his parents agree. It is narrated on the authority of 'Abdullah ibn' Amr that his brother said to the Prophet, may Allah bless him and grant him peace, "I want to fight." The Messenger of Allah, may Allah bless him and grant him peace, said, "Do you have parents?" He said, "Yes." The Messenger of Allah, may Allah bless him and grant him peace, said, "Serve your parents and please them, and then strive." They said.

Chapter 11. About the sin of a man who is ungrateful to his relatives. Jubayr Ibn Mut'im heard the Messenger of Allaah (peace and blessings of Allaah be upon him) say, 'A person who does not harm his relatives will not enter Paradise.

Chapter 24. The virtue of a person who takes care of an orphan. It is narrated on the authority of Sahl ibn Sa'd that the Messenger of Allah, may Allah bless him and grant him peace, said, "I and the one who took the guarantor of the orphan and I will live side by side in Paradise." The great thinker and hadith scholar Imam al-Bukhari has extensively addressed the issue of human morality in his works.

While enumerating the qualities that are necessary for a person to reach moral maturity, the scholar also clearly shows the flaws that everyone should maintain and that lead to degradation. It is a mistake to say that the ideas of human morality in the legacy of Imam al-Bukhari are only acts of worship or religious practice, because the qualities he enumerated are universal values that are recognized by all mankind and necessary for every human being.

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## USING THE POWER POINT PROGRAM IN TEACHING THE SUBJECT HISTORY OF STATEHOOD OF UZBEKISTAN

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### ABSTRACT:

**The rapid development of computer technology is also expanding its technical, technological and functional capabilities. Having didactic potential creates conditions for purposeful and effective use of computer technology in the modern educational process. Today, Power Point is actively used in teaching-learning process. This program helps to shift from traditional education to innovative education. Consequently, textual learning information, which is boring for today's student, is converted into a virtual form.**

**KEYWORDS: computer technology, computer programs, Power Point, textual learning information, virtual learning information.**

### INTRODUCTION:

The era of globalization is creating conditions for the rapid exchange of information in all areas. The role and place of computer technology in the rapid transmission of information, its rapid dissemination in a short period of time is incomparable. The technical, technological and functional capabilities of computer technology allow people to achieve efficiency in the search, analysis, processing, use and transmission of information. Besides, the available capabilities of computer technology make it easy and quick for users to adapt information to a specific audience. In this regard, in recent years, special attention has been paid to the targeted, effective use of computer technology in education.

It is expedient to rely on an innovative approach in the organization of modern education as opposed to traditional teaching. The essence of the innovative approach is evident in "focusing on the active learning of the individual's cognitive activities, adapting the educational process to the needs and requirements of the individual, ensuring that learning allows the individual to express himself" [4, 242]. This approach is based on innovative changes in teaching, i.e. teaching based on the new generation of textbooks, demonstrating the textual learning information in a visual form (pictures, diagrams, tables, schemes, graphic organizers); the choice of forms, methods, tools and technologies of teaching, that help to increase student learning activity, requires achieving "originality, that creates a teacher-student relationship in the learning process" [6, 839].

The innovative approach is also determined by teachers using modern computer technologies in teaching process. Therefore, "modern computer technologies allow educators to create a completely new method of teaching using virtual reality on the principle of interactivity" [1].

The technical, technological and functional capabilities of computer technology are reflected in the fact that they have specific computer programs that help to effectively conduct the educational process. Based on studying the existing capabilities of computer technology in the process of pedagogical and scientific-pedagogical activity, use of PowerPoint (© Microsoft Corp.) in teaching the subject "History of Statehood of Uzbekistan"

was found effective in achieving mastery of the materials by students, monitoring their learning activities, assessing their level of knowledge and skills. Further will be discussed the role of this program in improving the effectiveness of education, improving students' learning activity, identifying students' level of knowledge in a short period of time and assessing their skills.

The Power Point program (© Microsoft Corp.) is provided in the Microsoft Office package, which serves to prepare and demonstrate presentations in a quality manner [2]. It should be noted that Power Point is available not only in the Microsoft Office package, but also separately. The program provides a wide range of business presentations, Internet presentations, lecturers, products for sale [2], as well as the preparation of various projects of economic, financial, social and cultural nature, the results of which are presented to the public or to a group of people in a certain sphere.

The product prepared using this program is called a presentation, which is demonstrated on a set of slides. In other words, a presentation is a demonstration of information using slides. If the information is placed on separate pages in Word, it is placed on slides in Power Point.

Presentations are files created using Power Point. These files are usually stored in the "My documents" folder [5].

It is known that in computer programs information is presented in various extensions. In Word it is .doc, in Excel it is .xls, in electronic documents, e.g. Portable Document Format it is .pdf, while Power Point is saved in .ppt.

Working in Power Point has a number of advantages: placing both text and graphic information, pictures, tables and diagrams on slides, easy change of fonts, writing style and position of slides, removal of unnecessary

information, entering new information, presentation design (background, text color, size and shape), the possibility of sending the presentation via email or Telegram and so on.

The following computer equipment (devices) is required for demonstrating the presentation: a computer monitor, projector, slide projector, web page on the Internet or intranet, and printer.

Power Point has a collection of slide layouts, backgrounds, color schemes, slide samples, and templates.

The structure of computer technology, the improvement of its design, the expansion of its technological capabilities, in turn, have created the conditions for the technical, technological and functional development of Power Point. To date, 97, 2000, 2003, 2007, 2010, 2013, 2016, 2017 and 2019 models of Power Point have been developed and widely used in practice.

In the course of the research, presentations were made on all topics ("Introduction. The concept of 'statehood' and its origin", "The establishment of the principles of governance and the formation of states", "Types of ancient statehood and form of governance in Uzbekistan", "Statehood and governance in the early Middle Ages (until the middle of the V-VIII centuries)", "Advanced medieval statehood and governance", "The development of statehood in Transoxiana and Khorasan during the reign of Amir Temur and the Timurids", "Uzbek khanates in the late Middle Ages: administrative structure and public administration", "Establishment of the colonial rule of the Russian Empire in Turkestan", "Uzbekistan is part of a dictatorial Soviet state", "Establishment of the independent state of Uzbekistan") included in the working curriculum of the subject "History of Statehood of Uzbekistan".



Their didactic requirements for preparing presentations in Power Point - the full coverage of the content of the learning material, the number of slides to meet the time budget of the learning process, visual demonstration of textual information on the slides, concise and clear presentation of logical information, logical unity between the slides, interconnectedness, design – all these requirements tend to meet the aesthetic needs of students, to satisfy a solid theoretical and methodological basis of teaching.

Presentations on the subject “History of Statehood of Uzbekistan” [7, 233-238] have the following structure: information about the topic and the teacher who organizes the lesson, curriculum, basic concepts, information about the curriculum, questions, assignments, tests.

Assessment of students’ initial mastery level of learning materials was achieved by avoiding using the textual information in making presentations, visualization of textual

information, interactive communication of the teacher with the audience in the delivery of learning information, ensuring problem-based character of the teaching material as well as using didactic games.

Below is given the structure of the presentation on “Development of statehood in Transoxania and Khorasan during the reign of Amir Temur and the Timurids”.

1<sup>st</sup> slide - The development of statehood in Transoxania and Khorasan during the reign of Amir Temur and the Timurids.

Lecturer: H.K.Boymirzayev

2<sup>nd</sup> slide – Lesson plan:

1. Basics of public administration of Amir Temur's government.
2. Governing bodies and positions.
3. The military system of Amir Temur's state.
4. The essence of legal relations in Amir Temur's state.

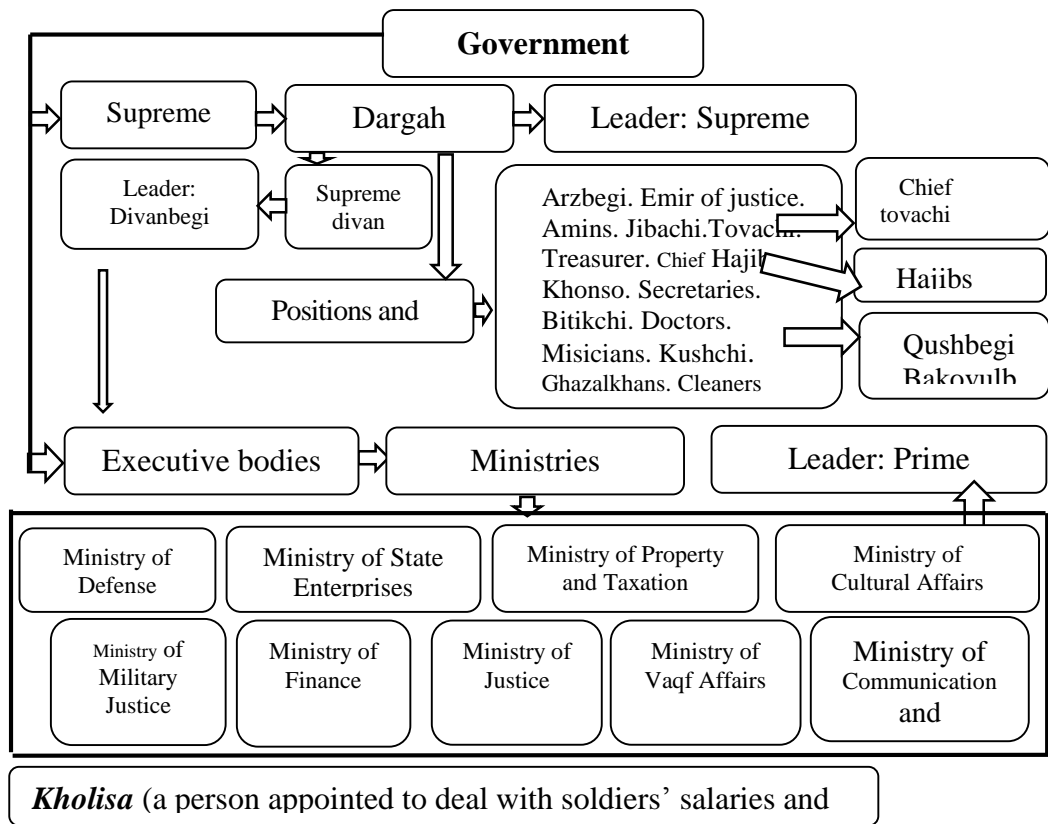
3<sup>rd</sup> slide - Portrait of Amir Temur



[3, 1618]

Amir temur (1336-1402)

4<sup>th</sup> slide. Government agencies



5<sup>th</sup> slide. Types of taxes

Types of taxes		
1. Hiraj.	6. Sahibi jamona	11. Mal utloq.
2. Sari shumor (jizya).	7. Muhassilona.	12. Suvloq.
3. Avarizot.	8. Zabitona.	13. Zakat.
4. Mirobona.	9. Tanobona.	14. Tagjoy.
5. Dorughona.	10. Mal sardarakht.	

6<sup>th</sup> slide. The system of religious authority

- The system of religious authority:**

  1. Shaykh al-Islam.
  2. A'lam.
  3. Qozikalon.
  4. Sadri a'zam.
  5. Mukhtasib.
  6. Qoziyi akhdos.
  7. Qozi askar.
  8. Mudarris.
  9. Mutavalli.

7<sup>th</sup> slide. Social strata

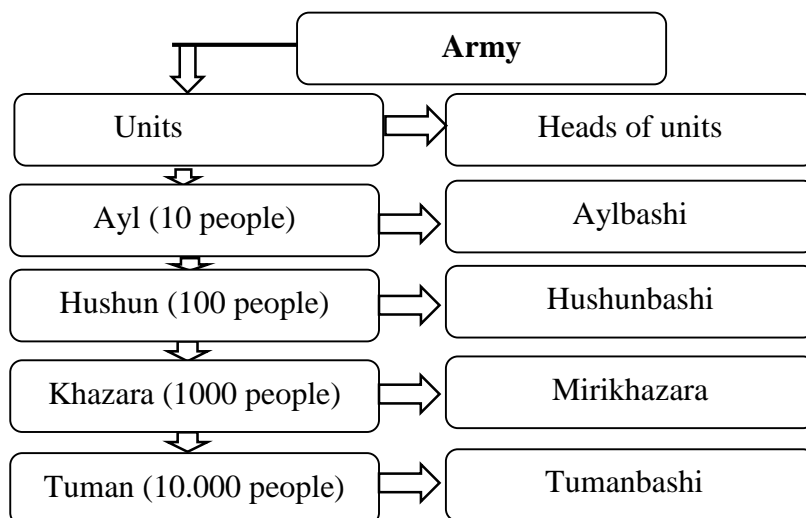
- Social strata:**
1. Sayyids, scientists and sheikhs.
  2. Scientists with great experience.
  3. Practicing religious people.
  4. The troops of the army, sarhang and emirs.
  5. Soldiers and population.
  6. Counselors, wise and prudent people who have a thorough knowledge of public administration.
  7. Ministers, secretaries, chief of divan.
  8. People with knowledge of medicine, astrologers and engineers.
  9. Muhaddis and historians.
  10. Sufis and arifs.
  11. Craftsmen and artists.
  12. Foreign tourists and traders

8<sup>th</sup> slide. Positions and titles

**Positions and titles:**

Amin. Arzbegi. Bakovul. Bakovulboshi. Bovarchi. Bakhshi. Bitikchi.  
 Vezir. Daftardor. Divanbegi. Dorugha. Dodkhokh. Jarchi. Juyban. Zabit.  
 Ikhtisabchi. Zinbardor. Inaq. Ichki. Iqto. Yasaghlik. Kukeldash. Kulu.  
 Kalantar. Kutval. Kuragan. Mavkab. Makhdi aliya.  
 Majlisnavis. Mirakhur. Mirab. Mukhtasib. Agha. Ataliq.  
 Pervanachi. Pasban. Sadr. Sadri a'zam. Sahibi divan. Tavachi.  
 Tarkhan. Uyughlan. Khazinador (Treasurer). Khattat. Hajibs. Chuhra.  
 Chuhrabashi. Shaykh al-Islam. Shikavul. Shikhna. Shukurchi. Yurtchi. Yasaul.  
 Qazi. Qurbashi. Qushchi (Qushbegi). Qopuchi. The guard. Farrosh (Cleaner)

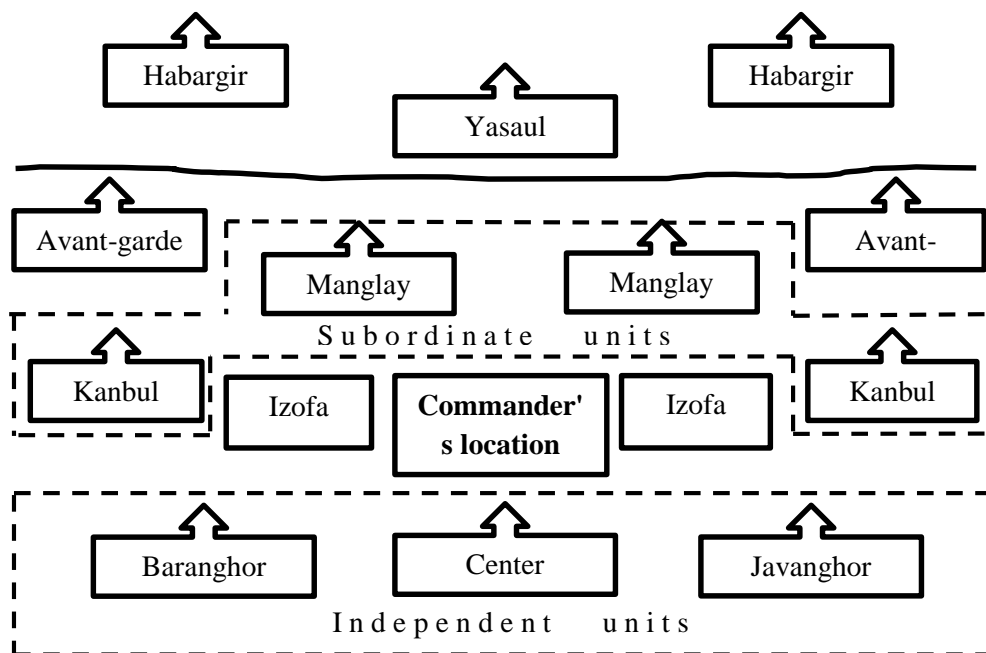
9<sup>th</sup> slide. Amir Temur's army divisions



10<sup>th</sup> slide. Provision (supply) of soldiers

<b>Military supply</b>		
A soldier	10 soldiers	2 horsemen
annual food supply; bow; thirty-arrow sadaq; armor; spear; shield	a tent; boiler; hoe; sickle; hammer; awl; 2 shovels; 100 needles; rope; a processed leather	a reserve horse

11<sup>th</sup> slide. Arrangement of units in Amir Temur's army



12<sup>th</sup> slide. The capital – the gates of Samarkand

**The capital – the gates of Samarkand**  
 Okhanin, Sheikhzada, Chorsu, Karizgakh, Suzangaran, Feruza

13<sup>th</sup> slide Questions (blitz poll):

1<sup>st</sup> group

1. The supreme body in A.Temur's state organization under Dargah –
3. Kholisa –
4. Number of social strata –
5. Hushun –
6. Tumanbashi –

2<sup>nd</sup> group

1. The Head of Dargah –
2. Executive bodies –
3. Consists of 9 positions –
4. Ayl –
5. Mirikhazara –
6. The unit that goes in front of the army –

14<sup>th</sup> slide. Study assignments

1 <sup>st</sup> group	2 <sup>nd</sup> group
Mark the placement of the following units in Amir Temur's army during a battle: Habargir, Avant-garde, Yasaul, Commander's location, Izofa, Baranghir, Javanghir, Center.	Describe the supply of 1 and 10 soldiers and 2 horsemen

So, the virtual representation of textual learning information ensures the effectiveness of education in modern conditions. However, the demonstration of learning materials in the form of textual information reduces the interest of students in them. Power Point encourages and supports teaching-learning process by facilitating the material presentation. Also, using PowerPoint improves the students' learning motivation, increasing authentic materials for study, encouraging interaction between the teacher and the students. The template provided is designed to default to good presentation criteria such as the number of lines of information in each slide and appropriate font sizes. The use of the default templates can improve the clarity and the arrangement of a presentation. This program has also advantages in the sense that the icons used are very simple because they are similar with those in the Microsoft Word. In this way, the users can create an instruction of language without studying this program previously.

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## USING A MODULAR APPROACH IN THE CREDIT SYSTEM OF TRAINING

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### ABSTRACT:

**At the same time, it is extremely important to provide motivational support for the educational process, which is carried out directly in the process of facilitating the teacher's activities or indirectly through information and instrumental support. An important element of modular training is the control system, which increases its importance in the credit system. It is advisable to increase the emphasis on intermediate control, gradually translating it into self-control. This control system allows you to identify: the presence or absence of difficulties in independent learning of the material and the causes of difficulties; the need for teacher assistance; the preferred form of interaction with the teacher; subjective assessment of the course of training, etc. Feedback provides rapid response to "failures" in the educational process through the correction of forms and methods of work. Thus, the module method, which allows for the systematic expansion of self-governing functions of students, is one of the most effective methods of teaching in the credit system of education.**

### INTRODUCTION:

In connection with the transition to the credit system of education, one of the main tasks at the University today is the selection of new forms and methods of training that allow not just to give the necessary knowledge, but to include the student in the system of continuing professional education

and self-education. A special place among teaching methods is occupied by the use of a modular approach in teaching. However, while a large number of review materials are devoted to the use of credit units in universities in Europe and other countries, much less attention is paid to the disclosure of the modular approach.

For the first time, the technology of modular training was applied in higher education institutions in the USA and Germany. England and Sweden in the 60s of the XX century. The main provisions of modular training are described in the works of T. V. Vasilyeva, A. A. Verbitsky, V. and M. Goldschmidt, J. Russell, M. A. Choshanov, P. A. Yutsevichene, and others.

The semantic meaning of the combination "modular training" is associated with the international word "module" (Latin *modulus*), the main meaning of which is a functional node [1].

The essence of modular training is that the student can work more independently or completely independently with the individual curriculum offered to him, which contains a target program of actions, a Bank of information and a methodological guide to achieve the set didactic goals. It is important that the module method is one of the most effective methods of self-learning, allowing it to be implemented with the regulation of not only the pace of work, but also the content of the training material.

The main differences between modular training and other types of training are the following:

- The content of training is presented in complete, independent, complex modules that are both a Bank of information and a methodological guide for its assimilation;
- Interaction between the teacher and the student in the educational process is carried out on a fundamentally different basis – with the help of modules, students are provided with a conscious independent achievement of a certain level of preliminary preparation for each pedagogical meeting;
- The very essence of modular training requires the inevitable observance of priority subject-subject relationships between the teacher and students in the educational process [2, p. 4].

The following facts are of great interest:

- The breakdown of the mastered material into completed parts (modules and its elements), well correlates with the credits of the European training system;
- Filtering out information that is "superfluous" for this particular type of work, leads to time savings and makes it possible to include in the course material that allows students to effectively form their cognitive independence;
- Maximum individualization of progress in training contributes to the consideration of individual, age-related characteristics and level of training of students, the organization of the process of independent cognitive activity based on their subjective experience.

Many authors highlight the following principles of organizing modular training: parity, dynamism, system quantization, problem-solving, efficiency and efficiency of knowledge, cognitive visualization, reliance on errors, saving educational time, etc. All of them are significant in one way or another.

The principle of motivation is aimed at stimulating and creating conditions for self-stimulation of cognitive activity. One of the ways of its implementation is the

organization of interaction between the teacher and the student, which is regulated by the principle of parity.

The principle of system quantization follows from the requirements of the theories of compression of educational information, which include elements of meaningful generalization, the theory of didactic unit's enlargement, and cyclo-block technology.

The principle of efficiency and efficiency of knowledge allows you to implement a competency-based approach to training.

The above-mentioned principles of modular training allow us to identify the structural components of the module in the credit system of training, which allow students to form independence both in the classroom and in the framework of independent work:

- Learning goals that include motivational, content, and activity components;
- Information support implemented during the educational process in the form of lectures, laboratory and practical classes, independent classroom and extracurricular work of students;
- Tools that include the target program of actions of the student; recommendations of the teacher on the implementation of the target program of actions; consultations of the teacher;
- Motivational support that offers the maintenance of cognitive motivation at a high level;
- A system for monitoring the implementation of goals, including a self-monitoring system.

The motivational component of the goal will reflect the orientation of the educational process not only to the formation of a stable system of motives of students necessary for successful cognitive activity, but also to the development of their ability to self-regulate their motivational sphere.

The cognitive component allows us to reflect the need not only for the development of special (subject) knowledge, but also knowledge related to the psychological and pedagogical foundations of cognitive independence; the development of intellectual abilities at the planning stage of the module.

The competence approach, which is an integral part of the credit system of training, determines the introduction of the activity component of the module's goal, which is formulated in the form of clearly identifiable actions: to define, compose, characterize, explain, etc.

The goals, refracted through the prism of a modular approach, allow you to create information, methodological and consulting support that allows the student to work independently with the educational material, using it completely or choosing fragments from it in accordance with their educational needs.

At the same time, it is extremely important to provide motivational support for the educational process, which is carried out directly in the process of facilitating the teacher's activities or indirectly through information and instrumental support.

An important element of modular training is the control system, which increases its importance in the credit system. It is advisable to increase the emphasis on intermediate control, gradually translating it into self-control. This control system allows you to identify: the presence or absence of difficulties in independent learning of the material and the causes of difficulties; the need for teacher assistance; the preferred form of interaction with the teacher; subjective assessment of the course of training, etc. Feedback provides rapid response to "failures" in the educational

process through the correction of forms and methods of work.

Thus, the module method, which allows for the systematic expansion of self-governing functions of students, is one of the most effective methods of teaching in the credit system of education.

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## BIOTECHNOLOGY OF BIOLOGICAL AND CHEMICAL TREATMENT OF WATER FROM THE FACTORY OF BUKHARA OIL REFINERY

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### ABSTRACT:

**Wastewater is often used in oil refining, and the waste product of petroleum products is discharged into the sewage system. As a result, wastewater is damaged and rendered unusable. Not only water but also aquatic organisms and plants are killed or damaged. In recent years, the creation of waste-free biotechnology is one of the current challenges. This article discusses the biological and chemical treatment of wastewater from an oil refinery.**

**KEYWORDS: Water treatment, sewage, industrial enterprises, domestic enterprises, technology, biological treatment, biotechnology.**

### INTRODUCTION:

Water treatment is a set of technological processes designed to regulate the quality of water entering the water supply system from water sources (rivers, lakes, reservoirs, reservoirs, etc.). This includes wastewater treatment from industrial and domestic enterprises. It is carried out with the help of engineering structures in water supply and sewerage systems, enterprises, as well as by biological and chemical methods.

Surface natural water sources (rivers, lakes, etc.) are cooled, refined, and

decontaminated before they are discharged into the pipeline. During treatment and clarification in treatment plants, suspended and colloidal particles are submerged in water, treated with aluminum sulphate and ferric chloride in special containers, and the water is filtered through gravel, sand, and sometimes porous ceramics. To disinfect clear water (kill various microorganisms and viruses), liquid or gaseous chlorine, hypochlorites - NaClO, Ca (SYU) 2 and chlorine dioxide S1O2, chlorinated lime are added to neutralize distilled water and groundwater, as well as ozone and Ultraviolet rays are also used. Mercury-quartz or argon-carbon lamps are used. If the water is hard (the total amount of calcium and magnesium salts is higher than normal), it will soften. Groundwater is often de-ironed by aeration (enriched with atmospheric oxygen). Lime, sodium aluminate NaAlO<sub>2</sub>, and sometimes burnt dolomite are used to desilicize water (to reduce the amount of metasilicic acid H<sub>2</sub>SiO<sub>3</sub> and its salts). It is desalinated or ionized to remove other dissolved salts in the water. desalinated. Water is degassed to remove hydrogen sulfide, methane, radon, carbon dioxide and other dissolved gases. To reduce fluoride in the water, the water is filtered through activated alumina. If water is found to contain radioactive substances, it is decontaminated. If the water has an unpleasant odor, it is treated with activated charcoal,

ozone, potassium permanganate or chlorine oxide.

Sewage treatment (industrial, domestic and residential wastewater) and stormwater treatment are important parts of nature conservation. Mud, colloids and dissolved substances in wastewater are precipitated in clarifiers, harmful substances are neutralized by biological methods, and wastewater is treated at treatment plants. There are also physicochemical, thermal and other methods of water purification.

At a number of industrial enterprises in Uzbekistan, a large number of different industrial wastes, especially wastewater from the separation of gold and other metals, are unusable, stored in special basins, and their volume is increasing year by year, occupying large areas. . As a result, the protection of the environment, the creation of environmentally friendly technologies for industrial wastewater treatment remains one of the most pressing issues of modern biotechnology. Therefore, the development of effective and inexpensive methods of wastewater treatment is one of the pressing issues of modern biotechnology. At present, the wastewater generated during the production process is still not treated and stored in special basins. This requires the development of environmentally friendly wastewater treatment technologies.

In our country, various industrial and industrial wastewater is treated with the help of representatives of higher aquatic plants, algae, *Bacillus*, *Pseudomonas*, *Bacillus cereus*, *Bacterium megaterium* and other bacteria, *Pseudomonas fluorescens* B-5040 (from pesticides, phenols, cyanides, heavy metal salts). ) cleaning methods are developed. In Russia, gold refineries have purified wastewater by adding ammophos as a food source and using the *L. minor*. The physical, chemical, biological, microbiological processes of wastewater treatment with the help of

higher aquatic plants - ryaska, azole, pistachio and eucalyptus, ion metabolism, accumulation in plant tissues were studied.

Biotechnology of wastewater treatment using higher aquatic plants has several advantages: first, the use of municipal wastewater instead of drinking water to dilute cyanide and rhodanide wastewater; second, no additional nutrient medium is required to grow eucalyptus, pistachio, ryaska, and azole; thirdly, the actual cost of treatment of municipal wastewater (labor, electricity, treatment facilities, disinfectants, etc.) will be saved; fourth, the biomass of higher aquatic plants grown in the treatment plant can be used to produce non-conventional energy sources (biogas, bioethanol, biodiesel); and finally, from the fifth treatment plant, the water treated with the help of high aquatic plants can be used for liquefaction of wastewater, for technological purposes in the enterprise or for irrigation of protective trees around the treatment plant.

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## THE EFFECTIVE WAYS OF TRANSLATING CULTURE-SPECIFIC WORDS FROM UZBEK INTO ENGLISH

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### ABSTRACT:

Through this article, you can gain knowledge about the features of special words related to culture in the translation process, as well as the specific effective methods that occur in the translation process. Because the views of all educators and scientists on the translation process are also slightly different. In particular, there are a number of grammatical, lexical, including punctuation, differences in the translation of words that belong to the culture of each nation, ethnic group, mankind. Because of this, it is possible to understand how variable and constantly moving language is. In this way, it helps to understand the deep nature of the language. It is no secret that this article, created by the author, is aimed at a broader interpretation of the methods and ways of translation of specific terms, which are difficult for many scholars. In particular, it is safe to say that English, one of the foreign languages in the process of globalization, attracts today's young teachers with its originality, not to mention all the masters and masters of the field. In addition, in the process of translating from Uzbek to English or from English to Uzbek, you will find interesting ideas about the specific methods of translation of cultural concepts, such as qualities, attitudes, behavior. It is known that it affects the development of cognition during the winter and during school.

**KEYWORDS:** Features of language, advantages of translation, types of culture, ways of translation.

### INTRODUCTION:

"The future of our country, the future of our people, the prestige of our country in the world community, first of all, depends on how our children grow up, grow up and become human beings." We must never forget such a sharp truth. " [1]

It is known that in today's era of rapid development, the role of rapidly evolving innovative technologies is visible not only in one area, but also in all areas of the state: social, political, economic, and education, which serves as their basis. is thriving. In particular, each industry has its own creator, that is, the author of the idea, as well as a unique and appropriate creator of innovative technologies. For, no matter how strong and deep the world of thought of the state develops, there is no doubt that it will be the main criterion for its high and inexhaustible development in all respects.

It should be noted that the importance of any work carried out and put into practice in the field of education and the seal of eternity is the world of new ideas and innovative methods in making education stronger and more powerful. It is so important to see his face. Nowadays, one of the best ways is to increase the enthusiasm of the younger generation to learn foreign languages and to update a number of ways and means of acquiring them through organic and constantly moving contacts.

As a proof of our opinion, we must also acknowledge that a great translator said: "The variability of languages, the richness of unstable features, the tendency of languages to

novelty, any educator, any linguist, every which is the main factor that motivates a scientist to constantly work on himself, to constantly think, to constantly seek innovation.

#### MAIN PART:

The reason for this is that human perfection consists of the unexpected breadth and infinity of the world of thought. That is, the way in which the mind receives information, or the way in which language transmits information, also includes certain ways.

Indeed, it is important that education has methodological, pedagogical, psychological and cultural significance. It is no exaggeration to say that the existence of a methodological basis for the high growth of the next generation, the widespread use of methodological innovations, interactive pedagogical technologies and their practical application is, of course, the first prelude to success in education. Although the specificity of receiving and imparting knowledge is not enough, it sees the world as a product of the same truth. [2]

In addition, it is no secret that the expression of pedagogical principles through specific goals is a key factor in the correct understanding, assessment, and drawing of the ability of language learners. it's not. In particular, it is necessary for every pedagogue to have psychological, pedagogical, methodological, and practical skills, knowledge, and qualifications. The main reason for this is that the presence of features that are useful not only for language learners but also for students helps to increase students' knowledge, to show students the right way in the learning process, to show their unique abilities. serves as a large bridge in the detection.

At the same time, it is the most important tool in conveying students' attitudes to language learning through specific cultures

and habits. Naturally, each nation, ethnic group has its own cultural peculiarities and culturally significant aspects. The cultural interpretation of education is mainly based on a number of effective methods when thinking about translation. In particular, it should be noted that the translation of specific cultural terms and words is carried out at certain stages. [3]

✚ The uniqueness of translation also proves that words differ from other branches of education by their richness and depth of thoughts, ideas, and meanings. From this, it is clear that the owners of professional professions related to any language are the main criterion in conveying to the human heart attractive words of high quality and richness in all respects. This is because the language has an agglutinative nature, that is, the formation of new meanings through the addition of suffixes, and thus the uniqueness of the relationship between the listener, the speaker, the character, the characteristics of the character. used to describe. Of course, the skill of the translator is paramount in this process.

✚ As a clear example of this, from the views of our Methodist scholars Rogova, Yakubov, etc. on education, it is clear that in the field of translation it is necessary to recognize that the translator has all the potential, a broad outlook. That is, it is important for them to have the vocabulary and scientific secular enlightenment. In addition, it should be noted that the translation of cultural words from Uzbek to English may be complicated by the following:

- ✚ Grammatical compatibility;
- ✚ Lexically similar and contradictory aspects of words;
- ✚ Punctuation difference;
- ✚ Application of time;
- ✚ Know the essence of hierarchy;
- ✚ Know the essence of blocking;

✚ Specific expression of methodological aspects. [4]

It should be noted that there are several effective ways to overcome the difficulties listed above, which are also somewhat useful in finding solutions to these problems. They are:

- ✚ Know the level of the structural method;
- ✚ Importance of constructive method;
- ✚ Understand the basis and essence of grammatical equality;
- ✚ Understand the level of systematicity;
- ✚ Synonymous methods;
- ✚ Autonomic methods;
- ✚ Know the possibility of using intensive methods;
- ✚ Knowledge of extensively used words;
- ✚ Maximum knowledge of the methodology;
- ✚ Understand simultaneous translation methods;
- ✚ Know how to use the arts;

Thus, a deep understanding of the above methods leads to an understanding of some aspects of the art of translation, namely:

- ✚ In the structural method, mainly the structure and form of expression of sentences:
- ✚ Constructive method - mainly to know the definition and meaning of special indicators;

The method of understanding the basis and essence of grammatical equality - mainly the English interpretation of sentences differs significantly from the Uzbek interpretation. This is due to the adaptation of the times, including the presence of articles in English and not in Uzbek. To know that there are differences between English and Uzbek in modern times.

The way to understand the level of the system - to know, in particular, the systematization and comparison of specific terms, scientific terms, and scientific terms.

✚ Synonymous methods - mainly to know that the words that can be found in English and Uzbek have similar meanings and differ in spelling. For example: yuz, chehra in Uzbek; in English, start, commence, begin; important in Uzbek, essential, important, significant, necessary, basic, rudimentary;

✚ Anonymous methods - mainly to understand the differences between the English and Uzbek words and their content. For example, aka-uka;

✚ Intensive methods - in-depth knowledge of the scope of words as much as possible and the description of the synchronization with innovative innovations;

✚ Extensive methods - mainly the use of tools that help to understand the relationship of words with other areas. For example, pedagogy, philosophy, linguistics, psychology, methodology;

✚ Maximum knowledge of the method - to know and understand the importance of methods in the translation process. For example, the formation of a culture of correct assessment of the similarities and differences between the English style of speech and the Uzbek style of speech, and a focus on the careful use of words in its interpretation;

✚ Understanding the methods of simultaneous translation - it automatically means the direct attitude of the human mind to the translation process, and in this process significantly systematizes the levels of use of words;

✚ Know how to use the arts - both in English and Uzbek have their own unique and appropriate attractive, silent words, the effect of which is much longer or longer. be so close. For example, the appearance of the art of allegory in Uzbek as in English is expressed in terms of structural expansion or contraction; The art of proportionality is

the use of words in proportion to each other;

In short, through the process of translation, the learner develops both hidden and new abilities. For example, Gafur Ghulam's translation of "Mening o'g'rigina bolam" from Uzbek stories:

Sentabr oylarining oxiri, ilk kuz oqshomlaridan biri edi. Havo anchagina salqin. Biz yetimlar bir –birimizning pinjimizga tiqilib, bir –birimizni isitib uyquga ketganmiz. Qatorda eng so'nggi bo'lib, ona chumchuqday qora buvim yotardilar, u kishi saksondan oshib ketgan, noskash kampir edilar.

At the end of September, it was one of the initial autumn twilights. The weather air was rather cool. At that time we slept together. The black granny who lay on the last part of the line was like a mother sparrow, this person was a nasty old woman over the age of eighty.

Otamizning o'lganiga ancha yil o'tib ketdi. Bu yil -o'n yettinchi yilning ko'klamida onamizdan ham ajralib, shum yetim bo'lib qoldik. Biz to'rt yetimdan xabar olib turishga katta onam –onamning onalari Roqiyabibi kelib turibdilar. Bu kishini biz erkalab "qora buvi" deb ataymiz.

The death of our father exceeds many years. This year – in the vernality of 1917 we are also separated from our mother, we become a portentous orphan. Roqiyabibi, who is my mother's mother – grandmother, comes to take care of us – four orphans. We call this person like "black grandmother" in a pampering way.

– Huv, xudoyo urushi boshiga yetsin, qiyomat – qoyim degani shudir –da, a, o'g'rigina bolam –a. Ha, mayli, shu yetimlarning ham peshonasiga yozgani bordir. Xo'sh, endi o'zingdan so'ray. Axir, noilajlikdan –ku, shu harom yo'lga qadam

bosibsan, o'ziga to'qroq, badavlatroq odamlarnikiga borsang bo'lmaydimi?

– Oh, my God! The war eats their head! Ok, these orphans may have their own destiny. Well, I will ask you now. You have to step this unclean way due to helplessness, do not you go to the more wealthy people's houses?

–Hoy, aylanay, o'g'rigina bolam, boshimda shunday musibat turganda ko'zimga uyqu keladimi? Mana: olti oy bo'ldi, biror soat mijja qoqib uxlaganim yo'q. Kunduz kunlari garangday dovdirab yuraman. Biror yerga o'tib mizg'iganday qush uyqusi qilaman. Kechalari xayol olib qochib ketadi.

– Hey, my thief son, how could I sleep when this kind of grief had on my head? Here was: I had not snoozed in any hours for six months. I am completely dumbfounded by days. In many places, I try to have a nap like a bird. I imagined at night.

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## DYNAMICS OF ENZYME ACTIVITY IN SALTED SOILS

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### ABSTRACT:

**In the current era of globalization, soil condition is deteriorating year by year due to the use of soil for various purposes. Therefore, increasing the activity of enzymes in saline soils, enriching the soil with minerals is one of the main tasks. This article discusses how to increase the dynamics of enzymes in saline soils.**

**KEYWORDS: Irrigated grassland, green algae, mineral fertilizers, redox, enzymes.**

### INTRODUCTION:

The activity of the enzyme catalase on days 7 and 15 was studied in soil samples given green micro-algae and mineral fertilizers in irrigated meadow soils, where the catalase activity in primary soil when mineral fertilizers were used was 1.90 per 100 g of soil. in size, catalase activity was found to increase by 2.16 in 7 days. As this process continued, activity was observed to be 4.01 over 15 days. In an experiment using a green microwave suspension, it was found that the catalase activity increased to 3.2 ml / mg O<sub>2</sub>, and within 15 days, this figure rose to 4.95. It was observed that the catalase activity in the soil increased slightly when 50% of mineral fertilizers were added to the soil in

combination with the suspension of green algae.

This means that the activity of catalase, the main representative of the enzymes involved in the oxidation and reduction process in the soil, is directly related to the composition of the substances released into the soil.

Changes in soil enzymes and fertilizers used are closely related to soil and environmental conditions. The dependence of enzyme activity on the composition of fertilizers has been reflected in a number of scientific studies (Galstyan, 1965).

Experiments in Bukhara region showed that when 1 g of soil sample was applied with complete mineral fertilizers, the prosthetic activity corresponded to the amount of 0.310 mg / amine nitrogen, while the mineral micronutrients were added to green algae. When used in combination with dogs, these values are 0.590-0.720 mg / amine nitrogen. However, if the composition of the applied fertilizers is further enriched, ie the addition of plant residues and mineral fertilizers to the suspension of green microflora, the activity of the prosthetic enzyme in irrigated soils will increase ( 0.910 mg) can be seen. (Table 1)

Table 1. Protease activity in irrigated grassland alluvial soils

№	Experience	Peroxidase	
		7 days	15 days
1.	Soil + NPK (naorat)	8.99 + 0.110	7.96 + 0.09
2.	Soil + green algae (50%)	11.95 + 0.15	10.89 + 0.12
3.	Soil + green algae + NPK (50%)	12.64 + 0.19	11.90 + 0.14

In irrigated grassland alluvial soils, plant residues are rapidly degraded, and the oxidation reactions involved in the initial decomposition phase are closely related to the activity of peroxidase (Table 2) and then (polyphenol oxidase involved in their synthesis).

Table 2. Peroxidase activity in soil samples (per 100 g of soil / mg pupurgalline)

№	Experiment options	Peroxidase activity, in the amount of mg NH <sub>2</sub> in 1 g of soil
1.	Soil + NPK (100%)	0.310 + 0.003
2.	Soil + green algae + NPK (50%)	0.590 + 0.007
3.	Soil + biomass + NPK (50%)	0.720 + 0.09
4.	Soil + plant residue + green algae + NPK (50%)	0.910 + 0.01

Table 3. Activity of soil polyphenol oxidase enzyme in experimental samples (At the rate of 100 g of soil / mg purpurgallin)

№	Experience	Peroxidase	
		7 days	15 days
1.	Soil + NPK	3.84 + 0.08	3.84 + 0.08
2.	Soil + green algae	4.40 + 0.09	4.37 + 0.06
3.	Soil + green algae + NPK (50%)	5.25 + 0.1	5.10 + 0.08

In a number of experiments, especially when mixed with green microflora in

combination with mineral fertilizers, the increase in the activity of these enzymes is shown in Table 3.

Table 4. Enzyme activity in irrigated grassland under the influence of green algae

№	Experience	Duration of experiment (days)	Enzymes, M + m		
			Catalase, O <sub>2</sub> released in 3 minutes, ml / mg	Ureza, N, mg released from 1g of soil in 24 hours	Invertase, 1 g of soil, glucose formed in 24 hours, mg
1.	Primary soil (control)	-	1.95 + 0.04	0.21 + 0.010	0.6 + 0.02
2.	Unfertilized soil	30 60 90	1.14 + 0.02 0.99 + 0.01 1.09 + 0.0	0.19 + 0.01 0.12 + 0.01 0.95 + 0.01	0.10 + 0.01 0.07 + 0.004 0.20 + 0.01
3.	Soil + green algae + NPK (50%)	30 60 90	0.17 + 0.01 2.09 + 0.02 3.99 + 0.02	0.26 + 0.01 0.39 + 0.02 0.45 + 0.02	0.15 + 0.0011 0.27 + 0.01 0.51 + 0.02

The enzyme peroxidase, which is involved in the formation and rapid decomposition of humus, which is a complex substance and a substance of great importance in irrigated grassland soils, plays an important role. (Galstyan, 1958). This idea is reflected in our experiments. That is, if the activity of peroxidase and polyphenol oxidase enzymes in the soil where complete mineral fertilizers are applied is equal to 3.0-7.7 mg / purpurgalline per 100 g of dry soil for 15 days, then the mineral fertilizers in the same soil together with the addition of green algae, 5.1–11.9 mg / purpurgalline was observed.

This means that the breakdown and synthesis of humus, which is an organic substance in irrigated soil, is closely related to the activity of enzymes.



Catalase, protease, preoxidase and polyphenol oxidase activity were detected in the laboratory for 15 days. After three months, an increase in the activity of microorganisms and enzymes was observed in soil samples, but in the variant without fertilizer, the activity of catalase was almost unchanged. Urease and invertase activity were significantly altered. It was found that catalase activity increased by 2-3 times in 60-90 days in combination with green microflora and mineral fertilizers in the soil (Table 4).

In the non-fertilized version of the experiments, it was observed that the catalase activity was almost unchanged for 90 days. The activity of urease and invertase enzymes was significantly altered at 90 days compared to the 30-day experiment. During the experiment, it was found that catalase activity increased 2-3 times in 60-90 days compared to 30 days, when green mineral algae along with green microflora was used in meadow soil. Increased enzyme activity, especially urease and invertase activity, play a key role in the rapid decomposition of organic matter in the soil and its transition to a form that can be assimilated by plants. In conclusion, the activity of oxidation-reduction and hydrolytic enzymes (catalase, peroxidase, polyphenol oxidase, urease, protease, invertase, dehydrogenase) in alluvial moderately saline soils of irrigated meadows depends on the effect of applied bios. quantitative and seasonal variations were determined accordingly.

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# THE ROLE OF COMPUTER GRAPHICS IN DEVELOPING STUDENTS SPACE IMAGINATION

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## ABSTRACT:

According to experts, as a means of computer training, changes in the method and form of teaching are characteristic features of information technology. Therefore, the issue of identifying and generalizing the problems of teaching drawing in general secondary schools remains relevant.

Because there are a number of issues related to the use of computer graphics in the process of teaching spatial geometric objects and drawing, they have been theoretically sufficiently addressed in the course of our research.

**KEYWORD:** In the educational process, appropriate, teaching methods structure, students', learning, of methods, educational technologies.

## INTRODUCTION:

Comprehensive education of human has always been a dream of mankind, and our ancestors sought ways and means to teach the younger generation how to enlighten and cultivate, to lead them to perfection.

The national basis of pedagogy is the realization of the problems of education in connection with the national heritage of each nation, as well as universal, universal values. For example, the encyclopedic scholar Abu Rayhan al-Biruni wrote in the Book of Jewels: If a merciful endures hardships as the peace of men; if he gives to others what is given to him without stinginess, without giving to others, such a person is considered a brave man who is famous for such power; he is known for his

meeekness, gentleness, steadfastness of will, perseverance, humility, and greatness, and although he is not of this rank, he rises to the highest level. He is respected not by lineage, but by righteousness (with those qualities). "[3] Today, every field needs people who have been favored by A.R. Beruni. Because only such people contribute to the development of the country. This can only be achieved through strong education and training. It is necessary to bring up a perfect person based on the rich experience created by the people, the works of thinkers and scientists. Teaching technology (Figure 1.2.2) plays an important role in the educational process. By improving the stages of teaching technology, the implementation of modern teaching technology guarantees the effectiveness of the learning process. Teaching methods play an important role in the optimal organization and study of the learning process based on modern teaching technology.

## MAIN PART:

Therefore, in the implementation of modern teaching technology, the task is to implement modern educational technology by combining non-traditional teaching methods with the traditional teaching methods that make up the current teaching technology learning process.

Below we view the didactic tasks of some of the teaching methods:

- Didactic tasks of e-learning in computer-assisted learning technology - independent visual acquaintance with new material, independent mastering of new material, expansion and consolidation of knowledge,

self-control, independent learning, achievement of "free learning", the ability to distinguish basic concepts, formation of skills in working with electronic textbooks;

- Didactic tasks of the video method - skills of acquaintance and study of new material, consolidation, generalization, systematization, modeling;
- Didactic tasks of the method of mental attack - the acquisition, regulation, consolidation of knowledge, stimulation and formation of interest in learning;
- Didactic tasks of the method of demonstration - visual acquaintance with new material, study and understanding of the formation of concepts, observation, analysis, performance of actions;
- Didactic tasks of the method of exercises - deepening of knowledge, development, repetition, strengthening of skills and abilities for practical use of the studied material; - Laboratory work - didactic tasks of the method - the reception, understanding, mastering, consolidation and deepening of knowledge of new material, the ability to conduct independent research, rational solution of problems, the development of effective creative thinking, communication with equipment, measurement;
- Didactic tasks of the method of working with books - acquaintance, comprehension, mastering new material, expanding and consolidating knowledge, writing abstracts, self-monitoring, independent learning, habits of reading, knowledge of "free reading", the ability to distinguish the main, to take notes, to form structural-logical schemes, to form the basic abstracts, the choice of literature;
- Didactic tasks of the method of discussion - the acquisition, organization and consolidation of knowledge, stimulation and formation of interest in learning, communication skills, logical expression of ideas, the formation of questions, the argumentation of conclusions; -

Story - didactic tasks of the method of explanation - narration, explanation, analysis of new material, proof with evidence of various cases; - Didactic tasks of the lecture method - acquaintance with new material, description of complex systems, events and so on.

In the educational process, the appropriate teaching methods and the structure of management of students' learning activities are determined. On this basis, a list of teaching aids is compiled. The system of methods and teaching aids is harmonized with organizational forms, that is, technology is developed, including educational technologies.

In the implementation of modern teaching technologies (Table 1), non-traditional teaching methods were generally compared with traditional teaching (Table 1). Comparison of teaching methods Table 1 clearly shows the advantages of non-traditional teaching methods. From this it can be concluded that traditional teaching methods are reshaped and improved by non-traditional teaching methods (using computer technology).

**Table 1 Table of comparison of teaching methods**

Traditional teaching method	Non-traditional teaching method
The teacher informs the student, Unclear learning objectives, Statement of ready knowledge, Conversation and storytelling are the priority organizational forms of teaching, Visualization and a certain degree of rigidity, Constant encouragement to memorize, consolidate, and accumulate knowledge compulsorily, The stages of	Designing the learning process using a systematic approach, Defining as much as possible the learning objectives in the form of a set of possible actions of the learner according to the intended pattern, Learning through student behavior, Make adjustments to the learning process by communicating with learners, Formative and generalizing assessments, Criteria control (testing), Full mastery of

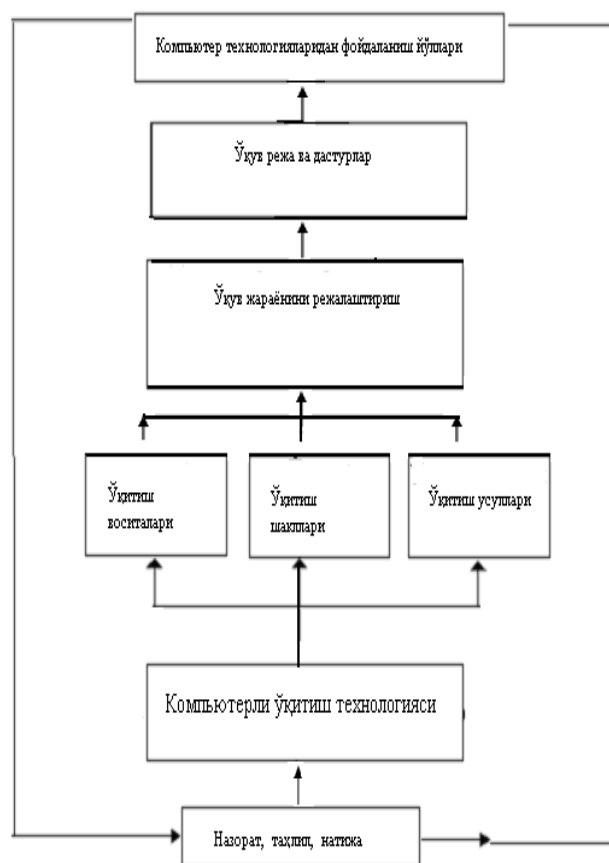
<p>learning consist of disciplines that are not sufficiently connected to the whole system, The trainings are (mostly) of an academic nature and are not sufficiently related to the future activities of the professionals</p>	<p>knowledge and skills, Guaranteed achievement of planned results, Achieving high efficiency of education</p>
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seminars and practical training, etc. are forms of training, which are carried out in conjunction with teaching aids and methods. According to this system, the teaching process is planned on the basis of curricula and programs in the subject. New teaching tools, forms and methods are selected in the planning of the teaching process.

- The task is to develop ways to use computer technology, based on the advantages and peculiarities of computer-assisted learning technology;
- In contrast to traditional teaching technology, the teaching aids, forms of teaching and active teaching methods required for the implementation of computer-assisted learning technology are selected, identified and the learning process is planned;
- New teaching tools, forms and methods are selected when planning the teaching process of the curriculum and program topics. In the implementation of modern teaching technology based on teaching methods, it is assumed that the teaching tools, forms and methods are focused on the use of computer technology;
- Ways to use computer technology are used in the classroom. Which of the ways of using the developed computer technology is effective is determined by control and results. According to the results, the ways of using computer technology in this group will continue to be used again, or the optimal ways of using computer technology will be redeveloped.

Thus, (Table 2) is a computer-based learning technology that evaluates the learning process as a system, its organizers, that is, the teacher's use of teaching aids, content and methods, the impact of a particular sequence in a given situation and the learning outcome. is done.

Computer-assisted learning technologies are new learning technologies that create forms of learning based on electronic means. The organization and conduct of training,



Computer-assisted learning technology

Teaching aids are auxiliary training materials necessary for the successful implementation of a particular teaching method - tools, weapons, hardware, etc., where the use of computer technology involves computers, video, projectors, screens and other technical means.

Forms of teaching - laboratory, practical classes, colloquiums, etc., are a form of theoretical and practical knowledge, ways to introduce computer technology are developed

on the basis of curricula and programs in science, planning the teaching process.

Teaching methods are first and foremost a process, a way of knowing. It consists of a set of actions aimed at acquiring knowledge of a process (Table 2). The research focused on the introduction of forms, tools and methods of computer-based learning and their coordination with modern teaching methods without abandoning traditional teaching methods, the development of methods of using computer technology.

Computer-assisted learning technologies are new learning technologies that create forms of learning based on electronic means. This, in turn, became the basis for the introduction of computer-assisted forms, tools and methods of research and their coordination with modern teaching methods without abandoning traditional teaching methods, the development of methods of using computer technology.

In order to optimally solve this problem, serious attention was paid to the development of electronic exhibitions and manuals on the subject of "Drawing", the organization of teaching in modern methods, the mental and physical capabilities, abilities and interests of students. To this end, A.R. Works of Beruni [2; 3], A.N.Forobi [1], A.Avloni [4] and psychological literature [20; 36], and In the research of U.A.Kasimov [116], strong ideas and opinions on the issues of upbringing a perfect person, the development and complexity of the interests of the student period, the formation of curiosities were analyzed and ways to take into account the individual interests of students were studied.

Students can be divided into the following types according to their personal characteristics:

- Extrovert (emotionally and environmentally oriented) learner - prefers an active learning process, interaction with other people (social interaction - group assignments,

exercises).

- Introvert (focused on the emotional and internal environment) learner - the individual enjoys independent learning, i.e. listening to lectures, reading books, and completing written tasks. People differ in their information processing, data perception activities:

- Hearing and verbal perceivers: those who prefer to perceive this type of information tend to listen and summarize the speech;
- Logical-mathematical perceivers: those who prefer to perceive this type of information tend to calculate with more numbers, to reason logically, to justify each reasoning. They remember numbers and dates better.
- Visual, spatial perceivers: Those who prefer to perceive this type of information consider visual aids, different shapes, structural plans, different maps, tables, diagrams, graphs, and diagrams importantly.
- Perceivers through interpersonal interactions and interactions: Those who prefer to perceive this type of information interact with each other in the process of acquiring knowledge. In the educational process, some of them prefer to study independently, to work alone, while some of them seek to work together, to learn in groups. This category of learners is quick to adapt to human relationships, social environment, is interested in learning about people, is more satisfied with the process of interaction, and likes to be around people.
- Self-awareness-based perceivers: learners tend to think more with a focus on self-awareness under the influence of a person's inner feelings and experiences. They tend to be more social and to know and understand those around them better.
- Physical and kinetic perceivers: Some learners are naturally inclined to perform physical activities, enjoy them, and perform physical exercises. They tend to do more practical work, physical labor, exercise with the

help of arm and leg muscles, and the tendency to do different things. Learners who kinesthetically perceive and process information prefer modeled lessons, role-plays, and action-based learning;

- Naturalistic connoisseurs: This category of learners is nature-loving, interested in the flora and fauna, the earth and its structure, working with maps, collecting herbariums and natural objects. They love sciences like biology, geography, physics, animal husbandry and botany.
- Musical, rhythmic perceivers: this category of learners are prone to melodies and songs, are able to perform their actions in accordance with musical rhythms, are emotional, sensitive and intelligent.

For the educator, it is desirable that the learner's interest is related to his or her other individual-psychological qualities: ability, talent, temperament, and character.

Therefore, using a variety of teaching methods, which form the basis of pedagogical technology, with the definition of pedagogical tasks in the teaching of drawing, to develop students' spatial imagination, thinking, speaking - debating, expressing their ideas through geometric spatial images. , taking into account the need to ensure interest in science in each subject, the methods of the educational process are selected according to their didactic tasks, implemented through the means, enriching the content of education.

In the process of implementation of modern teaching technology of the subject "Drawing" took into account the level of complexity of the curriculum, interdisciplinary relevance and didactic tasks of teaching methods [Appendix 2, Table 2 ]. In addition, changes were made to the form of teaching without changing the number of hours of lectures and practical classes in the curriculum.

The principle of unity of theory and practice in the education system is first implemented in

the learning process, depending on the content and specific nature of the subject. These classes will equip them with the experience they need to be able to put complex scientific theories into practice in the future.

Students gain a comprehensive understanding of the essence of the learning material, the laws of nature and social development on a scientific basis, and develop the skills, abilities and competencies necessary for their future practical activities. Therefore, taking into account the characteristics of each subject, it is accepted as a principle of the educational process to apply the new knowledge studied as much as possible to practice.

The balance of forms, methods and tools of teaching is important for the learning process. While the science of education serves to study knowledge theoretically, to understand logical connections, to develop the ability to think, practical actions, to apply this knowledge in practice, help to form a more complete conviction, skills and abilities.

The conclusion is that the implementation of computer-assisted learning technology in the teaching of the subject "Drawing" simultaneously increases the effective use of information and telecommunications, the ability to work with modern technical means.

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## **DETERMINATION OF ZOOPLANKTONS IN DENGIZKOL LAKE AND THEIR USE IN FISHING**

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### **ABSTRACT:**

**In the current era of globalization, the provision of food (fish) to the world's population remains relevant. The use of zooplankton in the breeding and feeding of fish fry gives good results. Therefore, it is necessary to determine the number and quality of zooplankton that live in different waters and use them in fishing. This article deals with the detection of zooplankton in Lake Dengizkol in Bukhara region and their use in fisheries.**

**KEYWORDS:** Sea urchin, zooplankton, fisheries, fish fry, hydrobionts, food resources, plankton grapppler.

### **INTRODUCTION:**

Lake Dengizkul is located in the south of Bukhara region, in Alat district, on the border with Turkmenistan. It is located in a tectonic depression at an altitude of 181.5 meters above sea level.

The reservoir does not have a permanent shoreline. By 1987, the dimensions of the lake were as follows: length - 43.3 km, maximum width - 9 km (width at the narrowest point - 22 meters), area - 267 km, volume - 2.7 km.

The seawater is replenished due to wastewater from several collectors, as well as water flowing from the fields. During the flood, the lake reaches the Zeravshan Taykir canal.

The water is very highly saline and has medicinal properties. At the bottom of the lake there are deposits of sodium chloride about half a meter thick.

Worldwide, the annual consumption of fish is 16.6 kg. Fishing and aquaculture play an important role in ensuring food security. Fish is a valuable, high-protein food. In 2004, 106 million tons of fish were caught worldwide. Fish makes up 20% of the protein in the human diet. The fish supplier sector is the fishing industry, but its share has declined to 57% by 2004. The main reason for this is the following factors: Overfishing In this regard, many fish species have become extinct. This has led to the impoverishment of natural lakes. Fisheries are the main potential for agricultural development in Uzbekistan. But in recent years, the industry has declined dramatically. There are great opportunities for the development of fisheries in the country, including in Bukhara region. There are 110,000 hectares of natural water in the Bukhara oasis, where 17 LLC fish farms have been established. Fish productivity is 1.0-1.5 kg / gani. According to the medical staff, the consumption of fish in Uzbekistan is set at 12 kg per year, which is 0.033 kg per day. According to the recommendation of the Ministry of Health, each person should consume 12 kg of fish and fish products per year for healthy development.



Hydrobiological studies on the taxonomy, distribution, ecological characteristics of zooplankton organisms in different types of ecosystems in Uzbekistan, their use in increasing the productivity of water bodies A.M. Muhamediev (1967, 1986), E.A. Toshpolatov (1975), I.M. Mirabdullaev (1990, 1992), A.R. Kuzmetov, H.X. Implemented by Abdinazarov (2018). Detailed information on the hydrobiological characteristics of water basins of the Fergana Valley is given in the works of AM Muzafarov (1958, 1965), AM Mukhamediev (1956, 1964, 1967) and other hydrobiologists, in which the physicochemical regime of water bodies in the region and this water information on the status of their food resources for the development of fisheries in the basins.

All methods of collecting zooplankton correspond to two options: 1) methods of plankton networks, carried out using plankton-grappler, which represent a combination of water-soluble and simultaneous water-separating plankton; 2) methods involving the separation of water and the subsequent separation of plankton from water, either by filtering the water that delivers the water to the surface, or by placement.

The method of sampling depends on the type, depth and size of the object (lake, reservoir, sewage, etc.). Samples of zooplankton in large and medium-sized lakes (lakes, reservoirs) with slow water exchange (lakes, reservoirs), along with the Djeddi network in terms of the quality of the Djeddi network, the depth 3 - Common in shallow water bodies (lakes, small forest lakes, lagoons) not exceeding 4 m.

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## **SUBSTANTIATION OF THE COMPOSITION OF THE POWDERED COMPOSITE MATERIAL FORMED FOR COATING THE WORKING SURFACES OF THE DETAILS**

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### **ABSTRACT:**

**This article describes the composition of the powder composite material formed to cover the working surfaces of the details. According to the results, it is advisable to use powdered materials consisting of iron and nickel alloys as fillers. It was determined that the powder composite material formed on the basis of the selected composition is produced by industrial methods.**

**KEYWORDS: Formed powder composite material, electric current, welding layer, composite material, polymer, cast iron pad, refined steel, abrasive abrasion.**

### **INTRODUCTION:**

The main task of this research is to study the abrasion resistance of the welded layer obtained from the formed powder composite materials in the friction pair with different materials, to analyze the abrasion mechanism of the heterogeneous structural layer, to justify the optimal structure, size and materials.

The weld layer obtained from the formed powder composite materials has a unique relief surface (topography) that differs from the others at the initial stage of erosion. This surface is in contact with the self-adhesive detail through the base surfaces of the hard alloys. This is why many scientists and experts

have wondered whether hard alloys can lead to microcracks on the surface of the joining part, such as sandstone.

For details operating under different conditions, the distance between the hard alloys on the surface of the welded layer will be important. This depends on the percentage of the phases that make up the powdered composite materials formed. In determining this ratio, it is necessary to determine the volume that the solidifying phase particles can occupy when filling a given volume, as well as the volume ratio of the binders and fillers that fill between them. For this purpose, the volume of the gap between spherical solid alloy particles with dimensions of 200... 400  $\mu\text{m}$  was calculated. Its value was found to be approximately 47% of the total volume.

With this in mind, we initially used a polymer-formed, composite phase composite material consisting of tungsten carbide and a particle size of 200... 400  $\mu\text{m}$ . Tungsten carbide particles occupied 40% of the sample working surface. The prepared sample was tested in a friction pair with cast iron pads. The erosion rate of the sample was found to be 60 times slower than that of refined steel. The cast iron pad, on the other hand, had twice less wear than when working in a friction pair with refined steel.

This situation can be explained by the following. The more solid alloy particles in the resulting layer, the harder it is for the abrasive

particles to sink to its surface and the more shallow holes can be drilled, however, we can increase the number of solid alloy particles in the layer to a certain limit. The more solid alloy particles there are, the harder it is to move them into the base metal. Therefore, by increasing the number of solid alloy particles in the alloy, we limit its plasticity and make it brittle. Machine parts are not only subject to friction but also to impact forces. From this it is clear that the wear-resistant layer should not be brittle. At the same time, it was found that the flat placement of hard alloys on the surface of the part also has a significant effect on abrasion resistance.

From the above, it can be seen that if the distance between the hard alloys on the restored surface of the part is large, the hard alloy can become a cutter relative to the joint itself. It follows that the area occupied by hard alloys on the surface of the part is crucial. During the study of details coated with powdered composite materials formed on the working surface, it was found that the area occupied by hard alloys should be 30... 80%. This limit of the amount of solid alloy in the layer is explained by the following.

When the area occupied by the hard alloys is less than 30%, the wear rate of the bonding part increases sharply. When the reclaimed part is operated in a friction pair with refined and cemented steel, the area occupied by the hard alloy can be obtained close to the lower limit. When working in a friction pair with more soft materials, the area occupied by the hard alloy should not be less than 50%. In practice, this is achieved by changing the composition of the powdered composite material formed in the required ratio to the area that the solid alloy can occupy on the surface of the detail-coated layer.

It is extremely important that the solid alloy particles are evenly distributed in the

layer coated on the surface of the detail. This is because in order for the hard alloys to be held firmly in the resulting weld layer, each of its particles must be surrounded on all sides by a bonding material. The smaller the distance between the hard alloys, the less the binder material is corroded. However, in the preparation of a composite material formed from a mixture of powdered materials of different brands, the solid alloy particles are arranged randomly, i.e. not in a definite plane. Therefore, on the surface of the obtained layer, the particles of hard alloys cannot be evenly spaced. It follows that we can only determine the maximum value of the distance between them. In our previous studies, it was found that the maximum distance between solid alloys should not exceed 4... 5 times the size of the solid alloy particles. Therefore, in order for the solid alloy particles to be evenly distributed in the layer, it is necessary to achieve as much as possible the amount of solid alloy in the composition of the composite material. Their exact amount is determined depending on the operating conditions of the parts.

The determination of the composition of the powder material for the formed powder composite material is important for its widespread application in the production of the recovery method. Studies have shown that hard alloys with an aggregate size of abrasive particles (4... 40  $\mu\text{m}$ ) and larger particles (up to 500  $\mu\text{m}$ ) are more resistant to corrosion than fine particles (1... 3  $\mu\text{m}$ ). The abrasive particle does not sink to its surface and cannot be cut or cut, so there is no micro-cracking in it and the abrasive passes from abrasion to the type of abrasion in fatigue. Taking into account the brittleness of the hard alloys and the strength of the weld, the composition of the weld seam to be obtained, together with the curing phase, should again consist of a binder and a filler. The selection of the curing phase is based on the

requirements for its corrosion resistance, layer hardness and the degree of scarcity of the material. For layers that require 5... 10 times higher abrasion resistance, it is advisable to use powdered materials such as chrome-based PG-FX-800 and PG-FBX-6-2. Titanium-based hard alloys (T15K6, T30K4, T60K6 and PTJ23N6M) are recommended if higher abrasion resistance is required. If very high abrasion resistance is required, then the use of tungsten and other hard alloys such as nitride and boride is recommended.

It is known that cobalt is mainly used as a binder in the production of carbides. Cobalt is one of the metals that side by side with iron and nickel in the Mendeleev periodic table of elements. However, cobalt differs from iron and nickel in its physico-mechanical properties and scarcity, such as high liquefaction temperature, density. In addition, most of the details that require restoration are steel and cast iron, which are iron alloys. With this in mind, the use of powder materials consisting of iron and nickel alloys as binders and fillers was considered expedient. The powder composite material formed on the basis of the selected composition was produced industrially. The establishment of the production of molded powder composite materials on a certain composition allows it to be introduced into the restoration of details.

#### **CONCLUSION:**

Factors such as the area of the solid alloy particles on the friction surface, the particle size, the distance between them and their uniform location, especially in the direction of friction, were found to affect the abrasion resistance of weld seams obtained from formed powder composite materials and their composition was based on specific conditions.

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Abrorbek Abbosovich. Substantiation of the composition of the powdered composite material formed for coating the working surfaces of the details

The composition of the powder composite material formed for coating the working surfaces of parts working under friction conditions is based on the area of solid alloy particles on the friction surface, particle size, distance between them and their uniform location on the surface of the layer.

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## EFFECTIVE METHODS OF TEACHING ENGLISH AND ITS RELATION TO OTHER SCIENCES

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### ABSTRACT:

Current article is devoted to the problems of teaching methods of English as a foreign languages. In this article we look through different methods in this field. Methods of foreign language teaching and its relation to other sciences. Methods of foreign language teaching is understood here as a body of scientifically tested theory concerning the teaching of foreign languages in school and other educational institutions. Teaching a foreign language means first and foremost the formation and development of students' habits and skills in listening, speaking, writing, and reading.

**KEYWORDS.** Method, other sciences, pedagogics, psychology, linguistics, didactics, effective learning, investigation, conclusion, repetition, determine, assimilate, instruction, presenting, theory, dynamic stereotype, quotation, laboratory, test.

### INTRODUCTION:

Methods of foreign language teaching is understood here as a body of scientifically tested theory concerning the teaching of foreign languages in school and other educational institutions. Russian scientist Rogova G.V. showed three main problems:

1. Aims of teaching a foreign language;
2. Content of teaching, i.e. what to teach to reach the aims;
3. Methods and techniques of teaching, i.e. how to teach a foreign language to reach the aims in the most effective way.

Methods of foreign language teaching are closely related to other sciences such as pedagogics, psychology, linguistics and some others.

Pedagogics is the science concerned with the teaching and education of the younger generation. Since methods also deal with the problems of teaching and education, it is most closely related to Pedagogics. One branch of Pedagogics is called Didactics.

Didactics studies general ways of teaching in schools. Methods, compared to Didactics, studies the specific ways of teaching a definite subject. Thus, it may be considered special didactics. In the foreign language teaching, as well as in the teaching of Mathematics, History and other subject taught in schools, general principles of Didactics are applied and, in their turn, in influence and general principles of Didactics are applied and, in their turn, in influence and enrich Didactics. For example, the so – called “principle of visualization” was first introduced in teaching foreign languages. Now it has become one of the first introduced in teaching foreign

languages. Now it has become one of the fundamental principles of Didactics and is used in teaching all school subjects without exception. Programmed instruction was first applied to teaching Mathematics. Now through Didactics it is used in teaching many subjects, including foreign languages.

Teaching a foreign language means first and foremost the formation and development of students' habits and skills in auding, speaking, writing and reading. We can't except to develop such habits and skills of our students effectively if we do not know and take into account the Psychology of forming them, the influence of formerly acquired habits on the formation of new ones and many other necessary factors that Psychology which can be applied to teaching a foreign language. For example, N.I.Zhinkin, a prominent Russian Psychologist in his investigation of the mechanisms of speech came to the conclusion that words and rules of combining them are most probably dormant conclusion that words and rules of combining them are most probably dormant in the kinetic center of the brain. When the ear receives a signal it reaches the brain, it's haring center and then passes to the kinetic center. Thus, if a teacher wants his students to speak English he must use all the opportunities he has to make them hear and speak it. Furthermore, to master a second language is to acquire another code, another way of receiving and transmission information to create this new code in the most effective way one must take into consideration certain psychological factors.

Effective learning of foreign language depends to a great extent on the students' memory. That is why a teacher must know how he can't help his students to successfully memorize and retain in memory the language material they learn. Here again psychologically investigations are significant. For example, the

psychologist P.K.Zinchenko proved that in learning a subject bot voluntary and involuntary memory is of great importance. In his investigation of involuntary memory P.K.Zinchenko came to the conclusion that this memory. Consequently, in teaching a foreign language we should create favorable condition for involuntary memorizing. P.K.Zinchenko showed that involuntary memorizing is possible only when pupils attention is concentrated not on fixing the material in their memory through numerous repetitions, but on solving some mental problems which deal with this material. To prove this the following experiment was carried out. Students of group A were given a list of words to memorize (voluntary memorizing). Students of group B did not receive a list of words to memorize. Instead they got an English text and some assignments which made them work with these words, use them is answering various question. During the next lesson a vocabulary test was given to the students of both groups. The results were approximately the same. A test given a fortnight later proved, how ewer, that students of group B retained words in their memory much better than the student of group A. This shows that involuntary memorizing may be more retentive under certain circumstances. Experiment's by prominent scientist show that Psychology helps methods to determine the role of the mother tongue in different stages of teaching; the amount of material for students to assimilate at every stage of instruction; the sequence and ways in which are more suitable for presenting the material and for ensuring its retention by the pupils and so on.

Methods foreign language teaching has a definite relation to Physiology of the higher nervous system. Pavlov's theories of "conditioned reflexes", of the "second signaling system" and of "dynamic stereotype" are

examples. Each of these interrelated theories bears a direct relation to the teaching of a foreign language.

According to Pavlov habits are conditioned reflexes and a conditioned reflex is an action performed automatically in response to a definite stimulus as a result of previous frequent repetitions of the same action. If we thoroughly study the theory of conditioned reflexes we shall see that it explains and confirms the necessity for frequent repetitions and revision of material students study as one of the means of inculcation habits. Pavlov showed that man's higher nervous activities – speaking and thinking – are the functions of a special system of organic structures within the nervous system. This system is developed only in men. It enables the brain to respond to inner stimuli as it responds to outer stimuli or signals perceived through the sense organs. Pavlov named this the second signaling system. Consequently one of the forms of human behavior is language behavior, i.e., speech response to different communication situations.

Pavlov's theory of "dynamic stereotype" also furnishes the Physiological base for many important principles of language teaching, e. g. for the topical vocabulary arrangement.

Methods of foreign language teaching is most closely related to linguistics, since linguistics deals with the problems which are of paramount importance to methods with language and thinking, grammar and vocabulary, the relationship between grammar and vocabulary, and many others. Methods successfully use, for example, the results of linguistic material for teaching. It is known that structural linguistics has had a great impact on language teaching. Teaching materials have been prepared by linguistic and methodologists of the structural schools. Many prominent linguists have not only developed theory of

linguistics, but tried to apply it to language teaching, The following quotation may serve as a proof of this:

"It has occurred to the linguist as well as to the Psychologist that the foreign language classroom should be an excellent laboratory in which to test new theories of language acquisition".

Language consists of four modalities – listening, reading, writing and speaking. They are interrelated. Learners increase their ability to listen, speak, read & write by becoming involved with language. Among language teacher these modalities are known as the four "skills". The term "skill" simply means ability of expertness.

Judging the roles of the four skills we may say that listening is that component of language with which every living being begins the learning process and we depend on throughout our life.

Listening is important in 2<sup>nd</sup> language pedagogy as one of the methods by which humans attempt to make sense of the surrounding world.

An experienced school teacher defines listening as one of the learning "subjects" not only in middle schools but, probably in our society as well<sup>1</sup>. Another specialist asserts "that listening skills can and should be taught"<sup>2</sup>

Listening status as a separate subject has gradually given teachers the opportunity to focus on particular activities in all language components, i.e. be able to produce a FL sounds and prosodic units in phonetics & phonology, develop a whole vocabulary of a text, establish sentence patterns and follow directions – all essential for developing speaking, reading and writing.

Be allowing us to hear and interpret environmental sounds listening serves as an aural vehicle for comprehension development<sup>3</sup>. To our mind there must be



lessons in listening need to involve students as active listeners: for example, discussing a book they have read, plays, films and art shows they have seen-give the learners a purpose for listening.

The first listening activity focuses on comparing and contrasting the meaningful and non-meaningful sound segments' status, whether they are separate phonemes or allophones of certain phonemes:

- a) The articulation of the consonant sound [t] in vowel and consonant environments: team, ten, two, tank, try, eight, eighth, cotton.
- b) Substitution of sound change the meaning and the form of words: pen-ten-men-hen-when, sing-sang-sung.

One aspect of listening, auditory discrimination distinguishes the difference between sounds aids spelling and reading proficiency: the sequence of "oo" letters is uttered in some ways: good, blood, moon, poor: the sequence of "ough" – as though, thought, cough, enough, through.

Traditionally in listening there is an assumption that students can improve their perception, then their ability to speak the language will also improve? The learners were exposed to their teacher speaking English. The learners were lucky if their teachers' pronunciation was satisfactory, but if not .... There appear some questions. Nowadays the non-phonetician teachers assume that students will pick up the ability to acquire the RP type of English naturally from radio TV as they acquired some command of the production of English segmentals & suprasegmentals. But this is unachieved task.

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## CENTRAL ASIAN MADRASAHS ON THE EDUCATIONAL PROCESS

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### ABSTRACT:

Every nation has its own scientific institutions that can change their spiritual life. The Central Asian country is also distinguished by its madrassas and the quality of their educational process. This article discusses the works and textbooks that have been used as advanced manuals in Central Asian madrassas for centuries. As we get acquainted with the sciences in these madrassas, we will see that the scholars have studied different spheres of life in the same order.

**KEYWORDS:** Central Asia, Emirate of Bukhara. Khiva and Kokand khanate, Nuval Kanpur, art, pedagogy, methodology, textbook, Islamic teachings, mudarris, weight (poetic measurements).

### INTRODUCTION:

The role of madrassahs as educational centres in the scientific, spiritual and educational development of the peoples of the East was enormous.

Various curricula are used in the education system. Therefore, it would be desirable to briefly dwell on textbooks, scientific manuscripts, unique handwritings, maqomas and their teaching methods, which once served as a reference point.

Although the sources we refer to are a collection of different disciplines in terms of their overall structure, there was also a curriculum that covered methodological issues.

One of these important sources is the work of Wojid Ali Munjmali, a 19th century scholar and stylist, "Matla'u-l-ulum va majlau-l-funun". This work was published in (xijriy

1267, milodiy 1851) in Nuval Kanpur, Pakistan. It is clear that the scientist used the works of his predecessors in covering various educational and methodological issues.

### MAIN PART:

To a certain extent, it summarises the experience, theoretical and methodological views accumulated over many centuries in the regions where Islamic education is spreading. In one place, literature and poetry emphasise that melody is an important tool in the study of various works. It was published in 1302 (milodiy) in Kanpur, Pakistan, while the textbook "Matka'y-l-ulum va majlau-l-funun" ("Sediments of Science and the Wise"), created by Bahbuwandien Sahib the Wise, provides some extensive methodological information.

The work consists mainly of two books, some of which are also called notebooks. It can be assumed that the work was created because of the lack of textbooks and manuals in the madrasah and the need for such a source. The author notes, for example, that the first book of the textbook laid the foundation for the creation of such famous scientists of his time as Yusuf Sakkokiy "Mifotohu-l-ulum" ("Key to knowledge"), as well as Saidsharif Juzjaniy's "Shahri miftohu-l-ulum", created in Khorezm in the 12th century.

The textbook begins with praise from a faithful Theologue, the last Prophet Muhammad MADI, followed by a presentation of information about the author through masnaviy.

The textbook consists of 23 chapters; some chapters are divided into several seasons. As the textbook covered different areas of, we saw that it should be mainly in the areas of

language and literature, pedagogy, oratory, writing, speaking, logic and other methods.

Although the textbook contains a seemingly comically perfect work, information about each area is given according to a specific procedure and the necessary images are scientifically sound. For example, references to fiction, poetry and learning methods begin to appear in simple terms and then become more complex. First of all, these theoretical data are comprehensive, as far as the selected area is concerned, the need for secondary data can be recognised by the person using the textbook. Chapter 12 of the textbook is devoted to artistic science. The chapters that form the basis of the section provide theoretical information about the patterns in which rhymes are taught in science.

Prior to fiction, the previous chapters gave a number of stylistic laws, such as the Beautiful Word (Chapter IV), the science of poetry (Chapter VI), the science of composition (Chapter VIII), the science of meaning - the way of describing subtle meanings (Chapter X), speech style and rules (Chapter XI). A student who is informed of these laws concludes that theoretical knowledge of literature can be acquired. This ordered textbook structure shows that it is methodically based on logical sequence. In the last chapters of the textbook, it is not difficult to understand that the above methodological data, such as the logic of knowledge (chapter XXVIII), the discussion of science (chapter XXIX) and the commentary on knowledge (explanation of words, terms) (chapter XXIII), are given for learning complex scientific and theoretical information. One notable aspect of the textbook is the importance it places on morality and spirituality. Educational (pedagogical) issues arise mainly from the eastern point of view. In particular, recommendations will be made on the basis of feedback from judges, sages and scientists, divided into several chapters.

The creation of such textbooks and manuals has ensured the emergence of methodology schools. Naturally, the advent of such schools has in itself prompted mudarris-methodologists, scientists and researchers to write comments on difficult text works and to create the necessary textbooks and manuals.

The madrassah was important in saving the glory of scholars, choosing an experienced mudarris methodologist. In a sense, this seems to have led to the emergence of stylistic schools. Otherwise, as in the 10th century, Abu Abdullah Muhammad ibn Yusuf al-Khorezmi would not have created a methodological work called "Mifotihu-l-ulum" (The key to knowledge). This work explains the content of each science at the time and the challenges it faced by giving out basic terms. The work consists of IX chapters and chapter V sets out the laws of poetry and arusa. In particular, the poetic dimensions (weight) stop at certain deficiencies, rhymes, poetic repetition and artistic language.

This fact proves that the attention to artistic poetry and the study of Aruz science began in ancient times. Nowadays, this work is undoubtedly the main teaching aid for students and mudarris. It is worth noting here that this is the first textbook of the century to have been compiled. In general, the work "key to knowledge", along with the textbook, has defined the general direction of the methodological manuals, which are to be published later. The works created later, inspired by the first works, found new brilliance and were reinterpreted with the preservation of the same style, ways. One of the authors of such works is Najmuddin Nasaf ibn Muhammad ibn Ahmed an - Nasafi (1069–1142), who later lived in Samarkand. He created over 100 works and became famous as an expert in tafsir, literature, history and hadith. "Al-Qand fi zikri ulamoi Samarqand" ("On Samarkand Thinkers"), translated from

Arabic, lists some of Nasafi's works and talks about them. Among the works mentioned is the comic work "Majmau-l-ulum".

Nasafi's story "Al-Qand fi zikri ulamoi Samarqand" about famous people of Samarkand, connoisseurs of tafsir, literature, history and hadith, mudarris is valuable.

The work dates from the 11th century and consists of 98 sheets. It contains a list of 423 selected stories. The sheikhs, imams, Kari, fiqhshunos, Zahid, Sahih, mudarris and hadith mentioned in the work, which told the names of scientists, nazm and other sciences, presented mudarris with their knowledge in the Jami mosques. Although the first work does not mention individual madrasas, there is often information in mosques and flats that he gave knowledge to students.

Mavloni Sa'diddin Taftazoniy, one of the most prominent Komuz mudarris scientists, created such works as "Miftohu-l-ulum" (The key to knowledge), "Al-Muxtasar al-Ma'oni" (A summary of Maoist science) as the head of Temur Madrassah in Samarkand. In addition, such scholarly works as "Al-Mutawwal", the "Sharq risola ash-shamsiya" and "Sharh aqoid an- Nasafiya" show that he conducted scientific research alongside his mudaris activities. A number of authors have also written these works along with teaching in madrasahs.

The works of Sa'diddin Taftazoniy have gained fame in the scientific and literary environment of Samarkand and other regions. For example, in response to the great concern of Abdulkasim Abulaysi Alisher Navoi, who visited Girot, Mavloni wrote a commentary on the work "Al Mutavwal", which tells the story of Saudiddin Taftazoni's literary studies, calling it "Hoshiyai mutavval". The work is dedicated to Alisher Navoi and he met the work well.

We can see that Saudiddin Taftazoni's work "Miftohu-l-ulum" ("The key to knowledge") caught the attention of the famous Samarkand scholar and sage Kozizoda-Yi Rumi

and he addressed this work and wrote a commentary on it. As can be seen from the above, in general, not only Kozizoda-Yi Rumi, but also many scientists, who wrote comments on these works, turned to the work "Key to knowledge".

The aim of these comments was to make these works popular and to make it easier for students to learn. Or then such methodological aids as the famous mudarris Abulkasim bin Abu Bakr al-Lais Samarkandi's "Risholatu-l - Istiorat", "Nomai Nomiy" by Khondamir, "Munoshiratu-l-insho" by Mahmoud Gilani, "Kitobu-l-insho" by Sadik Jondori garden would not have come to the field. Hussein Kamoliddin, a contemporary of Alisher Navoi, not only mastered the preaching Sanat, but also created a manual called "Mahzanu l-insho", continuing the traditions of his mentors in the field of stylistics.

One of the founders of the Jadidist movement Ismailbek Gasprinsky in his book "Turkiston ulamosi", speaking about the culture of the past Turkic peoples, comments: "On the continent of Turkestan, mental and moral sciences are rushing". He gives information about more than 100 printers in Turkestan to confirm his opinion. The book "Turkiston ulamosi" is divided into ten chapters, one of which is called "Umumadabiya". This section is mainly about spending, Nakhon, Maoni, writer, debate, philosophy.

One of the workplaces displays the textbook "Miftohu-l-ulum" ("key to knowledge"), which belongs to Yusuf Sakki Sirojiddin of Khiva. Abu Abdullo Termizi (Hakim Termizi), who wrote such methodical manuals as Al-Nahj (method), "Navodiru l-usul" ( methodology), Navodiru Termizi. The book tells how many slanderers for science have been passed on to Turkestan scientists, which is very important in this place.

In addition to art studies, Abdurahman Jami, a famous thinker, is known for his work as a mudarris at the Samarkand madrasah, directly as a talented Taliban. The lessons result in a work called "Fawoidi ziyaiya" or "Sharhi mullah". This work was used as a textbook in madrasas in the following centuries (the poet's textbook was translated in 1796 by Secretary Kurban Rahmatillo and is now stored in the manuscript collection of the Samarkand State Museum).

The madrasah curriculum shows that the main source of art, called "The Key to Knowledge", is Messenger Muhammad S.V. Founder: Editorial Office of the newspaper "Xabar".

At the same time, the population is involved in all aspects of life in Islam, and they are an important source of education for such positive qualities as the formation of a perfect human being and the possession of noble qualities. Because the thought expressed in each hadith is not a dry precept, but a unique synthesis of the reality inherent in Muslim life.

The main areas in which madrasah students are introduced to Islamic religious movements are Farz, Wajib, Sunnat, Mustahab, Khalal, Haram, Makruh, Mubah and hadith. In addition, moral prescriptions and issues relating to human qualities were explained.

This information shows that in some regions, even in primary schools, special attention is paid to the study of hadithology and specimens of literature and is included in the curriculum.

Even later, as a result of the work of literary scholars as a madrasah's mudarris, it became customary to compile textbooks and publications. By the 17th century, one of the most prominent madrasah mudarris, Muhammad Badeiya Malekho, who worked in Samarkand, created the tazkara "Muzakiru-l-ashob" ("Zikri Suhbatdoshlar") as a literary

critic. Naturally, this stamp allowed students to get acquainted with the works of poets.

Such tazkars were created by many and served to improve the effectiveness of madrasah literature classes. Students were introduced to the literary heritage of such famous poets as Saadi, Hafiz Sheroziy, Abdurahman Jami, Alisher Navoi, Muhammad Fazuli, Sufi Alloyor, Abukodir Bedil and Baborahim Mashrab.

### CONCLUSION:

Therefore, the works of these authors, in particular Devon, have been translated and many selected works studied. The madrasa farms continued with the groups Saadihonlik, Hofizhonlik, Navoihonlik, Fizullihonlik, Bedilhonlik, Sufi Alloyorhonlik and Mashrabkonlik.

Thus, in the madrasah, starting with a training manual called "Awwoli ilm", the "Key to knowledge" has been continued over the years based on the complex sources involved.

Thus, the continuation of the educational list became the basis for providing students with comprehensive scientific knowledge. In this way, they tried to promote in other regions the knowledge and ideas that were given to them by the teachers of the madrasah where they studied.

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## BASIC FEATURES OF ADVERTISING LANGUAGE

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### ABSTRACT:

Advertising language is simply a combination of extra linguistic and linguistic means of expression governed by the laws of mass communication and general literary rules, and a special language structure that enables the addressee to perceive specific information taking into account the cultural, sociological and psycholinguistic features of the language. The main communicative purpose of the advertising text is to encourage the consumer to choose the products and services to be advertised.

We know that the lifestyles of members of society change and improve over the years, and these changes are reflected in their languages. In this article, we have tried to shed some light on the extent to which sociality is reflected, especially in the language of advertising.

**KEYWORDS:** sociolinguistics, advertising language, social, information, oral, consumer, vernacular, emotionality.

### INTRODUCTION:

Advertising language is a special phenomenon and a special field of study of public relations in the field of modern science. It is being studied by experts in various fields: linguists, psychologists, economists and others. Of course, all of these researchers have different goals in their work. Linguists analyze the language of advertising in groups (phonetic, lexical, syntactic, morphological, stylistic), psychologists consider methods of language management and their impact on consumers. But there is another aspect of

language that examines the text of an advertisement from a social point of view, linking it to the way of life, so that linguists cover all the sections into groups. This, of course, is the field of sociolinguistics.

The term sociolinguistics is defined by our linguists as follows: Sociolinguistics examines the problem of language and society, the question of the specific occurrence of language in the speech of a person of different classes, categories, ages, professions and genders. Latin is a branch of linguistics that combines the words society and linguistics, and studies the issues of language's impact on society and society's language. The term sociolinguistics was first used in linguistics in 1952 by the American researcher H. Curry. Pure linguistics examines only the language itself. Sociolinguistics focuses on the fact that members of society use it differently in different contexts and environments [1, 176].

The language of advertising is also developing in harmony with the issues of social life in the reflection of public life. For this reason, the language of advertising plays an important role in the study and analysis of social language knowledge. It is important to note that the language of advertising is a source that reflects the lexical means available in the national language, shows the scale of the social meaning of the language, and determines the ways of its development. Therefore, it is expedient to study the role of the language of advertising in the development of life and society, as well as its features related to the style of the social environment. Undoubtedly, the clarity and comprehensibility of the elements of simple, fluent, coherent language, which exist within the language of advertising,

testify to the importance of its place in social relations. This is also the importance of researching the language of advertising. However, the language of advertising is the language that creates the relationship between social lives. Historically, advertisements have appealed to consumers in the past, verbally, with units such as "stay warm, eat, those who receive are in need, those who do not receive are in wish." In this regard, the language of advertising should be recognized as an example of the art of speech. This is because in order to sell a product, it is necessary to come up with unusual sentences that can attract the consumer's attention, and to ensure that the product comes to mind when you hear that sentence. It seems that the language of advertising is a language rich in the means of expression of the vernacular, with an important appearance that reveals the laws of figurative use of language. For example, in the phrase "Taste of Life" (from a Coco cola advertisement), social meaning is understood through the use of words of taste that conform to the vital and universal laws inherent in literary language. This is because the concept of empowerment, expressed through the word life, is further enhanced by the use of the word taste, which emphasizes the aesthetic and educational significance of thought and the role of language in the development of society. At the same time, the social symbols inherent in the language of advertising served to reveal the clarity and clarity of thought, as well as its aspects related to the content of life and society. Consequently, the language of advertising is a form of the vernacular in which the word, whether used in its own sense or in a figurative sense, feels its influence in social relations. That is why the language of advertising has a special meaning. The important thing is that the concept of the language of advertising is the same in all nations, but the customs, lifestyle, social

characteristics of each nation are different, which means that each language has some important distinguishing features. shows. In this sense, it should not be forgotten that the language of advertising is one of the unique forms of language, based on the past traditions of the language of the people. It has important features that should be mentioned. All of this is important in advertising. Among them, knowing and remembering thoughts has a great impact.

The amount and volume of information conveyed has a profound effect on the way information is received and processed. Excessive information in advertising, on the contrary, their inadequacy has a significant impact on the purchase of the product. It follows that the activation of cognitive need remains a strong psychological factor in advertising [2, 48]. The ad will ask you questions about creating a finished image and encourage you to think. The answer is that the consumer's attitude to advertising depends on how perfectly, completely, and most importantly, reasonably the advertised product is brought to his attention. Psychological research shows that about 80% of consumers who receive advertising information are dissatisfied with the lack of advertising information. The emotional content of advertising influences the emotional relationship to the object of advertising information. How does the subject react to advertising information? For example, they are in the following forms: positive, negative, neutral and contradictory [3. 80].

Advertising text is the main, and often the only, expression of the content, which reveals the purpose of the advertising message. If the images represent the most important aspects of the advertisement, activate the emotional response of the consumer, and the verbal part of the message helps to expand the intellectual activity and direct the advertiser's



well-defined proposals. Spoken text reflects the whole content of the content, which is converted into an advertising message by the author.

Verbal texts consist of the following components:

1. Slogan
2. Title
3. The main advertising text
4. Echo expression

1. "Slogan" (slogarim) is derived from the Celtic language and means "battle call". This short, clear and easy-to-pronounce phrase is the main logical element of an image name or brand, expressing the essence and philosophy of the firm, its whole policy in various fields. The average size of the slogan is 4-5 words, and the maximum size, as a rule, does not exceed 7 words.

The slogan should be as follows:

- short
- memorable
- be a trademark name
- be fully translated into other languages

2. Title is one of the most important aspects of the verbal part of advertising. The title usually has a strong advertising motive and updates the advertising argument. As a rule, about 80% of those who read the headline are not interested in the main text of the advertisement and do not read it. Therefore, the most important task of the advertising title is to attract the attention of potential consumers and arouse their interest in reading the text of the advertisement. To do this, the title should have the following character:

- Conciseness and at the same time meaningfulness
- Sensitivity, brightness
- Rationality, awareness

The size of the title is much larger than the slogan.

**Main ad text (MAT)** – strengthens the justification.

With its help, the volume of the title and the expediency of its adoption are demonstrated. The problem of justification is the main problem, which can be developed in the following ways:

- depending on his emotions
- depending on the needs and specifics
- depending on the bid [4.18]

**An echo phrase** is the last group in the classification we are considering, and it consists of a word, syntagm, or sentence that completes the main ad text, repeating the main motive and rationale. The echo phrase is one of the most important elements because it is often read by customers along with the title.

Echo-phrase has two functions:

- **a) repeats the main idea of the text**
- **b) gives the text a complete look.**

It should be noted that most exo-phrases are consistent with the slogan.

People respond to any advertisement with their emotions [5, 120]. We express our attitude directly to the environmental phenomena, things and objects around us under certain conditions. In this case, the human body falls into different states. Variety of situations occurs when things and events have a direct effect on a person. Love, affection, joy, happiness, amazement, sorrow, pain, fear, anger, hatred, envy, guilt, sin, and many other inner feelings are the main causes of a person's falling into different situations. . These processes certainly cannot take place without the use of language. Bright impressions have a strong effect on emotional memory. In humans, emotional memory is important in addition to visual memory. In emotional memory, the principle of willingness or unwillingness is the guiding principle. Through the language of advertising, we create emotional images

without realizing it, no matter how much it is created. This situation directly determines the viability of the language, as it is used in oral and written speech, dialects, vernacular, national language in the expression of social relations in everyday life. These are the basis for the emergence of the state of language. Sociolinguistics is the study of the external-functional aspect of language and internal-grammatical structure. The relationship between the outside and the inside of a language is called the state of language.

Speaking of advertising slogans, it can be said that it is the main element of advertising, like a telegram. Members of the society decide whether or not to read the continuation of the advertising text under the slogan [6, 31].

According to R. Reeves, a specialist in advertising, the consumer remembers only one clear proof or one clear idea from the text of the advertisement [7, 27].

Reeves himself created one of the most important features of the advertised chocolate in the creation of the advertising slogan for "M & M's" chocolate: "It melts in the mouth, not in the hands" ("Tayut vortu, a ne v rukax"). He chose jam as a basis for his motto, so that it does not melt by hand.

"In general, the slogan is a short-sighted means of expression. Slogans are used in all types of advertising. The basis of the slogan is that it consists of words that have a lasting effect on the human psyche. For example: new, free, effective, natural, cheap ...

Advertising slogans usually promise happiness, a prosperous life, the realization of dreams. The motto as the basis of the advertising idea includes:

#### **ENCOURAGEMENT:**

Taste, and feel! Buy cheers, find pieces of phase inside, collect the phase and exchange it for great gifts. Buy green tea and win a gold

ring. Enjoy Lipton ayc tee tea. Allergies will help you Loratal. Join the Premier Taxi! Discount season has started! Manage communication independently! Subscribe to "Darakchi" and win! Take part in 6 out of 36 games of the People's Bank's "Eastern Lotto" lottery and win the jackpot in the 134th draw. Take a step, get a gigabyte, take a step from us, take a step with us, get a gigabyte.

**High evaluation of the advertised trade enterprise:** "Aziza Ziyoy" dream come true (about the training center). Everything is here (about the supermarket). The only medical information service "Infomed".

According to their structure, advertising slogans can be divided into three groups:

**1. Linked slogan.** Bog`langan shiorda tovar nomi ishtirok etadi: Har doim Coca-Cola.

**2. Adapted slogan.** Unda shior tovar nomi bilan ritmik va fonetik uyg`unlikda bo`ladi: Alyumag -oshqozonga ko`mak; Ermak - bu foydali, mazali va toza demak; Muza bilan siz, betakror pazandasiz.

**3. Free slogan.** In the free slogan, the brand is used separately: Nescafe. All for good. Nestle. The era of pure life has come! Transparent. First spring water! Coca Cola. The pleasure of life. Mir Hayat. The breath of new life.

Slogans represent the main idea of advertising. The following concepts and meanings are understood in them:

1. Forward! - Attracting attention by encouraging the product.
2. Discount season has started! - call.
3. Buy it! Drink and enjoy! - SIBUR!

Positive emotionally charged words give the idea of enjoying the advertised product. For example, in a lottery ad clip, an older woman and a man are sitting. The man gives the woman a lottery ticket and the slogan "Love does not choose age" appears on the TV screen.

Sometimes the idea of slogans, the content of which is not related to the characteristics of the product. The slogan is usually expressed by

comparison. Decide for yourself, believe in your thirst! "Sprite!"

The following tools are effectively used in the creation of advertising slogans:

**Metaphor:**

When a thing, a sign, the name of an action is transferred to another on the basis of mutual similarity, it is called a metaphorical transfer. Metaphor is one of the factors that actively contributes to the formation of new meanings of words. There are many slogans created using metaphors. For example, PANTERRA STUDIO - Stars of Uzbekistan will be your guests! Ecler is the right path to beauty. Latsidoforte cares about your family's health. There is a classification of metaphors on what characteristics, what to move:

- From a living thing to another living thing
- From living things - to inanimate objects
- From inanimate objects - to other inanimate objects
- From subjects - to activity
- From activity to subjects
- From activity to other activity, etc.

For example, advertising of multifunctional Panasonic KX-MB263RV: "He is an excellent assistant in the office and at home. Takes over all paperwork and completes the work started. You won't even notice that you thanked him for the first time. And he will help you, he will help you. " Here we come across the metaphorical name of the technical device - the qualities of living things are transferred to inanimate objects.

Antithesis - is to link or compare opposing ideas in order to achieve the clarity of images or a stronger expression of feelings and ideas. In this stylistic method, the goal is achieved at the expense of diversity, the tones are real, and the significance is more understandable, because the object being explained is added to its reverse. For example, advertisements for alcohol products.

Ellipsis – is to influence the customer with the least amount of information in the advertisement with the addition of compression means as an adjunct to the nominative sentence. Compression may also include omissions of service-related, semantically incomplete words. For example, "In fairy-tale conditions - to real opportunities" (advertising service of VTV 24 Bank); "Today and always the youth of your skin" (cosmetic advertising); "Every product is a strange solution" (advertisement of home appliance manufacturers). In these examples, only the quality of the product is clearly indicated, and other words are omitted.

Inversion – expressive updating achieved by replacing words and sentences. For example, "Everywhere - the warmth and comfort of home" (advertising of tea producers); "Mezim - better for the stomach with it", "Depend cosmetics - nails are always beautiful".

Thus, as we are convinced, the study of different linguistic means, their interrelationships in order to create a special pragmatics of the text, shows that semantic analysis alone is not enough to comprehensively and uniformly understand the linguistic features of language. Therefore, in order to reach a higher level in the study of language features, it is necessary to use the methods and tools of pragmatic analysis.

Lexical repetition. Repetition of words or phrases gives emotion to the speech. For example: Coca-Cola! Rejoice, enjoy life!

Epiphora. An epiphora is a speech figure consisting of a repetition of the same element at the end of parallel-formed speech passages (verses). Not simple - clean, spotless (Ariel's laundry detergent). Tariff plan "First soum". This is the first tariff plan in the national currency.

Anaphora is a methodical application consisting of the repetition of the same word at

the beginning of parallel parts of speech (verses) [8, 134]. Your number is your business card. Unforgettable taste on unforgettable days. «To`xtaniyoz Ota» is the best. Stake is new life - new taste. Credit Standart Bank is new standards - new opportunities.

It should be noted that the creation of advertising slogans is a complex and logical process. The successful, influential slogans created in this process are not just a collection of beautiful words, but the result of effective work, the demands of the times, one of the unique linguistic expressions of a market economy.

The structure of the advertising text differs from other texts in terms of the level and scope of use of linguistic units. It is advisable to form the advertising text based on the nature of the language. Exact translation of advertising texts in another language does not always give the desired effect. Therefore, it is necessary to form an advertising text in our language by choosing units that differ in their lexical and semantic features.

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## **THE PRINCIPLES FOR MONITORING THE CONDITION OF WATER OBJECTS BY USING GEO INFORMATION SYSTEMS TECHNOLOGIES**

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### **ABSTRACT:**

The purpose of this article is controlling as well as monitoring the changes in the parameters of water bodies using geographic information systems with the use of space scanning and / or aerial photography. The usage of unmanned aerial vehicles (UAVs) when shooting allows you to specify the situation in the problem area.

Moreover, determine the pollution, the distribution of polluting agents in the space and time; determine the rate of occurrence of negative processes, solve the problems of comparability of the results of analyzes carried out by different methods; provide interested users with the information necessary for decision-making (operational and prospective) at various administrative levels.

**KEYWORDS:** Geographic Information Systems (GIS), monitoring, aerial photography, unmanned aerial vehicle (UAV),

### **INTRODUCTION:**

The deterioration of the ecological state of water bodies leads not only to their degradation, but also to problems of their water management. This happens against the background of a reduction in the network of observations in the state monitoring system, and weakening control over the impact of anthropogenic activities on water bodies [1]. Currently, issues related to identifying sources of negative impact, monitoring ongoing processes, both in the water bodies themselves and within their water protection territories, are relevant. The right solution of these issues, by restoring the network of observation

stations, seems to be insufficient, and even not possible. This is due to the nature and a number of consequences of anthropogenic influence:

- The number of sources of negative impact and their diversity has increased and continues to increase;
- The combined influence of several factors that worsen water quality is another serious cause of danger to water bodies, difficult to detect and develop protection methods. The influence of numerous negative factors, due to the actions of the laws of “Emergence” and “Bowlich” (Reimers, 1990), even with a subthreshold level of their impact on the system, can cause a qualitatively new negative effect;
- The role of causal relationships has increased. The latter leads to the fact that the consequences, caused earlier by any cause, or their combination, develop into causes. For instance, river pollution was initially observed in the connection of the influx of pollution from the wastewater (reason). This has led to the contamination of soil in the bottom stratum (consequence) and, at present, secondary pollution plays (has grown into the cause) a significant role in river pollution. Thus, bottom sediments became a source of pollution [2-4]

#### **BODY PARAGRAPH:**

In conditions when the interconnections and interdependencies in the techno-natural system are complicated, it is impossible to control in simple ways. The development of diverse structures and methods are required. This fully applies to monitoring, the basic requirements for which can be formulated as follows.

For the controlling the state of water bodies and justifying the parameters, initially it involves working with cartographic information and with attribute data about objects on the map. To solve such problems,

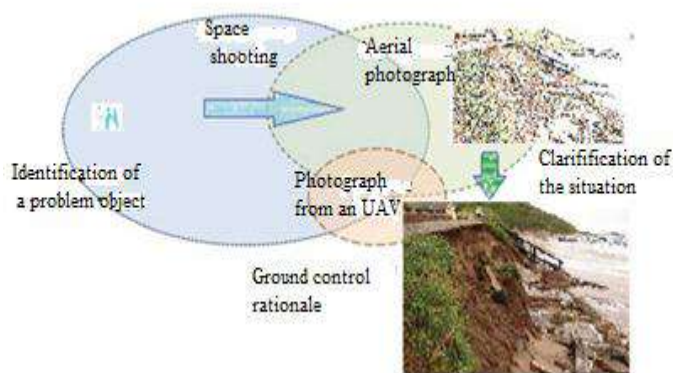
geoformation systems are widely used throughout the world [5]. To solve such a number of problems, it is advisable to consider GIS as a means of storing and processing information in a number of areas of knowledge (cartography, hydrology, geology, ecology, economics, etc.). The main advantage of geographic information systems is the ability to perform spatial analysis, i.e. conducting a series of operations on geo-data to obtain the information required for management decisions.

The constancy of controlling and covering of large areas through the use of stationary monitoring stations. The constancy of controlling and monitoring of large areas with the help of GIS can be achieved using space scanning and / or aerial photography. High-resolution space and aerial photographs make it possible to get a general idea of the condition of the object and identify possible problem areas, for example: flood conditions, the condition of territories, transfer of runoff, fire hazard, filling reservoirs, etc.). The use of unmanned aerial vehicles (UAVs), when shooting from low altitudes, allows you to specify the situation in the problem area by obtaining additional source data. Analysis of the information obtained will justify the decisions taken. [6]

The efficiency and reliability, against the background of relative simplicity and reduction of labor intensity, is achieved using multilevel control (space control "aero" ground), with partial duplication of information and sufficient frequency for practice. In accordance with the general principle of systemic research “from general to particular”, problem zones are localized, on which specific detailed studies are carried out.

Thus, the development of monitoring using data obtained with the help of GIS is proposed on the basis of continuous monitoring of changes in water bodies and

near water bodies using modern technical means of automation. Development of methods for predicting and assessing the state of objects suitable for different levels of monitoring, taking into account the feedback that is carried out by periodically monitoring the actual state [7]



Picture1. Scheme for tracking changes in water bodies

The monitoring scheme using GIS is as follows: A. Reconnaissance control - analysis of the general condition of water and land objects, with the simultaneous application of various methods: aerospace surveys, ground visual and instrumental surveys, biotesting and calculation methods. The goal is to assess the actual situation and the effects of anthropogenic activities over the past period, to evaluate the emerging trends in the state of the system and to clarify the relationship between the parameters determined by different methods. This control provides a “reference” binding to specific conditions (this type of control can be carried out 1 time in several years, once a year or period of the year, depending on needs). B. Constant monitoring of the situation (at least 1 time in 10 days) allows you to identify problem areas by analyzing ongoing changes and deviations from natural processes. A stationary network of observations, aerospace scanning methods are used with forecasting the situation by calculation methods [8].

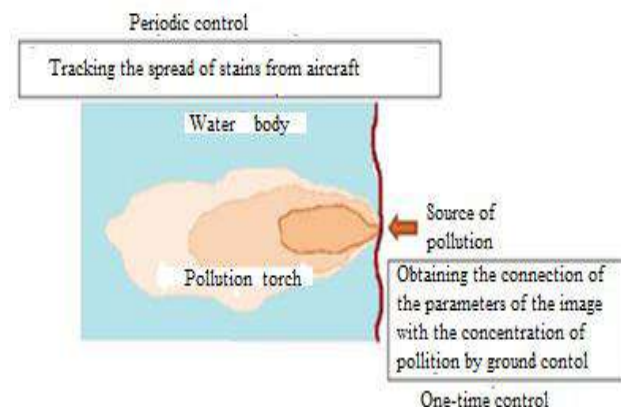


Figure2. The use of GIS for methods of monitoring different levels of pollution.

C. A one-time examination (as necessary) - observations in problem areas, hazardous foci through the use of high-resolution means to obtain parameters that specify the situation. D. Prediction of the situation on a permanent model of the water system. This allows you to use the information obtained to identify problem areas in which unacceptable deviations from the norm may occur.

The main idea of conducting monitoring studies is to form a block structure based on multi-level division of the territory using a set of tools. Modularity means the allocation of objects that are being monitored (water column, bottom soil, coastline, coastal territory, etc.). In each block, the whole complex of necessary observations is carried out. The data obtained for different blocks should be comparable with each other. Each unit uses the latest technical automation equipment (aircraft, ground-based observations and calculation methods) [9].

Multilevel is associated with the need to cover the entire territory of the investigated object and is built according to the scheme: from the general situation of a large-scale territory to detail, with partial duplication (clarification) of information.

This scheme using GIS allows you to obtain the necessary data for any object as a whole and its individual section, fill in the series of observations (for example, in the case

of loss of some data or missed observations), control the entire territory and obtain data that are spatially temporally comparable [8]

Monitoring is carried out at water bodies including their coastal territories, in the first place - coasts and water protection zones, water management systems and structures. The number of observation targets and their placement is determined by the principles of "Reasonable Sufficiency", "Efficiency", "Manageability" and "Feedback" (Reamers, 1990). This ensures the satisfaction of needs for the implementation of business tasks (the need for hydrological, hydro chemical, hydro biological information).

To conduct continuous monitoring of water bodies using GIS, it is necessary to install targets. The placement of control targets is based on the analysis of: natural environmental conditions; nature and intensity of anthropogenic impact; economic and environmental significance of the facilities. In this regard, the following monitoring zones are distinguished.

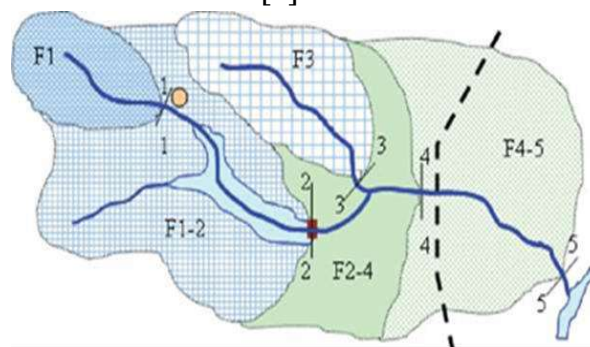
1. The zone of direct impact - areas of intensive channeling processes, the reformation of coastal territories, river estuaries and their individual sections, waterworks, places of wastewater discharges, flow of sewage, etc.
2. Zone of transit sections - control of water pollution in areas adjacent to zones of direct influence and falling under indirect influence. In these areas, the transformation and spread of pollution are monitored.
3. Background zones - outside areas of direct and indirect anthropogenic impact (for example, the upper reaches of rivers). [9]

Observations in these areas should allow the following information to be obtained: Identify the effects of anthropogenic impact (concentrated and dispersed, direct and indirect) and changes in the environment. In this case, observations are necessary in the

sources of impact, in the sections above and below the places of their influence on the river.

Analyze the data, evaluate and forecast changes in the state of the environment as a whole and its individual components. In this case, there is a need to obtain information about the natural (background) state of water bodies and their condition, taking into account the impact.

Observation shutters are installed in places (Fig. 3): lack of direct and indirect anthropogenic influence (or indirect influence is insignificant) - background targets; about the manifestation of processes of natural or anthropogenic origin (landslides, mudflows, flooding, erosion, etc.); on regulated water use planning. To develop an optimal control system based on minimizing the anthropogenic impact on the environment [9].



Picture3. An example of the appointment of targets for monitoring observations

- 1-1 - background target; 2-2 - hydrostatic target; 3-3 - the mouth of a large tributary; 4-4 - at the border of administrative entities or state divisions; 5-5 - estuary

**RESULTS:**

The obtained data should allow the formation of long-term series of controlled parameters of water bodies. In this case, the use of calculation methods is taken into account (especially for areas that are not constantly monitored by observations), including analogy methods against the background of zoning of the territory. Zoning is



carried out, for example, on the basis of typification of the main parameters (hydrological, hydrochemical) and conditions for the formation of water bodies. [10]

The scale of monitoring research using GIS is divided into levels, in accordance with the principle of "Hierarchy":

- Global is carried out on the basis of international cooperation (necessary, for example, for monitoring transboundary water bodies);
- National is carried out within the country and its large hinterland, basins of large and unique water bodies, water management systems of national importance;
- Regional is carried out within the river basins, intensively developed areas (for example, megacities);
- Local includes monitoring changes in the quality of the environment within the waterworks, a section of the water body;
- Impact is carried out within a particularly dangerous source. [10]

#### **CONCLUSIONS:**

Thus, each level of research with the help of GIS involves the control and monitoring of changes in the corresponding environmental parameters using space scanning and aerial photography.

As well as the use of unmanned aerial vehicles (UAVs), when shooting, it allows you to specify the situation in the problem area, which should allow you to: determine the pollution of various environments, the distribution of polluting agents in space and time; determine the rate of occurrence of negative processes, including the magnitude and speed of the spread of pollutant flows, possible ways of their transformation; solve the problems of comparability of the results of analyzes carried out by different methods; provide interested users with the information necessary for decision-making (operational

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## GRASS CARPS EMBRYONIC DEVELOPMENT UNDER CONDITIONS OF ARTIFICIAL REPRODUCTION IN TEMPERATE CLIMATE, UZBEKISTAN

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### ABSTRACT:

**Embryonic development of grass carp (*Ctenopharyngodon idella*) was studied; the species was introduced from China to Uzbekistan in the early 1960s. More than 10 generation changes were taken place in local conditions. Artificial reproduction by using gonadotropic stimulation of ripening and eggs incubation is main method to provide reproduction of the species in the country. Embryonic development passed normally. Embryonic development rate is some higher than in 1960-1980s in local conditions and higher than in the river Yangtze. Construction of water supply in hatchery provides more stable water temperature without noticeable changing in night.**

**KEYWORDS: grass carp, unfertilized egg, development, development, morula.**

### INTRODUCTION:

Grass carp (*Ctenopharyngodon idella* Val.) was introduced to Uzbekistan in the early 1960s as promising object for pisciculture and melioration in irrigation channels network. The species has the ability to adapt well in adverse environmental conditions and are known to have faster growth rate and high reproductive potency. Recently grass carp is one of the most important species in local fisheries (production is more than 3 thousand tons per year). Still 1960s, reproduction is conducted in a process called hypophyztion where inducing agent such (pituitary extract) is

administrated in the fish (Камилов, 1973; Камиловидр., 2003).

Knowledge about fish development process is essential for aquaculture. Therefore, studies on embryonic and early larval development are essential for successful artificial reproduction and fish seeds production (Makeeva, 1992; Balon, 1995; Nica et al., 2012). In Uzbekistan, studies of those processes for introduced common carp and silver carp were occurred in 1960s (Verigin et al., 1985). The aim of present work was to study grass carp embryonic and larval development under condition of artificial reproduction in Uzbekistan.

### MATERIALS AND METHODS:

The research was conducted in Fish hatchery of Uzbekistan Research Institute of Pisciculture, Tashkent region, Uzbekistan, from May to June 2019.

In March, breeders of both species were fished in wintering ponds and stocked to ponds for before spawning keeping; females and males were stocked separately by sex to different ponds and kept there up to reproductive company. Routine technological management was done (Sbornik..., 1986). On May the 13<sup>th</sup>, 5 females and 5 males (at age 4-5-years old, 4-5.2 kg of total weight) were selected by sexual dimorphism and spawning readiness and transported to reproductive unit of hatchery. At 17:30, first dose of pituitary gland extract (0.3 mg/kg of fish body weight) had been injected for hypophyztion of grass carp females. At 10:45

(May the 14th) second dose for female (2 mg/kg) and single dose (3 mg/kg) for males were injected. After 12 hours fish were stripped out for the collection of matured egg and sperm in a plastic bowl. Females have given 580 – 1280 g of ovulated eggs. At 22:50, fertilization was done through mixing by shaking the bowl several times, the ovulated eggs were transferred into “Amur” (200 liters) incubation jars (0.8 - 1 mln of eggs / jar).

After fertilization, during 20 hours every 30 minutes of interval, the incubated eggs were observed to identify the developing stage (Makeeva, 1992). Later the eggs were observed at every hour of interval up to larvae exogenous feeding. All the sampled eggs and larvae were preserved in 0.1% formalin in plastic container. In the laboratory, egg and larvae samples were taken in separate slides with the help of brush. Optical microscope was used to observe embryonic and larval developmental stages. At the same time, measurement (diameter and length of egg and larva) were taken using apparatus for microfilm reading “Microfot-5 PO-1” with magnification 10\*. Time of following stage approach was marked when less than 50 % of eggs in sample reached that stage.

## RESULTS:

There are 4 basic phases (periods) of fish life cycle which are Embryonic Phase, Larval Phase, Fry Phase, Adult Phase and Senescence. According to A. Makeeva (1998), the Embryonic Phase includes (I) egg

activation and blastodisc formation; (II) cleavage, (III) blastula; (IV) gastrula; (V) organogenesis; (VI) tail bud; (VII) embryonic respiratory system, (VIII) gill-arch and jaw development (last stage often is separated to subperiod of out of egg cell development).

Water quality. During the period of reproductive company, water temperature was 21.1 – 23.1°C in ponds and 21.8-24.6°C in incubation jars. Level of dissolved oxygen 5,16 – 6,4 mg/l.

The grass carp early development had two primary periods, embryonic and posthatch. The characteristics of various stages of embryonic development were described as follows (Table 1).

Stage I: egg activation occurred, cytoplasm formed blastodisc at animal side.

Stage II (cleavage): included series of mitotic divisions of cell nucleus and cytoplasm without cell growth; consecutively 2-, 4-, 8-, 16-cell formed. Those four divisions occurred like meridians; following fifth division was parallel to yolk sac equator and led to generation of 32-, 64-, 128-, 256-cell stages. At the morula stage (64-256-cells), cells became smaller, the blastodisc was appeared mound-like and raised above the yolk, and the cytoplasm disappeared.

Stage III (blastula) included continuing divisions, the cell differentiation appeared. At the early-blastula stage, the blastodisc formed a half-sphere. At the late-blastula stage, the blastodisc began flattening and gradually expanded over the yolk.

Table 1. Timetable of embryonic and larvae development of grass carp in different environments.

Embryonic and larvae development stages	Time after fertilization (hours : minutes)		
	Uzbekistan, 1960s	the Yangtze River	Our data
Blastodisc formation	0 : 40	-	0 : 40
Stage II (cleavage):			
2- cells	1 : 00	-	1:20
4 – cells	1 : 20	1 : 05	2 : 00
8 – cells	1 : 40	1 : 20	1 : 30
16 - cells	2 : 00	1 : 40	1 : 50
Large cell morula	2 : 30	2 : 45	2 : 00
Small cell morula	4 : 50	3 : 50	2 : 50
Blastulla	6 : 00	4 : 50	3 : 30
Early gastrula	7 : 10	8 : 55	4 : 00
Yolk plug (Blastopore closure)	12 : 10	10 : 30	9 : 20
Opticprimordium, notochord		12 : 50	14 : 45
Opticvesicle		16 : 05	17 : 00
Olfactory placode, tailbud	29 - 32 h	19 : 15	27 : 00
Hatching	34 : 00	37: 00	34: 30
Embryonic vascular system development	51: 00	47 : 00	47 : 40
Branchial – maxillary apparatus development	76 – 96 h	83: 00	68: 00
Larvae period			
Mixed feeding	108 – 144 h	167 : 00	82 : 00
Exogenous feeding	168 : 00	190: 00	122 : 00

Stage IV (gastrula) included process of homogeneous blastoderm division to germ rings. At 5 hours and 30 min after fertilization the blastoderm covered about 1/3 of the yolk cell, and the whole egg appeared round.

Stage V (organogenesis). The blastoderm (embryo body) covered almost the whole yolk, the head part was clearly visible, and the organ differentiation began: the notochord was clearly visible, the optic primordium was a long oval shape and clearly visible, somites appeared and numbered, the somite number was 10-13 pairs, nerve cord laid.

Stage VI (tailbud stage): the tail bud appeared, the eyes enlarged, the brain rudiment differentiated slightly, somites formed in tail bud. During this stage the heart rudiment appeared, the melanin was appeared; the unpaired fin fold rounded back part of embryo body. The muscular-effect was visible,

the embryo elongated, the embryo lashed occasionally.

Stage VII (embryonic vascular system development): the heart had two pulsating sections, the branchial arch laid, and the melanophore appearance on the head and back of embryo was visible. The head rectification occurred. The preanal fold was visible. The embryo rotated continuously. The embryo was ready to hatch.

Stage VIII (branchial – maxillary apparatus development). Hatching was noticed. Total length was 6.09 mm. The yolk sac was light in color and slightly transparent, the anterior portion of yolk sac was large, the posterior - narrow. Development of branchial and maxillary apparatuses was occurred. The air bladder bud was visible. Firstly mouth was presented as small pit, later the branchial arch were visible. The head extended straight out from the body. Eyes were pigmented (black).

The larvae still usually rested on the bottom but occasionally swam.

Further larvae period began with several successive development stages.

Stage I (mixed feeding). Back part of the air bladder filled with air, the larvae body straightened and rounded by unpaired fin fold. The pectoral fins enlarged. The yolk sac remained only as a narrow strip. The mouth was open and moved forward. The lower jaw began movement. Melanophores extended larvae body. The differentiation of maxillary was noticed, feeding began. The pectoral fin enlarged. Dorsal and anal finfolds began to separate from the caudal finfold. Larvae were able to swim normally.

Stage II (exogenous feeding, unpaired fin fold differentiation). The yolk sac was absorbed, the larvae fed with external food. The jaws were formed. The gill cover was formed. The provisory respiratory system organs reduced. The anterior portion of the dorsal finfold continued to differentiate and melanophores increased.

Stage III (rays in unpaired fin development). The initial rays were visible in unpaired fins, firstly in the caudal fin then in dorsal and anal ones. The posterior tip of the notochord curved slightly upward. The posterior margin of the caudal fin fold was crenulated. The operculum completely covered the gills. The ventral fin laid.

Stage IV (rays development in paired fins). The dorsal and anal fins were differentiated, the caudal fin was deeply forked, the pelvic fin lengthened and extended beyond the preanal finfold. The preanal finfold shrank slightly. The vertebral column was fully formed. The squamation stage began. Further silver carp entered the fry period.

## DISCUSSION:

Grass carp is one of the most important cultured species in global freshwater aquaculture which is based on high adaptive potential of those species. At the same time, knowledge of biology peculiarities in specific region is the base for artificial reproduction. In Uzbekistan (Central Asia), artificial reproduction technology of both species is conducted since 1960s (Kamilov et al., 2003). Broodstocks consist from 3-5-year-old males and females, after that elder and larger fish are sold as high quality marketable good. Due to this method of broodstock formation used in the country, more than 10 generations of those invasive objects were completely changed in local environments. As our research has shown, grass carp has found favourable environments for embryonic and further development in Uzbekistan; adaptive potential of those species was enough to habitat under specific local conditions of semi-intensive aquaculture.

Suitable season for the grass carp reproduction occurs since the May, when water temperature warm up to 21 – 22°C. We compared our data of recent grass carp embryonic development with those from 1960s in Uzbekistan (breeders form introduced generation) and those from native area (River Yangtze, China) (table 1). Recently in Uzbekistan grass carp embryonic development passed normally. A blastodisc division begin during the first hour after fertilization, stages of morula – after 2 hours, blastula – 3.5 hours, gastrula - 4 hours, organogenesis – 14 hours, larvae hatching occurs after 34 hours after fertilization at water temperature 21-23°C, transition to mixed feeding of larvae – after 4 hours, to exogenous feeding – after 5 days.

Recently, embryonic development slightly increased in compare with 1960s. In pisciculture conditions of Uzbekistan, grass carp eggs develop noticeably faster than in the

River Yangtze (Yi et al., 2006). We relate that with more stable (in daytime and night) water temperature in incubation jar in fish hatchery. Water warms in pond from which it pumps to tanks (with total volume 90 t) then leads to incubation jars and do not cool strongly in the night. Construction of incubation unit use long-term experience in eggs incubation in the country.

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## SOLVING EXTREMINE PROBLEMS IN EXTRACURRICULAR ACTIVITIES

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### ABSTRACT:

This article highlights the largest and smallest quantities values in a secondary school mathematics course in the maximum and minimum issues encountered in human practice and how to solve them.

**KEYWORDS.** Minimum, maximum, extreme, logic, perimeter, area, volume.

### INTRODUCTION:

Nowadays, at a rapid development science time, personnel's training in line with modern requirements has become one of the urgent tasks. The today's educator's task is to educate students in secondary schools in a competent way to higher education and to ensure a high level of modern teaching technologies mastery. Therefore, it is necessary to organize lessons in secondary schools to the extent that they can solve problems in mathematics teaching.

The maximum and minimum problems are the main modern mathematics problems and have their place in high school mathematics. Due to the students' inability to cover some maximum and minimum problems and their solutions during the lesson, they have to see such materials in extracurricular activities or in math classes.

In the mathematics circle for 11th graders, we will discuss the following comments and issues on the topic of "Solving maximum and minimum problems".

Students are first reminded the theorems on the largest product and the smallest sum.

**Theorem 1.** If the sum of the positive variables  $x$  and  $y$  does not change, then when  $x = y$ , their product  $xy$  has the largest value.

Proof. Let be  $x > y$ ,  $x > 0$ ,  $y > 0$  and  $x + y = a$ .

Itsknown,

$$x = y, \quad (x + y)^2 = x^2 + y^2 + 2xy, \\ (x - y)^2 = x^2 + y^2 - 2xy.$$

We divide these equations from the first to the second:  $(x + y)^2 - (x - y)^2 = 4xy$

$$\text{or } xy = \frac{1}{4} [(x + y)^2 - (x - y)^2] \quad (*)$$

$$\text{If } x + y = a \quad xy = \frac{1}{4} [a^2 - (x - y)^2]$$

If the expression  $(x - y)^2$  has the smallest value, that is, if  $(x - y)^2 = 0$

or  $x = y$ , then the middle bracket to the right of equation (\*) has the largest value. The middle bracket on the right side of the equation has the largest value.

**Problem.** There are a number of building materials available to build house. Using these materials, you should build a house with the largest rectangular face possible.

**Solution.** U The base  $y$  is a rectangle whose sides we denote by  $x$  and  $y$ . Conditionally,  $2x + 2y = 2p$ , the perimeter of the rectangle does not change. The face of a rectangle is  $S = xy$ .

According to the above theorem, if  $x + y = p$  is  $2x + 2y = 2p$ , that is, if the



rectangle is square, then the product  $xy$  has the largest value.

This means that when the base of a house is square, its area is the largest.

**Theorem 2.** If the product of the positive variables  $x$  and  $y$  is  $xy = a$ , then when  $x = y$ , their sum  $x + y$  is the smallest.

Proof. (\*) from equality:

$$(x + y)^2 = 4xy + (x - y)^2 \quad \text{or}$$

$$(x + y)^2 = 4a + (x - y)^2 \quad (**)$$

If  $x > 0$  and  $y > 0$   $x + y$  with  $(x + y)^2$  at the lowest value at a time, that is, at the smallest value of  $(x - y)^2$  to the right of the equation, or when  $x = y$ .

**Problem.** Is the perimeter of the square the smallest of rectangles with the same face?

**Solution.** Let  $x$  and  $y$  be the sides of a rectangle. Conditionally its face  $xy$  is not changed.

Based on theorem 2  $2x + 2y = 4S$  - if it does not change,  $2x = 2y$  or  $x = y$  the perimeter of a rectangle  $2(x + y) = 2x + 2y$  will have the smallest value. This value belongs to the square. Let's look at cases where the number of variables is 3 and 4. Let's imagine  $x_1, x_2, x_3, x_4$  given positive variables. Their sum  $x_1 + x_2 + x_3 + x_4 = 4a$  is constant. Their sum  $x_1 \cdot x_2 \cdot x_3 \cdot x_4$  is the largest.

If  $x_1 = x_2 = x_3 = x_4$   $x_1 \cdot x_2 \cdot x_3 \cdot x_4$  we prove that the product has the greatest value.

Proof.

$$\text{If } x_1 + x_2 + x_3 + x_4 = 4a \quad x_1 + x_2 \geq 2a,$$

it will be  $x_3 + x_4 \leq 2a$   $x_3 + x_4 \leq 2a$ , i.e. if

$$x_1 + x_2 = 2a + 2b \text{ is } \quad x_3 + x_4 = 2a - 2b,$$

here  $a > b \geq 0$ .

Based on Theorem 1, if  $x_1 + x_2 = 2(a + b)$  if it does not change, if  $x_1 = x_2 = a + b$

$x_1 \cdot x_2 = (a + b)^2$  is the largest. As same, if

$$x_3 = x_4 = a - b \quad x_3 = x_4 = a - b$$

$$x_3 \cdot x_4 = (a - b)^2$$

is the largest.

Therefore,

$$x_1 \cdot x_2 \leq (a + b)^2, \quad x_3 \cdot x_4 \leq (a - b)^2$$

From that

$$x_1 \cdot x_2 \cdot x_3 \cdot x_4 \leq (a + b)^2.$$

$$(a - b)^2 = (a^2 - b^2)^2 \leq a^4, \text{ i.e.}$$

$$\text{if } x_1 \cdot x_2 \cdot x_3 \cdot x_4 \leq a^4. \quad x_1 = x_2 = x_3 = x_4$$

$$\text{is } x_1 \cdot x_2 \cdot x_3 \cdot x_4 = a^4. \text{ So}$$

if  $x_1 = x_2 = x_3 = x_4$ ,  $x_1 \cdot x_2 \cdot x_3 \cdot x_4 = a^4$  is the largest.

Let the number of variables be 3: if  $x_1 + x_2 + x_3 = 3a$

$$\text{and } x_4 \cdot a \quad x_1 + x_2 + x_3 + x_4 = 4a$$

$$x_1 = x_2 = x_3 = a$$

$$\text{and } x_1 \cdot x_2 \cdot x_3 \cdot x_4 = a^4$$

or  $x_1 \cdot x_2 \cdot x_3 = a^3$  is the largest.

**3<sup>rd</sup> problem.** Determine the largest volume between right-angled parallelepipeds of the same full surface.

**Solution.** Let  $x, y, z$  be the sides of a parallelepiped. In this case, the face of its full surface is  $S = 2(xy + xz + yz)$  and the volume is  $V = xyz$ . Therefore, when  $S$  is constant, the values of  $xy$  and  $z$  must be chosen so that  $V$  is the largest.

We use the above theorems. It is known that when  $x > 0, y > 0, z > 0$ ,

$V = xyz$  and  $V^2 = (xyz)^2$  reach the maximum values at the same time.

Therefore, when  $xy = xz = yz$ , the product  $V^2 = (xy) \cdot (yz) \cdot (xz)$  reaches its maximum value when  $xy + yz + xz = \frac{S}{2}$  is constant. It

follows that it is  $x = y = z$ . This means that the cube has the largest capacity among right-angled parallelepipeds with the same full surface.

It is important to solve simple problems as much as possible in the circle, to move from simple to more complex problems and to teach to solve them. Below is a simple problem that can be suggested to the reader in its various forms.

**Problem.** There is a square plywood with side  $a$ . The same squares are cut from the four ends of the square, and the rest is made into an open box. When the side of the truncated square is part of the side of the given square, what is the maximum size of the box?

**Solution.** Let  $x$  be the truncated square side (Figure 1)

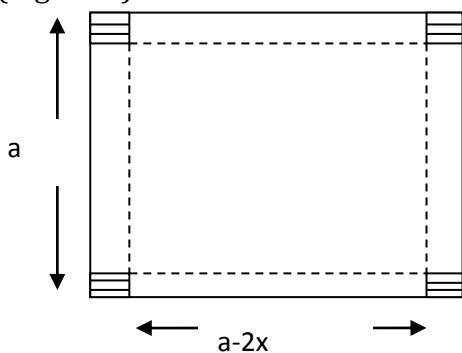


Figure 1.

Then the box size is  $y = x(a - 2x)^2$ . To find the maximum value of this, we make the following changes to the form:

$$4y = 4x(a - 2x)(a - 2x).$$

Since the factors sum

$4x + (a - 2x) + (a - 2x) = 2a$  is constant,  $4y$  reaches its maximum value when  $4x = a - 2x$ .

$$4x = a - 2x; \quad x = \frac{a}{6}, \quad y_{\max} = \frac{2}{27} a^3.$$

This means that the box has the largest size when the side of the cut square is  $\frac{1}{6}$  of the side of the given square.

From the above, it can be seen that problem-solving in mathematics a lesson broaden students' horizons, broadens their interrelationships understanding between mathematics and special subjects, and increases their interest in the profession. This will develop the professional competence of future teachers.

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## **THE INFLUENCE OF SUPERVISION, AWARDS, TRUST, AND WORK RESPONSIBILITY ON EMPLOYEE ACHIEVEMENT**

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### **ABSTRACT:**

This research was conducted at Manado State University which includes all employees at each Faculty and Postgraduate Program, activity centers, and institutions as well as at the Head Office. The research period lasted for 6 (six) months including pre-survey in order to create a sampling frame. This research was conducted from July 2011 to December 2011. In this study, there were two independent variables called exogenous variables, namely supervision and reward, two intervening variables, namely trust and job responsibility, and one dependent variable called endogenous variables, namely employee performance. The analytical method used to test the hypothesis in this study uses a path analysis technique (path analysis) or standardized multiple regression and is calculated through the SPSS 16.0 program. Data was analyzed s average item and then averaged back dala m any indicator, then do the test requirements analysis.

The results showed: 1) There is a positive direct effect of supervision on employee work performance, meaning that an increase in supervision causes an increase in the quality of employee work performance. 2) There is a positive direct effect of rewards on employee work performance, meaning that an increase in the reward system can lead to an increase in the quality of work performance. 3) There is a positive direct effect of trust on employee work performance, meaning that an

increase in trust can lead to an increase in the quality of employee work performance. 4) There is a positive direct effect of job responsibility on employee work performance, meaning that an increase in employee work responsibility can lead to an increase in the quality of performance of the employee church. 5) There is a positive direct effect of supervision on employee work responsibility, meaning that an increase in supervision can lead to an increase in the quality of employee work responsibility. 6) There is a positive direct effect of appreciation on employee work responsibility, meaning that an increase in the reward system can lead to an increase in the quality of employee work responsibility. 7) There is a positive direct effect of trust on employee performance, meaning that an increase in trust can lead to an increase in the quality of employee work performance. 8) There is a positive direct effect of supervision on employee trust, meaning that an increase in supervision can lead to an increase in the quality of employee trust. 9) There is a positive direct effect of appreciation on employee trust, meaning that an increase in the quality of the award can lead to an increase in the quality of employee trust.

**KEYWORDS:** supervision, reward, trust, and work performance responsibility for employees.

## INTRODUCTION:

Lowprestation employee in the Manado State University looks at p roses student affairs is often delayed, which is often too late test file is processed, employees often come late in kantor, a reflection of the achievements employees is low. Among Manado State University (UNIMA) students, complaints about employee performance are often heard. Postponement of service to students, such as in the case of final examination correspondence, scholarship arrangements, information needed by students, provision of student cards that are often late, management of KRS and class lists, poor service behavior, and so on, are land issues that describe a work achievement. less professional. Employees as human capital in the management of the UNIMA organization play an important role for the advancement of the implementation of professional higher education.

Determine the achievement of employees, researchers more interested in learning, whether poor work performance of employees caused by supervisory less attention. This is necessary because the maximum supervision peg through can do a good job. In addition, it will learn about the awards given to employees. By paying attention to the appreciation of each employee, they can improve their work performance. Meanwhile, other factors that attract researchers are trust and work responsibility. If employees have the confidence and good work responsibility, then the employee will continue to improve their work performance as the place where they work.

## LITERATURE REVIEW:

### 1. Job performance concept:

Wibowo (2009) explains that work performance is the result of work that has a strong relationship with organizational

strategic objectives, customer satisfaction, and contributes to the economy. Adam (1989) states that work performance is a combination of motivation and ability to complete a person's job or achievement depending on the desire to achieve and the ability concerned to do it. The achievement motive is one of the three motives in humans and according to Robbins (1996) completely, namely the motive for achievement, the motive for affiliation, and the motive for power. It is stated that the motive for achievement is reflected in its orientation towards goals and devotion for the best possible achievement of goals.

Pace and Faules (1998) explain that work performance is how it does everything related to a job, position or role in an organization. There are two types of behavior that include the essential elements of performance, namely functional tasks and behavioral tasks. Functional tasks are related to how well an employee completes the ins and outs of the job, including especially completing the technical aspects of the job. Behavioral tasks related to how well employees deal with activities between another member or employee, including resolving conflict, managing time, empowering others, working in a group, and to work independently.

### 2. Supervision:

Supervision is a management function that also has a close relationship with other management functions, especially with the planning function. The function of planning activities precedes supervision in which planning influences and influences supervisory activities, while effective supervision provides feedback for planning in the event of changes in standards and inconsistent inputs. (Silalahi, 2002)

The concept of supervision from Mockler above emphasizes three things, namely (1)

there must be a plan, standard or objective as a benchmark to be achieved, (2) there is a process of implementing work to achieve the desired goals, (3) there is an attempt to compare what has been achieved with the standards, plans, or objectives that have been set, and (4) take the necessary corrective actions. Thus, Mockler's concept of supervision shows that there are activities that need to be planned with benchmarks in the form of criteria, norms and standards, then compared, which ones require correction or improvements.

### **3. Awards:**

Experts use different terms to represent awards given to employees or employees. Luthans (2006) states that organizational rewards have a number of different forms including money (salaries, bonuses, incentives) and rewards. One of the awards is recognition, where in addition to salary and job satisfaction, recognition of performance is important. Money has long been viewed as a reward and for some it is more important than anything an organization can give including a school.

Newman and Hodgetts (1998) found through their research that workers have placed good wages at the top of the list of important job factors. Daft (2003) mentions award as which refers to: (1) any payment of money, and (2) all goods or commodities to be used based on the value of money to reward employees. This opinion is also in line with Jiang, who stated that the award is the compensation received by workers from the organization for the services provided.

### **4. Trust:**

Trust is a process of historical dependence based on relevant experiences, although limited. Hope takes time to form, build up bit by bit, and accumulate. Most people find it difficult, if not impossible, to trust someone

directly, if they don't know anything about someone else to trust. In the extreme, if someone does not know, he can speculate but that does not mean that he has trusted. This is in line with Colquitt et al. (2007) who explain that trust consists of trustworthiness and a tendency. In other words, trust will be given if a person has trustworthiness and tends to be trusted.

Robbins further explained that there are three types of trust in organizational relationships, which are based on fear, knowledge and identification. Fear-based trust is the most fragile relationship because violations and inconsistencies can destroy the relationship. This belief is based on fear of retaliation if the trust is violated. People who are in this type of relationship do as they say because they fear the consequences of not fulfilling their full obligations. Fear-based belief will function only to the degree that the punishment is possible, the consequences are clear, and the real punishment is imposed if the trust is violated.

### **RESEARCH METHODE:**

This research was conducted at Manado State University which includes all employees at each Faculty and Postgraduate Program, activity centers, and institutions as well as at the Head Office. The research period lasted for 6 (six) months including pre-survey in order to create a sampling frame. This research was conducted from July 2011 to December 2011. In this study, there were two independent variables called exogenous variables, namely supervision and reward, two variables, namely trust and job responsibility, and one dependent variable which was called an endogenous variable, namely employee performance.

The statistical analysis technique used is path analysis. The analysis was performed using correlation and regression.

**a. Path Diagram:**

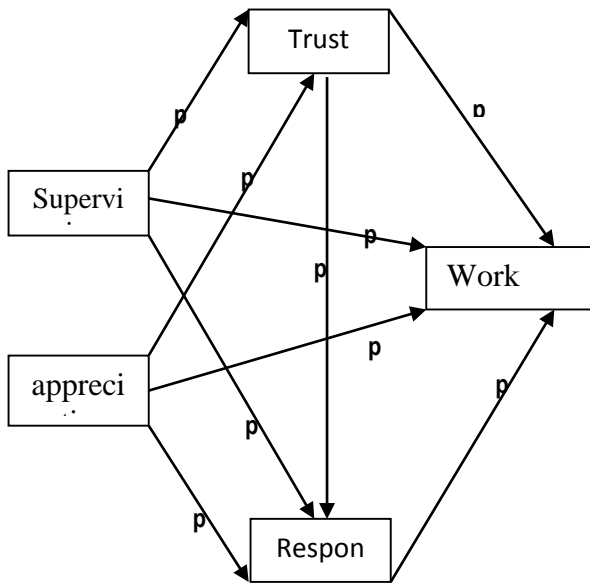


Figure 1. Model Relations between variables

**Information:**

- Variable X<sub>1</sub> = Supervision
- Variable X<sub>2</sub> = Peng reward system
- Variable X<sub>3</sub> = Trust
- Variabel X<sub>4</sub> = Responsibility Work
- Variable X<sub>5</sub> = Employee Work Performance

**b. Seek direct influence:**

To find the direct influence between the variables from the path diagram image, an equation must first be made (Chun and Solimun), the form of the equation is as follows:

$$X_5 = p_{51}.X_1 + p_{52}.X_2 + p_{53}.X_3 + p_{54}.X_4 + \varepsilon_5$$

$$X_4 = p_{41}.X_1 + p_{42}.X_2 + p_{43}.X_3 + \varepsilon_4$$

$$X_3 = p_{31}.X_1 + p_{32}.X_2 + \varepsilon_3$$

The population of this study were 476 administrative staff. Because the population size is relatively very large, in this study researchers need to draw a number of samples. To determine the sample size, researchers used the following Yamane formula.

(N = total population; d = level of precision; n = sample size)

By setting a precision of 10% sample size of:

$$n = \frac{476}{476(0,1)^2 + 1} = \frac{476}{5,76} = 82,638 = 83$$

The analytical method used to test the hypothesis in this study uses a path analysis technique (path analysis) or standardized multiple regression and is calculated through the SPSS program 16.0. Data was analyzed s average item and steering an averaged, then do the test requirements analysis.

**RESULTS EMPIRICALLY N AND PEMBAHASAN:**

**1. Achievement work (X<sub>5</sub>):**

Based on the data obtained in the field and processed statistically into a frequency distribution list with the number of classes calculated according to the Sturges rule, 6 classes were obtained (see table 4.1) with a maximum score of 118 and a minimum score of 101 so that the range of scores obtained was 17. The results of the descriptive statistical calculation show that the work performance variable has a mean value of 111.76 with a standard deviation of 0.385, a mode of 114.00 and a median of 112.00. Based on this value, a frequency distribution table is created as follows.

Table 1 Frequency distribution of work performance variables

No.	Interval	Frequency Absolute	Relative Frequency	Cumulative Frequency
1.	101 - 103	2	2.41	2.41
2.	104 - 106	7	8.43	10.84
3.	107 - 109	10	12.05	22.89
4.	110 - 112	24	28.92	51.81
5.	113 - 115	30	36.14	87.95
6.	116 - 118	10	12.05	100.00
<b>Total</b>		<b>83</b>	<b>100</b>	

Based on the table above, it can be seen that the highest absolute frequency is in the interval class 113 - 115 as many as 30 respondents and the relative frequency is

36.14%. The number of the smallest absolute frequency seen in grade interval 101-103 as two respondents with relative frequency of 2.41%. The results of the frequency distribution analysis are also shown in graphic form below.

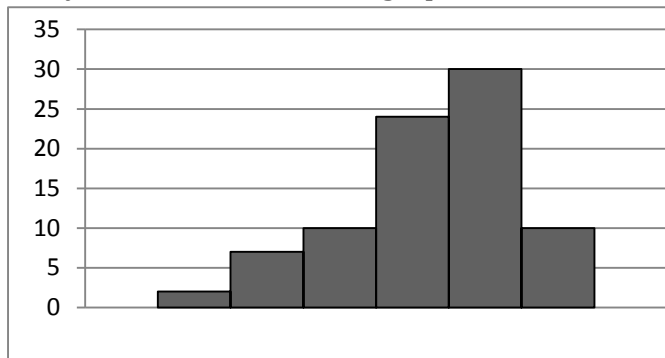


Figure 2 Histogram of work performance

## 2. Supervision (X1):

Based on the data obtained in the field and processed statistically into a frequency distribution list with the number of classes calculated according to the Sturges rule, 8 classes were obtained (see table 4.2) with a maximum score of 126 and a minimum score of 11 so that the range of scores obtained was 15. The results of descriptive statistical calculations show that the control variable has a mean value of 119.34 with a standard deviation of 0.361, mode 121.00 and a median of 120.00. Based on this value, a frequency distribution table is created as follows.

Table 2 Frequency distribution of monitoring variables

No.	Interval	Frequency Absolute	Relative Frequency	Cumulative Frequency
1.	111 - 112	1	1.20	1.20
2.	113 - 114	11	13.25	14.46
3.	115 - 116	4	4.82	19.28
4.	117 - 118	9	10.84	30.12
5.	119 - 120	19	22.89	53.01
6.	121 - 122	28	33.73	86.75
7.	123 - 124	10	12.05	98.80
8.	125 - 126	1	1.20	100.00
	<b>Total</b>	<b>83</b>	<b>100</b>	

According to the table above, it appears that the highest absolute number of frequencies

contained in the class interval 121 - 122 were 28 respondent and relative frequency of 38,73 %. The number of the smallest absolute frequency intervals shown in class 111-112 and 125-126 respectively as first responder with the relative frequency of 1.20 %. The results of the frequency distribution analysis are also shown in graphic form below.

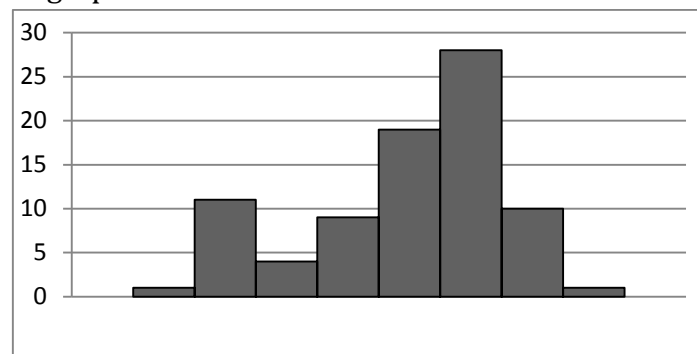


Figure 3 The surveillance histogram

## 3. Award (X2):

Based on the data obtained in the field and processed statistically into a frequency distribution list with the number of classes calculated according to the Sturges rule, 7 classes were obtained (see table 4.3) with a maximum score of 120 and a minimum score of 101 so that the range of scores obtained was 19. The results of the calculation Descriptive statistics show that the reward variable has a mean value of 111.08 with a standard deviation of 0.424, a mode of 114.00 and a median of 111.00. Based on this value, a frequency distribution table is created as follows.

Table 3 Frequency distribution of reward variables

No.	Interval	Frequency Absolute	Relative Frequency	Cumulative Frequency
1.	101 - 103	3	3.61	3.61
2.	104 - 106	9	10.84	14.46
3.	107 - 109	16	19.28	33.73
4.	110 - 112	22	26.51	60.24
5.	113 - 115	23	27.71	87.95
6.	116 - 118	8	9.64	97.59
7.	119 - 121	2	2.41	100.00
	<b>Total</b>	<b>83</b>	<b>100</b>	

According to the table above, it appears that the highest absolute number of frequencies contained in the class interval 113 - 115 as much as 23 respondent and relative frequency of 27.71 %. While, the number of the smallest absolute frequency seen in grade interval 119 - 121 as much as 2 respondents with a relative frequency of 2.41 %. The results of the frequency distribution analysis are also shown in graphic form below.

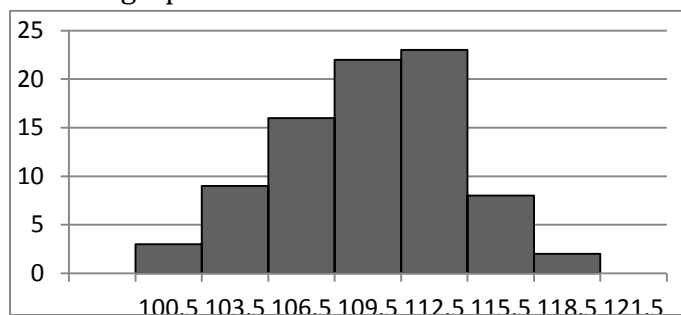


Figure 34 Award histogram

#### 4. Trust (X3):

Based on the data obtained in the field and processed statistically into a frequency distribution list with the number of classes calculated according to the Sturges rule, 7 classes were obtained (see table 4.4) with a maximum score of 118 and a minimum score of 105 so that the range of scores obtained was 13. Descriptive statistics show that the trust variable has a mean value of 114.53 with a standard deviation of 0.289, a mode of 116.00 and a median of 115.00. Based on this value, a frequency distribution table is created as follows.

Table 4 Frequency distribution of trust variables

No.	Interval	Frequency Absolute	Relative Frequency	Cumulative Frequency
1.	101 - 103	1	1.20	1.20
2.	104 - 106	2	2.41	3.61
3.	107 - 109	5	6.02	9.64
4.	110 - 112	9	10.84	20.48
5.	113 - 115	13	15.66	36.14
6.	116 - 118	34	40.96	77.11
7.	119 - 121	19	22.89	100.00
	<b>Total</b>	<b>83</b>	<b>100</b>	

According to the table above, it appears that the highest absolute number of frequencies contained in the class interval 116 - 118 as much as 34 respondent and relative frequency of 40.96 %. While, the number of the smallest absolute frequency seen in grade interval 101 - 103 as one respondent to the relative frequency of 1.20 %. The results of the frequency distribution analysis are also shown in graphic form below.

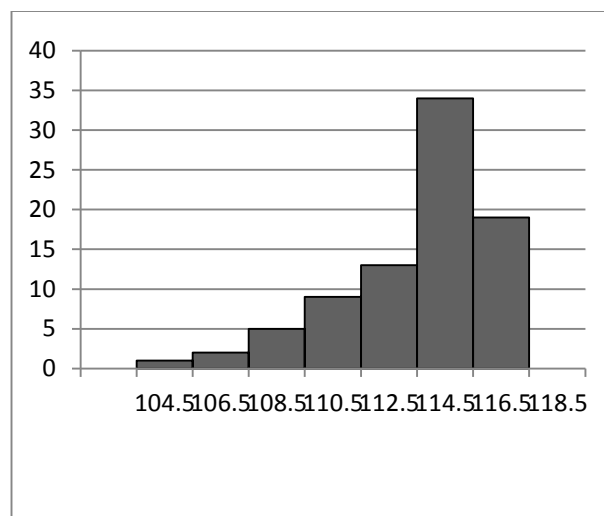


Figure 5 Trust histogram

#### 5. Responsibility work (X4):

Based on the data obtained in the field and processed statistically into a frequency distribution list with the number of classes calculated according to the Sturges rule, 7 classes were obtained (see table 4.4) with a maximum score of 127 and a minimum score of 106 so that the range of scores obtained was 19. Descriptive statistics show that the responsibility variable has a mean value of 119.93 with a standard deviation of 0.412, a mode of 122.00 and a median of 121.00. Based on this value, a frequency distribution table is created as follows.



Table 5 Distribution of the frequency of work responsibility variables

No.	Interval	Frequency Absolute	Relative Frequency	Cumulative Frequency
1.	107 - 109	1	1.20	1.20
2.	110 - 112	3	3.61	4.82
3.	113 - 115	7	8.43	13.25
4.	116 - 118	14	16.87	30.12
5.	119 - 121	22	26.51	56.63
6.	122 - 124	35	42.17	98.80
7.	125 - 127	1	1.20	100.00
	<b>Total</b>	<b>83</b>	<b>100</b>	

According to the table above, it appears that the highest absolute number of frequencies contained in the class interval 122 - 124 35 respondent and relative frequency of 42.17 %. The number of the smallest absolute frequency seen in grade interval 107 - 1 09 as one respondent to the relative frequency of 1.20 %. The results of the frequency distribution analysis are also shown in graphic form below.

**DISCUSSION:**

Based on the results of the data analysis described above, it can be seen that all the paths in the developed model have a significant positive correlation or it can be explained that the model can be used to predict the work performance of employees at Manado State University. In other words, it can be concluded that the variables of supervision, appreciation, trust and responsibility affect employee performance. The difference lies in the contribution of each variable in influencing employee work performance. The results of the analysis show that the variable that has the greatest contribution based on the standardized coefficient  $\beta$  is the control variable.

This proves that supervision by superiors that is carried out consistently is one of the factors that can improve employee performance. In line with the results of this study, Luthans explained that supervision is another important

source of job satisfaction. Meanwhile, George and Jones emphasized the supervisory function in evaluation. It is said that the end of controlling, managers monitor and evaluate individual, group, and organizational performance to see if organizational goals are being achieved.

The results of data analysis that have been described above also show that there is a positive influence on the reward variable on the work performance of employees at Manado State University. In other words, giving rewards in the form of incentives, allowances, promotions or promotions can boost employee performance. Award is one of the factors that can support the improvement of employee work performance. In performing their duties, employees always expect rewards or rewards for their achievements. The more appropriate the award received with the employee's expectations for the task or job that the employee carries out, it will be able to encourage employees to carry out their job duties or to improve work performance.

Trust can be built in organizational members to follow through on commitments. If a manager or organization gives confidence to employees and promises something for career advancement because of adequate work performance, and if possible then opportunities will come. The characteristics of someone who has succeeded in building trust are as follows: (1) integrity, (2) not easily discouraged, (3) participatory, (4) introspective, (5) competing fairly, (6) understanding and obeying the rules, (7) respect for loyalty / achievement. Things like this which are characteristics of someone who has a high level of trust, is also owned by someone who has high work performance.

The results of the path analysis to determine the direct effect of responsibility on employee performance show that there is a positive direct effect of responsibility on employee performance. In fact, based on the results of the analysis, it can also be seen that the

responsibility variable is an intervening variable that has a very significant effect on the work performance of employees at Manado State University. This means that the higher the work responsibility of the employee, the better the employee's work performance.

### **CONCLUSION:**

Based on data analysis and discussion, it can take several conclusions da lam this research, among others direct influence on the performance of an employee supervision, Strengthening the supervision of lead quality improvement in work performance of employees. There is a positive direct influence on the performance of an employee award, the award system can lead to an increase in the quality of work performance. There is a positive direct influence on the performance of an employee trust, Strengthening the trust can lead to an increase in the quality of work performance of employees. There is a positive direct influence on the performance of the work responsibility of employees, on responsibility employee can cause an increase in the quality of employee achievement.

To improve the quality of supervision in relation to improving the work performance of UNIMA employees, it is suggested that improvements are needed in the following matters: (a) work program of leaders / superiors regarding the implementation of supervision; (b) supervision implementation procedures; (c) important components that are carried out in supervision; (d) information and communication systems in the event of notification to employees regarding the implementation of supervision; and (e) monitoring findings and follow-up monitoring. To improve the quality of the awarding in relation to the improvement of the work performance of UNIMA employees, it is advisable to improve the following: (a) procedures / requirements and reward systems;

(b) awarding is tailored to the priority needs of employees; (c) frequency of time for awarding employees; (d) the form / type of award given to employees. To build and improve the quality of trust in relation to improving the work performance of UNIMA employees, it is suggested that efforts to improve the following are necessary: (a) the ability to follow up on tasks / jobs given or trusted by superiors or leaders; (b) the ability to complete tasks / jobs within a specified time; (c) the ability to complete assigned tasks / jobs in accordance with the expected objectives. To increase work responsibility in relation to improving the work performance of UNIMA employees, it is suggested that efforts to improve the following matters are needed: (a) increasing discipline in various tasks, including attendance at work both when coming and going home; (b) the ability and skills to do the job in accordance with the set target date; (d) carry out various work innovations in order to achieve the expected goals; (e) To report the results of the implementation of duties and work periodically and responsibly

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## COOPERATIVE LEARNING IN PACKAGES B

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### ABSTRACT:

This research aims to develop a models of cooperative learning to improve social intelligence, by maximizing the involvement of learning community in planning, organizing, implementing, coaching, assessment and development. The underlying theory of this research was: Theory of andragogy, cooperative learning theory, theory of social intelligence, the concept of Package B program and the concept CLC. The approach used in this study is a qualitative approach and descriptive quantitative with this type of research.

The method used is a method of Research and Development (R & D) which includes the following activities: (1) a preliminary study, (2) the formulation of a conceptual model, (3) validation experts and the revised model, (4) trials of phase 1, (5) revision of test Phase I trial, (6) phase II trial, (7) improvement of the model (validation), and (8) determination of the model. Experimental design used in this study with a quasi experiment design "The one group pretest-posttest design". The results show the development of: (1) Objective Conditions of the learning process has not been implemented to improve the social intelligence of the learning community of Packages B at PKBM in Gorontalo city. The learning process was carried out only as a mere transfer of knowledge, the phases of learning models have not been implemented properly. (2) Validation of experts have produced a cooperative learning model that can enhance social intelligence (conceptual model). (3) The cooperative learning model

that has been implemented through trials was effective in improving social intelligence. This indicated by increasing social intelligence of learning community both during learning process and after learning.

### INTRODUCTION:

According to UNESCO, effective learning in this century must be oriented towards four pillars, namely, (1) learning to know, (2) learning to do, (3) learning to be, and (4) learning to live together. The four of them can be explained that in the educational process through various learning activities students are directed to acquire knowledge about something, apply or apply what they know in order to make themselves a better person in social life with other people.

In order to realize ' learning to know, tutors have various functions, one of which is as a facilitator, namely as a peer in dialogue and discussion with learning citizens in order to develop mastery of certain knowledge and knowledge. Learning to do (learning to do something) will work if schools facilitate citizens to learn to apply their skills owned so that it can develop and can support the success of the learning community later.

Learning to be (learning to be someone) is closely related to talents and interests, physical and psychological development, personal typology of children and environmental conditions. For an aggressive child, the self-development process will run if given sufficient opportunities to be creative. On the other hand, for children who are passive, the role of tutors, directors and facilitators, is

needed to foster their confidence in learning and self-development activities. Furthermore, the habit of living together, respecting each other, being open, giving and receiving needs to be developed, including in the teaching and learning process in schools. Such conditions allow the process of ' learning to live together ' (learning to live a life together).

Cooperative learning model is a learning model that prioritizes the existence of groups. Each learning citizen in the group has different levels of ability (high, medium, low). The cooperative learning model prioritizes cooperation in solving problems to apply knowledge and skills in order to achieve learning goals

Cooperative learning is learning approach through a small group of people learn to work together to maximize the learning conditions in achieving the learning objectives. Cooperative learning is learning that consciously and systematically develops interactions whose implementation, shows a willingness and ability to participate positively in carrying out learning activities, and creates educational communication in learning due to the intervention of cooperative learning models carried out by facilitators on learning citizens. (c). The cooperative learning model developed has been able to facilitate tutors, so that they are able to carry out a participatory and collaborative learning process based on their learning needs, and open access to fulfill the needs of increasing the social intelligence of learning citizens.

#### **LITERATURE REVIEW:**

To discuss the theory of cooperative learning in this study, based on the opinions of experts by looking at each other's point of view, as stated by Davidson and Warsham (1992: 34) that, the cooperative learning model is teaching and learning activities in small groups..

On the other hand, Jerome Brunner (1996: 56) in his classic book "To word a Theory of Introduction ", which views from a social point of view the teaching and learning process explains that the deep need of humans to respond to others and to work together with them to achieve goals, which is where it is they call it reciprocity (mutual relations). Brunner also argues that reciprocity is a source of motivation that can be used by educators to stimulate learning activities.

The concepts of Brunner and Maslow (1996: 57) underlie the development of collaborative learning methods that are so popular in the sphere of education today. Placing students in groups and giving them tasks that require them to depend on each other to do them is a great way to take advantage of learners' social needs. They are more likely to be more involved in learning activities because they do it with friends which leads to further relationships. In a study of cooperative participant students learn by working together to arrive at an optimal learning experience, both individual and group experiences experience. Therefore, the cooperative learning model is based on theories of cognitive development, treatment, and social standards. Brunner and Maslow (1996: 57) explain that there are three basic theories in the cooperative learning model of Cooperative Learning, including:

#### **1. Ausubel Theory**

David Ausubel (1996: 46) is an educational psychologist. argues that the material for the students to be learned must be "meaningful", which is a process of linking new information to relevant concepts contained in a person's cognitive structure, namely facts, concepts, and generalizations that participants have learned and remembered. students.

Ausubel (1996: 68) says, meaningful learning is a learning process where new

information is linked to the understanding structure that is already owned by someone who is in the learning process. Meaningful learning occurs when students try to link new phenomena into their knowledge structure. That is, the material for students must match the abilities of students and must be relevant to the cognitive structures that students have. Therefore, students must be associated with concepts that students already have, so that these new concepts are really absorbed and understood by students. According to Ausubel (1996: 67) , suitable problem solving is more beneficial for students and is an efficient strategy in model learning. The strength and meaning of the problem- solving process in each lesson lies in the ability of students to take roles in groups. To expedite the process, direct guidance from educators is needed, both verbally and with examples of action, while students are given the freedom to build their own knowledge.

## 2. Piaget's theory

According to Piaget (1996: 88), each individual experiences the following levels of intellectual development: (1) motor sensory (0-2 years); (2) preoperative (2-7 years); (3) concrete operations (7-11 years); and (4) normal operation (11- and over between 12-14 / 15 years).

Referring to Piaget's theory, the cooperative model can be implemented at the junior high school level (age range 12-14 / 15 years), which is included in the formal operational level category , because during this period the child can use more complex operations, in this case the model cooperative learning can be applied to the Package B program.

## 3. Vygotsky's Theory

According to Vygotsky (1997: 54), learning is a development of understanding,

namely spontaneous and scientific. Spontaneous understanding is the understanding obtained from everyday experiences of children. Meanwhile, scientific understanding is the meaning obtained from the classroom, or obtained at school. In Vygotsky's theory, it is also explained that there is a direct relationship between the cognitive domain and the socio-culture. The quality of thinking of students is built in the classroom, while social activities are developed in the form of cooperation between one student and other students who are more capable under the guidance of adults, in this case educators in an atmosphere of togetherness among fellow group members. In addition, the cooperative learning model is also often interpreted as a cooperative motive, in which each individual is faced with prepositions and choices that must be followed whether to choose to work together, to compete, or individually. The use of cooperative learning models is a process that requires participation and cooperation in groups.

From some of the opinions above, it can be concluded that the cooperative learning model is a strategy that places students learning in groups of 4-6 students with different levels of ability or gender or background.

Anita, Lie, (2004: 77) explained that cooperative learning must emphasize teamwork in groups to achieve the same goal. Therefore, the cultivation of cooperative learning model skills needs to be done, including respecting other people's opinions, encouraging participation, courageous questions, encouraging friends to ask questions, taking turns and sharing tasks.

Slavin (1995: 44) said learning model cooperative has been known for a long time, when the educator encourage the learners to work together in certain activities such as discussions or teaching by peers (peer teaching).

In addition, the flow of the teaching and learning process does not have to be like the usual conventional learning that has occurred so far, namely teacher-centered learning which should, in fact students can also learn to teach each other which is much more effective than learning that is only centered on educators..

Johnson and Johnson (1994: 56) suggest that the cooperative learning model is doing something together by helping each other as a team to achieve common goals. The cooperative learning model also means learning together, helping one another in learning and making sure everyone in the group achieves a predetermined goal or task. The success of learning from groups depends on the abilities and activities of group members, both individually and as a group. With groups of students get a wider opportunity to practice attitudes and behaviors to participate in social situations that are meaningful to them. Furthermore, Ibrahim et al (2000) likened the cooperative learning model to two people carrying a block. The beam will be carried together if the two people are successful in carrying it.

In this learning, a broader interaction will be created, namely the interaction and communication between educators and students, students and students, and students and educators (multi-way traffic communication). Cooperative learning is a student learning activity carried out in groups. The group learning model is a series of learning activities carried out by students in certain groups to achieve the learning objectives that have been formulated (Sanjaya 2006: 239).

Johnson (in Hasan, 1996) also explains that cooperative learning is a grouping technique in which students work towards collective learning goals in small groups which generally consist of 4-5 people. Cooperative learning is the use of small groups in learning that allows students to work

together to maximize their learning and learn from other members in the group. It is also emphasized that cooperative learning strategies are a series of learning activities carried out by students in groups to achieve goals. Learning that has been set. There are four important things in the cooperative learning strategy, namely: (1) the presence of students in groups, (2) the existence of a role in the group, (3) the existence of learning efforts in groups, (4) the competence that must be achieved by group. With regard to the grouping of learners can be determined based on: (1) the interests and talents of students, (2) the background of the ability of learners, (3) a blend of interests and talents of learners and the background of the ability of learners.

Nurulhayati, (2002: 25-28), suggests five basic elements of the cooperative learning model, namely: (1) positive dependence, (2) individual responsibility, (3) social skills, (4) face to face, and (5) group process evaluation.

Positive dependence is a form of cooperation that is very closely related between group members. This cooperation is needed to achieve goals. Learners really understand that the success of a group depends on the success of its members.

The purpose of individual accountability is that the group depends on the individual learning method of all group members. Accountability focuses group activities in explaining the concept to one person and ensures that everyone in the group is ready to face other activities where students must accept without the help of group members. The ability to socialize is an ability to work together which is usually used in group activities. Groups do not function effectively if students do not have the necessary social skills.

Each group was given the opportunity to meet face to face and discuss. This interaction activity will provide students with a form of synergy that benefits all members. Educators

schedule time for the group to evaluate the group work process and the results of their collaboration so that later they can work together more effectively.

In line with these explanations Siahaan (2005: 2) express five essential elements that are emphasized in cooperative learning, namely: (a) positive interdependence, (b) the interaction of face (face- to-face interaction), (c) the individual's responsibility (individual responsibility), (d) social skills, (e) group processing occurs.

### **RESEARCH METHODS:**

The research activities of cooperative learning model development for the improvement of social intelligence citizens studying in the CLC are designed to implement approaches research and development (research and development).

The steps in implementing R & D as stated by Borg and Gall (1989: 624) are: (1) starting with researching and gathering information, through reading literature, making observations, and preparing reports on development needs, (2) planning and making prototype components to be developed, including defining abilities / skills to be developed, formulating objectives, determining the sequence of activities, and making special measurement scales, (3) developing initial prototypes, such as preparing textbooks and lifting evaluations, (4) conducting limited trials towards the initial model, (5) revising the initial model, (6) conducting field trials, (7) revising the trial results, (8) operationalizing the tested model, (9) making final revisions to the model, and (10) conduct dissemination or model dissemination.

The research data were collected through interviews, observation, questionnaires, documentation studies, and focus group discussions. Interviews and

observations were used to observe the objective conditions of cooperative learning in the package B program in PKBM in Gorontalo City. Documentation studies and focus group discussions are used to reveal the data needed in the development of a cooperative learning model in the package B program which can hypothetically increase the social intelligence of learning citizens in PKBM in Gorontalo City.

### **RESULTS AND DISCUSSION:**

#### **A. Research result:**

##### **1. Description of the Objective Conditions of Cooperative Learning in PKBM Gorontalo City**

The learning objective conditions in Package B as the subject of this study are based on standards imposed by the Government, especially those

Based on all the descriptions above, the steps for developing the model are comprehensive, then a hypothetical model of cooperative learning model is formulated for increasing the social intelligence of learning citizens package B in the form of the following picture:

##### **4) Success Indicators**

In accordance with the aim of developing a cooperative learning model for increasing the social intelligence of learning citizens in Package B at PKBM, indicators of success include increasing social intelligence of learning citizens, including: (1) at least 75% Situational awareness of learning citizens increases and is applied in learning, (2) at least 75% of the presence of learning citizens increases and is applied in learning, (3) at least 75% Authenticity increases and is applied in learning, (4) at least 75% Clarity increases and is applied in learning, (5) at least Lack of Empathy learners increased and applied in



learning. All of these indicators are in the good category.

## **2. Model Implementation:**

In cooperative learning for increasing the social intelligence of learning citizens package B in PKBM Gorontalo City, it can be done in several stages, namely the preparation stage, the implementation stage, and the evaluation stage. Testing in order to test the effectiveness of the model is carried out by the following steps.

Preparation stage, the activities carried out are: (1) compiling a tutor training program, recruiting and training prospective tutors, (2) developing a cooperative learning program; (3) determine the target group, (4) identify the target group, (5) study data on the target group, (6) determine priority needs and problems, (7) compile materials, (8) select and determine methods, (9) prepare learning media; (10) prepare a list of targets, (11) determine time and place.

Implementation Stage. Conducting observations during the learning process on an ongoing basis, noting things that happen both regarding the tutor and, the motivation, creativity of the learning community in participating in the lesson. To see the cohesiveness and linkages between one component and another and the effectiveness of the previously prepared program, we can compare the criteria. This reflective form in education is carried out through the following steps: (a) compiling a lesson preparation plan (RPP), (b) implementing learning in small groups with peer learning members and at the same time being carefully observed (c) analyzing and discussing the learning that has been done, and (d) planning the next stage of learning. These steps are taken aiming to further improve the understanding of the learning community in open learning in acute conditions.

Learning strategies like this can be expected that tutors can adopt, internalize, and actualize things that are experienced, observed, and applied. Thus the tutor will make more efforts to develop their competence according to the learning experience in increasing the effectiveness of learning, especially in Package B in PKBM Gorontalo City.

The implementation of cooperative learning is directed at increasing abilities in both theoretical and practical forms. In theory, citizens learn to understand social intelligence properly and correctly while in practice, learners can apply the theories they get during the learning process. The theoretical material is slightly different from the practical material. Material theory leads to the ability of citizens to learn to understand the material, while practice is directed at increasing their social intelligence. Both activities are carried out with a social skills process approach.

## **3) Evaluation Phase**

The evaluation stage is carried out based on the criteria and instruments that will be used to assess the effectiveness of the learning model. Evaluation of the effectiveness of the model is carried out by observing the social intelligence behavior of the learning community in implementing learning in PKBM Gorontalo. The observed social intelligence includes; Situational awareness, Presense, Authenticity, Clarity, and Emphaty

Evaluation of the impact of the implementation of the model (outcome), carried out in reflective activities to determine the ability of learning citizens, is carried out through observation of learning citizens in implementing learning. Observations or observations are made carefully by the researcher. The results of the observations are then discussed to provide mutual input to improve the social intelligence of the observed

learning citizens, to improve further learning. listed in Government Regulation Number 19 of 2005 concerning National Education Standards. In fact, according to the findings in the field from 3 to 5 September 2011, according to the results of interviews with several managers in several PKBM Gorontalo City, it was found that the learning process in the Package B program generally still uses conventional learning, namely tutor-centered learning.

In detail, the objective conditions for the implementation of cooperative learning for increasing the social intelligence of learning citizens of Package B in PKBM Gorontalo City can be described as follows: (1) The cooperative learning model has not been fully implemented in the Package B program in PKBM Gorontalo City, (2) There is a concern that cooperative learning will only cause chaos in the classroom, and students will not learn if they are placed in groups. (3) There are many negative impressions about collaborative activities or studying in groups. (4) Learning residents do not like being asked to cooperate with other people. (5) Active and diligent learning citizens feel they have to work more than other learning citizens in the group, while learning citizens who are less able feel inferior because they are placed in a group with smarter and more active learning citizens. (6) Smart learning societies feel that their less fortunate friends are just riding in on their hard work. (7) There is a feeling of anxiety among group members about the loss of personal characteristics or uniqueness because they have to adjust to the group.

This study is directed at exploring the internal factors of the factual learning model in Package B at PKBM which are assumed to affect the social intelligence of learning citizens in participating in learning programs and the ability of tutors / tutors in building learning programs. In addition, various problems

related to the implementation of learning that take place at PKBM will also be discussed.

### **DISCUSSION:**

The procedure adopted in developing this cooperative learning model goes through four stages, namely: (1) planning, (2) implementation, and (3) evaluation. Each of these stages can be explained as follows:

#### **1) Planning Stage:**

The planning stage in implementing this model involves several activities, including: a) Identification of learning needs, taken in two stages, namely: first, interviews with the Head of the Equality Education Section for PNFI, Gorontalo City and the Chairperson of PKBM. The interview technique uses open interviews to obtain an overview of the tutor's learning needs. Second, identify the learning needs of each tutor using the learning needs identification format, and complete with interviews to obtain an overview of the tutors' learning needs related to the development of their competence in learning. b) determine learning needs based on priorities, learning needs are determined based on the largest portion of the identification results filling in the identification and interview format. This step was taken to avoid too diverse learning needs and the learning resources needed. Determination of learning needs, used as the basis for setting learning objectives, subject matter of learning, learning strategies or approaches, as well formulation of evaluation tools to be used. c) Identification of learning sources, namely selecting and determining tutors who can be involved in assisting learning in education, in addition to the researchers themselves as tutors, also recruiting lecturers from the PLS Department and lecturers from the Department of Curriculum and Educational Technology who are considered competent in

the educational material to be provided. In addition to choosing tutors, other learning sources that support learning activities are also selected, namely in the form of teaching materials. Teaching materials are determined in accordance with the results of identification of needs, which include printed teaching materials (textbooks), and teaching materials developed by the tutor. d) Identification of learning citizens; are citizens of learning who take lessons in PKBM Gorontalo City.

## 2) Implementation Stage:

The implementation of skills education activities is oriented towards cooperative learning strategies. This strategy is projected on professional interaction conditioning by maintaining a transmission (transfer), transactional, and collaborative learning approach. In learning the tutor acts as a learning resource to facilitate the learning process activities with the following steps: Phase-1 Present goals and set (conveying objectives and preparing students). Phase-2 Present Information (presenting information to students verbally). Phase-3 Organize Students Into Learning Teams (Provide explanations to students about the procedures for forming learning teams and helping efficient transition groups) . Phase-4 Assist team work and Study (Helping teams as long as students do their work). Phase-5 Test on The Materials (Testing the knowledge of students about various learning materials or groups presenting their work). Phase-6 Provide Recognition (Preparing a way to recognize the efforts and achievements of individuals and groups).

## CONCLUSION:

1. The implementation of model development is carried out through testing and testing the cooperative learning model application.

This cooperative learning model trial was conducted twice. From the results of this trial, it is hoped that a conclusion can be drawn that describes the characteristics of the expected development of the cooperative learning model. The procedure for implementing this trial is carried out through three main activities, including: forming an experimental group and a control group that refers to the steps of each learning model, implementing learning, and giving post-tests to the experimental group and the control group with the same test material. .

2. The effectiveness of the cooperative learning model developed has shown effectiveness in the acquisition of learning outcomes supported by systematics and adaptive relationships between components so that it can be implemented by facilitators as learning resources and by learning citizens in making efforts to increase social intelligence. Increasing social intelligence is the behavior of learning citizens, which includes indicators: (1) situational awareness, (2) presence, (3) authenticity, (4) clarity and empathy.

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# THE EFFECTIVENESS OF SAKIP IN BUILDING THE PERFORMANCE OF APARATUR SIPIL NEGARA

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## ABSTRACT:

Serious efforts to decentralize occurred after the New Order regime collapsed and replaced with the Reform Order. At that time a new decentralization law was enacted to replace Law no. 5 of 1974, namely by enacting Law no. 22 of 1999 concerning Regional Government and Law no. 25 of 1999 concerning Financial Balance between Central and Regional Government. The regional autonomy law was then refined again with the issuance of Law no. 32 of 2004 concerning Regional Government and the most recent Law no. 9 of 2015 concerning Local Government. and Law no. 25 of 1999 concerning Financial Balance between Central and Regional Government replaced by Law no. 33 of 2004 concerning Financial Balance between the Central Government and Local Government. SAKIP is the Government Agency Performance Accountability System, where this system is an integration of the planning system, budgeting system and performance reporting system, which is in line with the implementation of the financial accountability system. In this case, each organization is obliged to record and report every use of state finances and their compliance with applicable regulations. The current form of accountability is the development of an accountability system called the Government Agency Performance Accountability System (SAKIP), whose implementation starts from the preparation of the Strategic Plan

(Renstra) to accountability for performance in the form of a Government Agency Performance Accountability Report (LAKIP). SAKIP is a management tool in the framework of decentralized government administration which is expected to improve government performance.

**KEYWORDS:** performance, accountability, responsibility

## INTRODUCTION

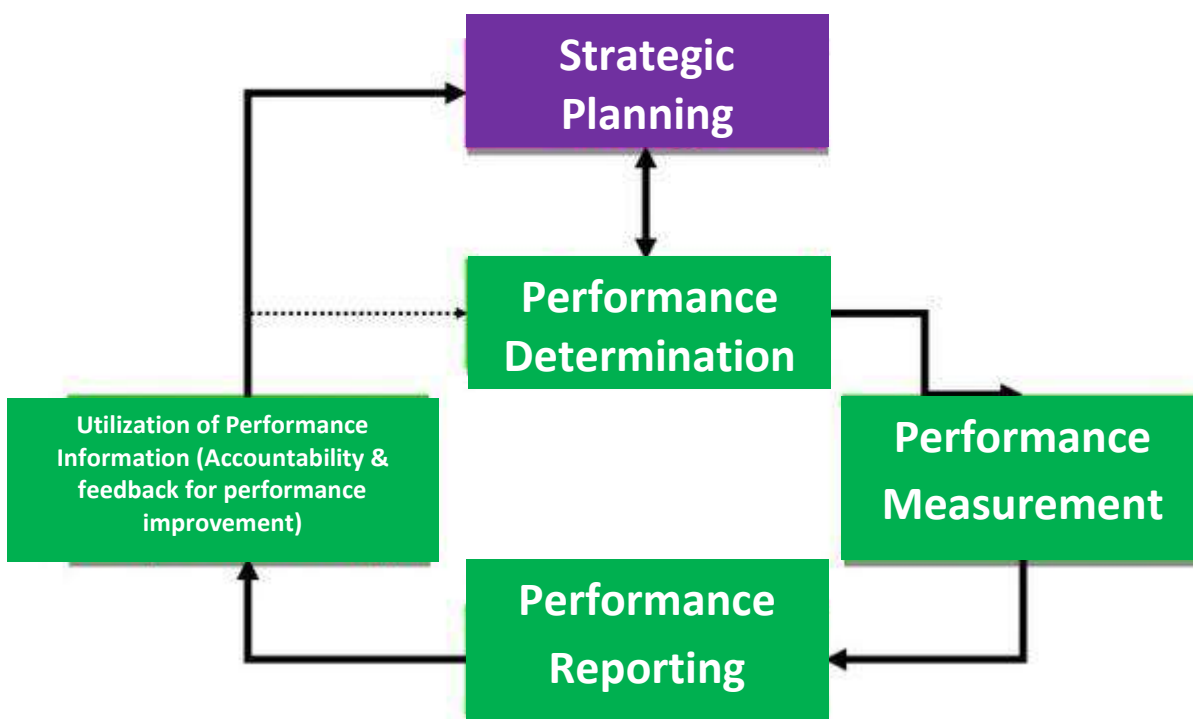
Until now, the Government Agency Performance Accountability System (SAKIP) is often seen as a mechanism to account for performance. This approach rests on an external point of view or fulfills the interests of stakeholders. This view is not wrong. However, with such an understanding, the role of SAKIP becomes narrower and tends not to raise awareness of government agencies of the need to implement SAKIP properly.

SAKIP can actually be seen from another point of view. In the framework of PP 60 of 2008 concerning Government Internal Control Systems (SPIP), it is stated that in the element of control activities there are two sub-elements that emphasize the much larger function of SAKIP. These sub-elements are reviews of performance and reviews of performance indicators. The two sub-elements clearly state the determination of performance indicators and performance reviews as part of control activities. So that the proper functioning of SAKIP is a form of SPIP implementation. Until now SAKIP has not functioned either as a medium for performance accountability or as a

means of management control. The infrastructure for building SAKIP has now been built. If likened to a building, the strength of the building depends on the materials used to build it. These materials constitute the building blocks of SAKIP, which consist of Re nstra, Renja, Tapkin and LAKIP.

For a leader or regional head, SAKIP will be useful in being able to measure any development or performance carried out by each Regional Work Unit (SKPD). In addition, this system can also be used as a measure to account for the budget that has been used for regional development.

## Agency Performance Accountability System Cycle



The government agency performance accountability system (SAKIP) is the implementation of performance management in the public sector that is in line and consistent with the implementation of bureaucratic reform, which is oriented towards achieving outcomes and efforts to obtain better results.

**LITERATURE REVIEW:**

**A. Employee Performance:**

Performance or performance refers to the appearance of the work, also means the performance, execution of work, job attainment, or work. According to Smith in Zainal, et al

(2014: 410) that: " performance is the output drive from processes, human or orherwiss ". So it can be said that performance is the result or output of a process. Performance reflects how far the success of a job has been achieved. Furthermore, human performance is a function and level of ability, attitude, and degree of motivation. Meanwhile, Jamari in Zainal, et al (2013: 410) states that performance is a manifestation of the authority, duties and responsibilities it receives to achieve the goals outlined by the organization.

Furthermore, Gibson, Ivancevich and Donnelly (1997) define: "Performance is the

level of success in carrying out tasks and the ability to achieve predetermined goals". Meanwhile, Gomes in Mangkunegara (2009: 9) argues that: "Performance as an expression such as output, efficiency and effectiveness are often associated with productivity". Mangkunegara (2000: 67) also said that "Employee performance is the result of work in quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given to him." In addition, performance is a function of motivation and ability. To complete a task or a job, someone should have a certain degree of willingness and ability, someone's willingness and skills are not effective enough to do something without a clear understanding of what to do and how to do it.

### **B. Bureaucratic Theory:**

Bureaucracy deals with community organizations that are ideally structured. Bureaucracy is achieved through the formalization of rules, structures, and processes within the organization. According to Weber (1948), the ideal bureaucratic organization includes eight structural characteristics. Muskamal (2014) states that in order to realign the bureaucracy in its position and mission or its role as a "public servant", it requires the ability and willingness of the bureaucracy to carry out bureaucratic reform steps that include changes in behavior that promote "neutrality, professionalism, democracy, transparency and independence", accompanied by improvements in morale, work methods and performance, especially in policy management and provision of public services, as well as commitment and empowerment of accountability of government agencies. To improve the way the bureaucracy works, a results-oriented bureaucracy is needed.

Furthermore, a leader who is committed and competent to reform the state bureaucracy is needed properly, including in agenda setting and implementing government and development policies aimed at the interests of the people, increasing the resilience and competitiveness of the nation. In this context, structural reforms are also needed, such as the independence of the judicial system and the state financial system, along with efforts to increase transparency and accountability to the public.

### **C. Accountability Theory:**

According to Turner and Hulme (1997), accountability is a complex concept that is more difficult to achieve than eradicating corruption. Accountability is an imperative for public sector institutions to put more emphasis on horizontal (public) accountability rather than just vertical (higher authority) accountability. Accountability is the responsibility of a person or group of people who are given the mandate to carry out certain tasks to the mandate both vertically and horizontally.

Mardiasmo (2009: 20) defines public accountability as the obligation of the trustee (agent) to provide accountability, present, report and disclose all activities and activities that are their responsibility to the principal who has the right and authority to hold this accountable.

Lukito (2014: 2) explains that accountability is a form of obligation for public activity organizers to be able to explain and answer all matters concerning the steps of all decisions and processes taken, as well as accountability for the results and performance. According to Setiyono (2014: 181) accountability is a concept that has several meanings. This terminology is often used with several concepts such as answerability, responsibility, liability and other terms related

to “ the expectation of account- giving ” (the expectation of the mandate and the executor of the mandate). Thus, accountability includes expectations or assumptions of the behavior of the relationship between the giver and recipient of the mandate.

#### **D. Government Agency Performance Accountability System (SAKIP):**

The system is a unit of elements or units that are interconnected and affect each other in such a way that they appear in a whole, work, function or move in harmony which is supported by a number of necessary procedures, while the procedure is a sequence of performance or planned activities to handle repetitive work. in a uniform and integrated manner. (explain the source of information)

According to LAN (2003: 3), SAKIP is basically an instrument used by government agencies in fulfilling their obligations to account for the success or failure of the implementation of an organization's mission, consisting of various components that are one unit, namely strategic planning, performance planning, performance measurement, and performance reporting.

#### **RESEARCH METHOD:**

This type of research uses a quantitative approach research. Based on the relationship between the variables studied, this research is a causal associative study, namely a causal relationship. The sampling technique in this study uses Nonprobability Sampling with purposive sampling technique, which is a sampling technique based on certain considerations, in this case it will conduct research on the Performance Accountability System of Government Agencies, so the respondents are people who are currently competent in reporting performance

accountability as well as people who do evaluation of performance reporting.

While the sample in this study is ASN who work in planning, reporting, and / or other fields consisting of implementing staff, echelon IV officials or heads of the planning, reporting subdivision, and / or heads of other subdivisions who are in charge of preparing SKPD performance reports and officials. echelon III who is competent in providing information and opinions regarding SAKIP which carries out its supervisory function and who is competent in evaluating SKPD performance reports. The sample in this study amounted to 100 respondents / ASN and spread over 20 SKPD.

Before the data is further analyzed using multiple regression analysis, first a classic assumption test is carried out consisting of the Normality Test, Multicollinearity Test and Heteroscedasticity Test.

#### **RESULTS AND DISCUSSION:**

##### **1. Validity and Reliability Test:**

Validity and reliability tests carried out on awareness variables in statutory regulations ( $X_1$ ) all statements totaling 8 items submitted are valid and reliable with a Cronbach's alpha value of 0.7776. Validity and reliability tests were carried out on the organizational commitment variable ( $X_2$ ). All statements totaling 8 items submitted were valid and reliable with a Cronbach's alpha value of 0.855. Validity and reliability tests were carried out on the role variable of APIP ( $X_3$ ). All statements totaling 8 items submitted were valid and reliable with a Cronbach's alpha value of 0.909. Validity and reliability tests were carried out on the variable implementation of SAKIP (Y), all statements totaling 20 items submitted were valid and reliable with a Cronbach's alpha value of 0.961.



Table. 1 Descriptive Statistics

Variable	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Awareness	100	16	24	40	32.61	3,275	10,725
Commitment	100	18	22	40	32.99	3,563	12,697
SAKIP	100	28	72	100	85.50	7,714	59,505
Valid N (listwise)	100						

Source: Results of data processing with SPSS

Based on the results of the descriptive statistical test set forth in Table 1, it can be concluded that the average respondent's answer to the awareness variable in the legislation is neutral, while the organizational commitment variable and the SAKIP implementation variable agree.

### 2. Classic Assumption Test:

The normality test is carried out to find out the data is normally distributed. Testing of whether the data is normal or not is done with a normal P-Plot. If the data points spread around the diagonal line and the distribution of data points is unidirectional along the diagonal line, the regression model satisfies the assumption of normality. In Figure 1, it can be seen that the data points spread around the diagonal line and the distribution of data points is unidirectional to the diagonal line. So it can be concluded that the data is normally distributed, so that the regression model meets the assumption of normality.

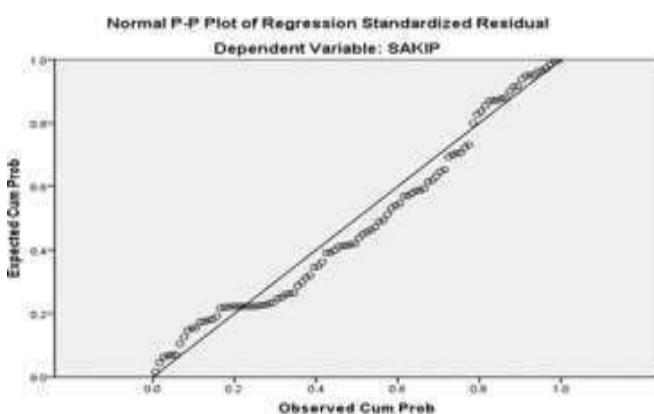


Figure 1 Normality Test Results

### 3. Multicollinearity Test:

Multicollinearity testing is carried out to see whether the regression model finds a correlation between the independent variables. How to detect it is by looking at the tolerance value and the Variance Inflation Factor (VIF) value. If the VIF value is  $<10$  and tolerance  $> 0.1$ , the independent variable is free from multicollinearity problems. Table 5.2 presents the results of the multicollinearity test.

Table 2 shows that all tolerance values  $> 0.1$  and VIF values  $<10$ . This indicates that all independent variables are free from multicollinearity.

### 4. Heteroscedasticity Test:

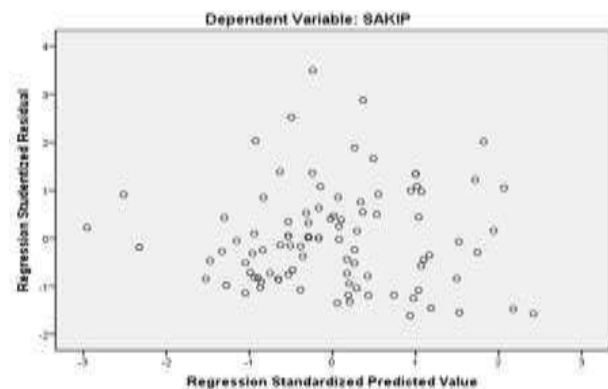


Figure 2 Heteroscedasticity Test Results

The presence or absence of heteroscedasticity can be determined by looking at the plot graph. If there is no clear pattern, i.e. the dotted fiber spreads above and below the 0 on the Y axis, then there is no heteroscedasticity.

Figure 2 shows that in the scatterplot, the dots do not form a pattern but spread, so

it can be concluded that in the study there is no heteroscedasticity.

Another heteroscedasticity test using Glesjer's test is as in Table 3. The basis for decision making in the heteroscedasticity test, namely:

1. There is no heteroscedasticity, if the t-count value is smaller than the t-table and the significance value is greater than 0.05
2. Heteroscedasticity occurs, if the t-value is greater than the t-table and the significance value is smaller than 0.05.

### Hypothesis Testing Results:

Test the regression coefficient together (F test)

Table of F Test Results  
ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2674,942	3	891,647	26,616	.000 <sup>a</sup>
	Residual	3216,058	96	33,501		
	Total	5891,000	99			

a. Predictors: (Constant), Awareness, Commitment, APIP

b. Dependent Variable: SAKIP

Source: Results of data processing with SPSS

Table 3 shows that  $F_{count} = 26.616 > F_{table} = 2.70$  then  $H_a$  is accepted and  $H_o$  is rejected. Judging from the significance value is  $0.000 < 0.05$  so that  $H_a$  is accepted and  $H_o$  is rejected. The results of this test indicate that awareness of statutory regulations, organizational commitment, and the role of APIP together have a significant effect on the implementation of SAKIP.

The value of the correlation coefficient (R) ranges from 0 to 1, the closer the value to 1 means that the relationship is getting stronger, on the contrary the value is getting closer to 0, the weaker the relationship is.

Based on Table 5.7 the correlation coefficient (R) of 0.674 indicates that the relationship between the independent variable (X) and the dependent variable (Y) is

a strong relationship. This means that awareness of laws and regulations, organizational commitment, and the role of APIP has a strong relationship to the implementation of SAKIP because it is close to the value of 1.

If the value of adjusted  $R^2$  is equal to 0, then the variation of the independent variables used in the model does not explain the slightest variations in the dependent variable. In contrast adjusted  $R^2$  is equal to 1, then the variation of the independent variables used in the model explains 100% of the variation of dependent variables.

Based on Table value adjusted  $R^2$  is 0.437, which means an increase of 43.7% SAKIP application is influenced by awareness of the laws and regulations, organizational commitment, and the role of APIP, while the remaining 56.3% is influenced by other factors outside of this research.

### DISCUSSION:

#### 1. The Influence of Awareness of the Laws and Regulations on the Implementation of SAKIP:

After going through the results of analysis and hypothesis testing, it can be argued that awareness of statutory regulations has no significant effect on the implementation of SAKIP. This is due to changes in laws and regulations regarding the SAKIP guidelines that are not yet fully understood and implemented properly. This reflects awareness that laws and regulations are less effective because

Apparatus awareness of the rules or laws is still lacking. The results of this study contradict the research results of Riantiaro and Azlina (2011), Soleman (2007), Badruzaman and Chairunnisa (2011), and Putra (2003) which concluded that awareness, compliance or obedience to

statutory regulations has a positive and significant effect on the implementation of the performance accountability system of government agencies. However, the results of this study are in line with the research of Nasriani and Chandra (2009), the partial test results show that awareness of accountability and the law regarding accountability does not have a significant effect on the implementation of SAKIP.

Lack of awareness of statutory regulations, especially the regulations concerning SAKIP and regulations regarding the preparation of regional development implementation is one of the reasons why the North Sulawesi Provincial Government has not been able to reach the highest category based on the evaluation results from the Ministry of PAN and RB.

## **2. The Effect of Organizational Commitment on the Implementation of SAKIP:**

Organizational commitment has a significant effect on the implementation of SAKIP. Thus, the existence of a strong organizational commitment is needed by the organization in order to improve performance accountability and better use of the performance information generated. The performance accountability system of government agencies will run well if it is supported by high commitment from the local government, because with a strong organizational commitment starting from the leadership to the subordinates it will be easier to achieve the desired results to produce better performance, compared to the organization that has no commitment. The results of this study also support research conducted by Silvia (2013) which states that management commitment has a significant positive effect on the performance accountability of government agencies.

Likewise, the research of Nusantoro and Subiyanto (2009) concluded that the commitment of the local government significantly affects the effectiveness of implementing SAKIP.

Employees with high normative commitment will stay in the organization because they feel it is their obligation and must be done in return for the benefits they have received from the organization that oversees them. As a form of reprisal to a good employee organization, it will provide good performance and behavior so that other employees can follow. This attitude directly has a positive influence on the implementation of SAKIP in the organization.

## **CONCLUSION:**

Based on the results of research analysis and discussion, it can be concluded that:

1. Awareness of laws and regulations does not have a significant effect on the implementation of SAKIP. This is due to changes in laws and regulations regarding the SAKIP guidelines which are not yet fully understood and implemented properly. This reflects the awareness that laws and regulations are not effective because of the lack of compliance with rules or laws.
2. Organizational commitment has a significant effect on the implementation of SAKIP. SAKIP will be able to run well if it is supported by high commitment from every element of SAKIP organizer itself, because with a strong organizational commitment starting from the leadership to the subordinates it will be easier to achieve the desired results to produce better performance, compared to the organization that has no commitment.
3. Awareness of laws and regulations, organizational commitment and the role of

APIP together have a significant effect on the implementation of SAKIP.

4. Based on the results of the analysis of the coefficient of determination, the adjusted R2 value in this study was 0.437, which means that the increase in the implementation of SAKIP was 43.7% influenced by awareness of the laws and regulations, organizational commitment, and the role of APIP, while the remaining 56.3% was influenced by other factors beyond this study .

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## STABILITY OF CHLOROPHYLL METALLANALS IN SOLUTIONS

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### ABSTRACT:

**The study of the stability characteristics of porphyrin complexes, the increase in the stability of metalloporphyrins, the decrease in porphyrin-ligand basis, the effect of this interaction, the kinetics of solvoprotolytic dissociation of metalloporphyrins and the dissociation kinetics of perennial and numerous metalloporphyrins and metallophthalocyanins.**

**KEYWORDS: Porphyrin, compound, chlorophyll, dissociation kinetics, metalloporphyrin, ethanol vinegar.**

### INTRODUCTION:

The stability of metalloporphyrins in different environments is one of the decisive factors in the practical application of these compounds. There is a lot of work devoted to the study of the stability of complex compounds of porphyrins in different protonodonor environments [1, 2]. Although the study of sustainability initially began with chlorophylls, attention to these compounds has now declined significantly. This is because knowing the economic inefficiency and labor-intensive nature of separating them from plants is one of the main factors that prevents them from being applied in practice.

A new prospect of obtaining these compounds is that the study of their stability in this or that solvent rises to the level of priority tasks in connection with the creation of the raw material base. In this paper, we summarize and study the data on the stability of chlorophyll and its analogues in various solvents necessary for the use of this group of porphyrins for model tests and practical purposes.

The study of the stability of chlorophyll in solution, the qualitative indicators of the decomposition of porphyrin complexes from the time it was first obtained in pure form, showed that most complexes dissociate rapidly with alkali and alkaline-earth metals under the influence of water:  $\text{Ag}^{2+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Cd}^{2+}$ ,  $\text{Mg}^{2+}$  porphyrins dissociate well in dilute acid solutions, as well:  $\text{Cu}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Co}^{2+}$ ,  $\text{Pd}^{2+}$ ,  $\text{Fe}^{3+}$  and  $\text{Mn}^{3+}$  concentrated sulfuric acid or metal sulfates are required for extraction [3,4].

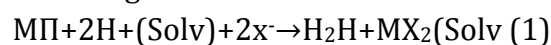
Quantitative study of the dissociation kinetics of a solution of chlorophyll in 90% aqueous acetone with the addition of  $\text{H}_2\text{C}_2\text{O}_4$ ,  $\text{H}_2\text{SO}_4$  and  $\text{HCl}$ , J. McKineem and D.J. Johnson [5-7] were unable to obtain reliable kinetic parameters. This is due to the inability to select an appropriate protogenic solvent, which may include side effects and cases of partial protonation and aggregation of pheophytin.

However, at the same time,  $\alpha$ -chlorophyll was found to dissociate 7 times faster than  $\nu$ -chlorophyll. Further similar work on the stability of chlorophyll and similar compounds in 82% solution of aqueous acetone with the addition of NSI was carried out by S. Shanderl and colleagues [8]. They found that at the same activation energy (43.9kJ / mol) the dissociation rate of  $\alpha$ -chlorophyll was 5.5 times greater than that of  $\nu$ -chlorophyll. Replacing the phytol residue in chlorophylls with  $C_2H_5$ -,  $CH_3$ - or H slightly accelerates the dissociation reactions of magnesium-porphyrins. Dissociation of structural analogues of A-line chlorophylls 0.00017; 0.00021; 0.00026 and 0.00029 are equal to C-1. Suitable for chlorophyll, ethylpheophorbide, methylpheophorbide and phosphorbides, respectively. In this case, the activation energy of the reaction does not change.

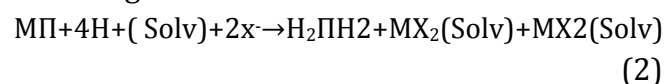
Only many years of systematic experimental work by Professor B.D. Berezin allowed to reveal the laws of stability of these compounds and the mechanisms of dissociation reactions. The generalized conclusion of these studies showed that these compounds exhibit phenol stability in some unusual cases. Ionic-type labile complexes are formed only by alkali and alkaline-earth metals. Metals bonded to the macro ring through a covalent bond:  $Fe^{2+}$ ,  $Fe^{3+}$ ,  $Co^{2+}$ ,  $Ni^{2+}$ ,  $Zn^{2+}$ ,  $Cu^{2+}$ ,  $Cr^{2+}$ ,  $Al^{3+}$ ,  $Ti^{4+}$ ,  $Pd^{4+}$ ,  $Pt^{4+}$  and others form stable complexes.

Because metalloporphyrins bind highly stable substances, their formation reactions cannot be supported by the commonly used thermodynamic approach, which studies the formation of complex compounds. When studying the stability characteristics of porphyrin complexes, their kinetic stability is often studied. That is, the free activation energy is used in the dissociation of solvoprotolytic reactions [1]. Dissociation of

metalloporphyrins of average size takes place as a protolytic process according to the following scheme:



in highly acidic environments it follows the following scheme



Chlorophyll and its labile metalloanalogs are irreversibly dissociated in ethanol-acetic acid media according to equation [1]. From the dissociation concentrations of these substances shown in Table 1, it can be seen that the stable chlorophyll within this group is several times lower under these conditions.

At the same time, it was found that the stability of chlorophyll a is much lower under such conditions.

Table 1. The dissociation rate constants of pheoditin labile complexes in ethanol acetic acid medium.

$C^0, \text{mol/l, ZnCl}_2$	$k_{ef} \cdot 10^3, \text{c}^{-1}$	$k_v, \text{l/e} \cdot \text{mol}$
$1 \cdot 10^{-2}$	$3,430 \pm 0,070$	$0,343 \pm 0,007$
$1 \cdot 10^{-3}$	$0,646 \pm 0,097$	$0,646 \pm 0,010$
$1 \cdot 10^{-4}$	$0,047 \pm 0,014$	$0,470 \pm 0,140$

It is clear from the kinetic characteristics of the stable metalloanalogs of chlorophyll in Table 2 that the  $Fe^{3+}$ ,  $Ni^{2+}$ ,  $Cu^{2+}$ ,  $Pd^{2+}$  complexes dissociate only in the protonodonor medium (solution of  $H_2SO_4$  monohydrate in glacial acetic acid).  $Zn^{2+}$ ,  $Co^{2+}$   $Ag^{2+}$  complexes are also decomposed in weak protodonodonor media (ethanol-acetic acid). Complexes of nickel and copper with  $\alpha$ -pheophytin dissociate in glacial acetic acid at high temperatures. Iron, zinc, and silver complexes proceed according to the equations given in (1) or (2). The copper, palladium, nickel, and cobalt complexes of the A-chlorophyll analogs are accompanied by the formation of semi-dyed substances as a result of the destruction of theophytine [9].

Table 2. kinetics of dissociation characteristics of stable metallogues of  $\alpha$ -chlorophyll in glacial acetic acid

Complex	$C_{nas}$ , mol/l	T/K	$k_{ef, \circ} 10^4$ , $c^{-1}$	
MgF a	2,0	298	0,036	
		313	0,106	
		323	0,211	
	4,0	333	0,394	
		298	0,944	
		298	9,17	
CdF a	0,02	298	1,89	
		308	1,78	
		318	1,72	
	0,04	298	5,17	
		0,06	298	10,56
		0,10	298	38,33
HgF a	0,02	298	230,0	
			very fast	

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**THE ESSENCE AND SIGNIFICANCE OF THE RELIGION OF ISLAM IN THE  
UPBRINGING AND PRESERVATION OF THE BEST MORAL QUALITIES OF A PERSON**

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**ABSTRACT:**

**This scientific article describes the characteristics and meaning of religion, which is a part of world culture and history of all peoples. The entire centuries-old history of mankind has developed within the framework of the development of culture, as well as national and world religions. The article describes the characteristics of the religion Islam, its essence and significance in the upbringing and preservation of universal values, the best moral qualities of a person.**

**KEYWORDS: Religion, world culture, Religion Islam, ethical and universal values, mercy, Muslim, Koran, Sunnah, Hadith, Sharia, Islamic ethics, tolerance.**

**INTRODUCTION:**

Religion, being an integral part of world culture and history of any nation, has influenced the minds and way of life of people for centuries. Many ethical and universal values, humanistic ideas, moral traditions and customs have survived to our time thanks to religion. The entire centuries-old history of mankind has developed within the framework of national and world religions. This applies to both morality, and various types of art: literature, music, architecture, fine and applied arts.

Islam combines the basic human virtues revered and respected by every nation. Islam has created an effective system of ethical laws, permissible and forbidden. Under Islam, the norms of a prosperous life of an individual and society are considered morally positive -

good, and actions brought to society are considered immoral - to be evil. In the area of social issues, Islamic teaching is based on mercy, nobility and responsiveness. In society, Islam pays special attention to nobility, learns various problems of relationships. In our relationships in a wider circle, there are questions and responsibilities towards loved ones and relatives. If you compare them, then you should arrange them in the following order, parents, spouse or spouse, children, relatives, neighbors, friends, acquaintances, orphans, people and animals in need of help. Islam seeks to create a virtuous person, a healthy family and a harmonious society. Islam (translated from Arabic "obedience", "surrender to Allah") is one of the most widespread religions in the world. The adherents of Islam are called Muslims (from Arabic Muslim-faithful). A Muslim is a person who believes in Allah, arranges his life according to the reason given to him by Allah, recognizing all the prophets, messengers of Allah, headed by Muhammad.

Religion Islam is one of the most widespread religions around the world. Islam is professed by more than a billion people (according to some estimates, up to 1 billion 300 million people). In fact, there are Muslim communities in over 120 countries. Muslims constitute the majority of the population in 35 states. In 28 countries, such as Egypt, Saudi Arabia, Morocco, Kuwait, Iran, Iraq, Pakistan and others, Islam is declared a state religion. The vast majority of Muslims live in West, South and Southeast Asia, and North Africa. The number of adherents of Islam is increasing not only due to the natural growth of the

population, among which it was traditionally widespread, but also due to the acquisition of new followers.

It should be noted that Islam acts as a powerful socio-cultural phenomenon, as an active political force. In historical terms, it is the result of the development of Arabian society in the period of transition from antiquity to the middle Ages, from the communal-clan system to class relations. Islam is the religion of the peoples living in the Central Asian region: Uzbekistan, Tajikistan, Turkmenistan, Kyrgyzstan, Azerbaijan, and Kazakhstan. The zone of Islam in Russia is represented by the territory of the Volga and Urals with the Tatar and Bashkir populations, the North Caucasus, and a number of regions of Siberia. Islam spread to the territory of modern Uzbekistan in the late 7th - early 8th centuries as a result of the Arab conquests. On the basis of Islamic ideology, Central Asia has become one of the centers of Muslim civilization. Islam, having absorbed most of the local Zoroastrian ideas and values, became the basis of the culture and spirituality of the peoples inhabiting the territory of modern Uzbekistan.

Thus, the President of the Republic of Uzbekistan Shavkat Mirziyoyev at the 72nd session of the General Assembly of the United Nations (New York, September 19, 2017) noted "We consider the most important task to bring to the wide world community the truly humanistic essence of Islam, the sacred religion of primordial values. We strongly condemn and will never reconcile with those who place our great faith on a par with violence and bloodshed. Islam calls us to goodness and peace to preserve the true human principle. I would like to especially note the invaluable contribution to the development of Islamic and world civilization of a whole galaxy of outstanding representatives of the Central Asian Renaissance" [1].

In the 9th - 12th centuries, immigrants from Central Asia became representatives of the intellectual elite of the Muslim world. These were theologians - Imam al-Bukhari, al-Termezi, Sufis Nakshbandi and Yassavi, representatives of secular knowledge al-Fergani, al-Khwarizmi, Beruni, Farabi, Abu Ali ibn Sino and many others. The names of these scholars and their works are still revered in the Islamic world and far beyond its borders. Already in the initial period of the existence of the Muslim community, an idea was formed about the five most important provisions of the doctrine. These are the confession of faith (shahada), prayer (salat), fasting (saum), tax in favor of the poor (zakat) and pilgrimage (hajj).

Islam is the religion of the "People of the Book", the scriptures sent to people through the prophets. The Koran (from Arabic - Al Qur'an "- reading out loud", edification) is the holy book of Muslims [7]. The content of the Quran is the speech of Allah, with which he addressed Muhammad for 20 years. Under the third caliph Osman in 656, the final edition of the text of the Koran was drawn up, which was declared the most reliable and correct. There are 114 chapters (suras) in the Qur'an, and 6236 verses. Sura names are often taken from vivid phrases or plots, or the name in the text. Suras are divided into verses - rhymed, rhythmically completed phrases. Suras, or chapters of the Koran, are a collection of verses of a religious, philosophical, legal, poetic and everyday nature.

The Koran is the basis of Islam, for it establishes religious rites, legal and moral norms, way of life and rules of conduct for millions of Muslims. Without acquaintance with the Koran, it is impossible to understand the customs and traditions existing in the world of Islam.

The ideology of Islam is set forth in the holy books of Muslims: the Koran and Sunnah, the Koran is given by Muslim theologians as the

"word of God": for divine revelation and is perceived as "holy scripture."Sunnah (a collection of stories about the life of the Prophet Muhammad) is reflected in the book of the great hadith scholar of the Muslim world Imam al Bukhari "Al Jomi-as-Sahih". The Sunnah acts as a Muslim "sacred endowment". On the basis of the Koran and Sunnah, theologians have developed a set of legal norms of Muslim behavior. This collection was called Sharia (translated from Arabic, a clear path).

"Muslim way of life", "laws of faith", "right way" - this is the meaning of the concept of Sharia. Sharia is a set of prescriptions enshrined in the Koran and Sunnah, by which believers should be guided in all life situations in order to achieve moral perfection and worldly well-being. It is not only about the observance of the rituals, but also about the personal qualities, beliefs, and correct behavior of each Muslim. Sharia is the religious and ethical basis of fiqh - Muslim jurisprudence, which is the definition of specific rules of behavior. Islam puts a person in the conditions of good, creating social order without the participation of negative forces, affirming good manners and human virtue, and also recommends ways to eliminate bad skills.

With the help of Islamic principles, all life problems are filtered through a moral normative grid, which saves a person from the domination of selfish passions and desires. Thus, Islamic ethics contribute to the creation of colorful personalities with high moral and volitional qualities.

Islam strongly condemns racial discrimination and calls for equality among people, placing the person at the center of the universe [2].

The canons and principles of Allah listed in the Koran and introduced as an example in the life of Muhammad are obligatory for all people on earth, regardless of class, race and nationality. By implementing

these principles, genuine justice and equality are achieved.

Currently, the Muslim clergy especially focuses the attention of believers on the positive, moral meaning of Islam, arguing that the Muslim religion fights for the preservation of peace and friendship between peoples, for mutual support of people, warns a person against immoral acts, due to which the idea is emphasized that religion - the only means of education, preservation of the best moral qualities of a person.

To date, favorable conditions have been created for the implementation of the principle of freedom of conscience and the normal activity of Muslim organizations. The new realities of the social, political and spiritual life of society have had a great impact on Islam. The number of mosques is growing, the network of Muslim schools, madrasahs, academies, institutes is expanding, the number of publications is increasing. Currently, there are 1,800 mosques in Uzbekistan, most of them cathedral mosques. There are secondary and higher educational institutions in Bukhara and Tashkent, and madrasahs in many large cities. Since 1998, the Islamic University has been operating in Tashkent, which trains qualified personnel for the spiritual and religious sphere.

Additionally, in 1995, the International Islamic Research Center was established in Tashkent, which conducts research aimed mainly at studying the theory and history of Islam, translates religious writings, and investigates the life and work of prominent theologians. At present, where the resting place of the great thinker of the Muslim world Imam al-Bukhari is located, the International Research Center named after Imam Bukhari and the school of hadith studies operate. Every day, the creative ties of the believers of Uzbekistan with foreign Muslims are expanding in order to work together for the benefit of the world. Islam today, in the context of the

changed political picture of the world, has objective conditions not only for preservation as one of the leading religious' systems of the world, but also for some strengthening of its significance as an ideological banner in the matter of humane and harmonious development of society.

Summing up, for centuries, Islam has been a sacred faith and moral code for Muslims, as the center of primordial values and moral imperatives. Islam is the comprehension of Truth, the cultivation of the need for good deeds, it calls us to goodness and peace, the preservation of the true human principle.

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## BLOCKCHAIN TECHNOLOGIES: CHARACTERISTICS AND ADVANTAGES

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### ABSTRACT:

**It is known that blockchain technologies play an important role in the innovative development of commercial banks. This article provides an analysis of the specifics of the use of blockchain technology in the activities of commercial banks, as well as suggestions and recommendations for the development of their implementation, based on modern requirements.**

**KEYWORDS: commercial banks, blockchain, digital technologies, digital economy.**

### INTRODUCTION:

In the modern age of widespread use of IT technologies in the economy, each of us is faced with such concepts as "digital currency", "digital technologies". But, despite the fairly widespread use of digital technologies in the world and their constant development, their coverage of new markets and areas in various countries of the world, most of people do not fully understand or are not at all familiar with these concepts. However, it is reasonable to consider exactly the system on which such technologies are based - blockchain.

Trends in the development of banking, investing or crypto currency over the past ten years, often overlap with the concept of "blockchain", the accounting technology that underlies the Bitcoin network. Blockchain (English blockchain, initially block chain [1]) is a continuous sequential chain of blocks (linked list), built according to certain rules, containing information. The connection between blocks is ensured not only by numbering, but also by the fact that each block contains its own hash-sum and the hash-sum of the previous block. To

change the information in a block, you will have to edit all subsequent blocks. Most often, copies of blockchains are stored on many different computers independently of each other. This makes it extremely difficult to change the information already included in the blocks [2].

Blocks" in the blockchain are made up of digital data. Specifically, they have three parts:

1. Blocks store transaction information such as date, time and amount (Note: this example is for illustrative purchases).
2. Blocks store information about who participates in transactions. Instead of using real names, the purchase is recorded without any identifying information using a unique "digital signature" like a username.
3. Blocks store information that distinguishes them from other blocks. Just as people have names to distinguish them from one another, each block stores a unique code called a "hash" that distinguishes it from any other block. Hashes are cryptographic codes created using special algorithms.

According to Cotillard [3], famous names like Morgan Hase have a strong faith in the future of blockchain technology. An American multinational investment bank headquartered in New York has opened a new division called the Quorum division specifically to research and deploy blockchain technology. Quorum is a distributed ledger and smart contract platform for enterprises that supports fast transactions and bandwidth, solving problems for the financial industry, banks and beyond. According to Resources, they have already issued a variable rate distributed ledger based annual certificate of deposit.

Drescher's book *Blockchain Basics: A Non-Technical Introduction in 25 Steps* explains the basics of blockchain technology. The basic terminology is explained by images, analogies and metaphors [4]. This book bridges the gap that exists between purely technical blockchain books and purely business-oriented books.

R. Ayupov believes that a blockchain is a database that simultaneously stores information on many computers connected to the Internet [5]. In our opinion, this description does not cover blockchain in detail. He also notes that the benefits of blockchain are its transparency, efficiency, simplicity and value.

One block in a bitcoin blockchain can actually store about 1MB of data [6]. Depending on the size of the transactions, this means that one block can accommodate several thousand transactions. When new data is stored in a block, it is added to the blockchain. The blockchain, as the name suggests, is made up of several blocks linked together. However, to add a block to the blockchain, four things must happen:

- The deal must take place. In many cases, a block can group potentially thousands of transactions together, so the transaction will be packed into a block along with information about other users' transactions;
- The transaction must be confirmed. With blockchain, this job is left to the network of computers. When you make a transaction, this network of computers is in a hurry to check if your transaction happened as you said. That is, they confirm the details of the purchase, including transaction time, amount, and participants.
- The transaction must be stored in a block. After the transaction is confirmed as correct, it will receive a green light. The amount of the transaction, the digital signature of the person who made the

transaction, and the digital signature of the partner organization are stored in the block. There, hundreds or thousands of others are likely to join the deal;

- After checking all transactions of the block, it must be assigned a unique identification code, called a hash. The block is also given the hash of the most recent block added to the blockchain. After hashing, the block can be added to the blockchain.

When this new block is added to the blockchain, it becomes publicly available for viewing all the information about when, where and by whom it was added to the blockchain.

Blockchain technology can be considered the ideal ledger. The data in the blocks of the blockchain cannot be replaced with others, they cannot be faked or obtained unauthorized access to them, since the reliability of the information stored in the blockchain is confirmed by all owners at a time. Blockchain, from a technical point of view, is so flexible that it can be tailored to almost any need, from the use of accounting data to the system for recording votes during voting.

Thus, the main advantages of blockchain technology are:

The main advantages of Blockchain technology

Data reliability	Decentralized system	Immutability of data	Lack of intermediaries between participants	System transparency
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Fig. 1. The main advantages of blockchain [7]

In recent years, blockchain technology has been actively implemented in the financial sector in England, Japan, USA, China and other countries. According to Spanish bank Santander, blockchain implementation could reduce banking infrastructure costs in the international payments, securities and regulatory compliance sector by \$ 15-20 billion starting in 2022. According to PwC, about 300 technology startups are currently working on

solutions for the implementation of blockchain technology in the financial services sector, most of which are concentrated in the United States and Great Britain [8].

Uzbekistan has also taken a course towards blockchain implementation. In Uzbekistan, it is possible to implement and use blockchain in the banking, medical and land sectors, and use it in the sector of electronic identity cards. This will greatly reduce the time spent on individual transactions, ensure the reliability of data, make it easier to obtain government and banking services from government agencies, and reduce the likelihood of errors by government officials, making life easier for the entire population.

Based on the preliminary estimates, this will happen by 2030 [9].

According to the majority of experts familiar with this technology, blockchain technology is one of the most promising on the market in the near future, but for its rational implementation and full use it is necessary to thoroughly study the risks and be regulated by law.

The use of blockchain in banking can provide banks with a number of benefits. In particular, foreign banks attach great importance to such advantages as reducing the level of fraud, errors and costs of document circulation, maintaining the level of competitiveness, and accelerating the processing of transactions.

The technology is widely used in the banking sector. In particular, it can be used for clearing operations, for making payments, trade financing (with letters of credit), issuing syndicated loans, for personal identification.

As a rule, banking institutions carry out active operations within a five-day working week, and even the result of some operations performed at the end of a Friday's working day, as a rule, is only visible on Monday. The

implementation of blockchain technology will help accomplish these within the short time it takes to add a block to the blockchain, regardless of the time or day of the week. By using blockchain, banks also have the ability to exchange funds between institutions faster and more securely. For example, in the securities market, the settlement and clearing process can take up to three days (or longer if the transaction is carried out internationally), which means that money and shares are frozen during this time. Sometimes, even being on the road for some time gives rise to the danger and risks of transaction amounts. European Bank Santander and its research partners estimate potential savings of \$ 15 billion to \$ 20 billion annually [10]. Capgemini, a French consulting company, has calculated that consumers can save up to \$ 16 billion annually in banking and insurance fees using blockchain-based apps [11].

Therefore, those banks of our country that want to service a transaction in a fairly short time, efficiently and safely manage complex clearing operations, carried out, inter alia, within the framework of cooperation with foreign banks, will have to implement blockchain technology.

Certain foreign banks continue to implement and monitor the results of blockchain implementation in order to determine in which area this technology will be most effective. And this process can take a long time.

The dangers of using blockchain technology

Significant technology costs associated with mining	Low transactions per second	History of use in illegal activities	Susceptibility to hacking
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Fig. 2. Dangers of using blockchain technology

Moreover, the use of this technology is influenced by both external and internal factors and conditions.

As a rule, first of all, the banks of Uzbekistan need to create an appropriate information and communication infrastructure and business environment. To fully implement the blockchain, other participants in the financial market will have to use it.

In addition, it is necessary to amend the banking legislation, since the laws in force have restrictions.

The development of blockchain technologies in the banking system lays the foundation for the development of blockchain technologies in other systems. With the help of blockchain technology in the tax system, the management load is reduced, it is easier for the business entity to obtain information about the movement of cash flows in the bank account and the existing files, without excessive hassle, it is possible to easily pay off tax arrears [12].

The use of blockchain technology is also characterized by the ability to protect transactions from cyber attacks. Security problems are addressed in several ways: new blocks are always stored linearly and chronologically. In other words, they are always added to the "end" of the blockchain. Since the block was added to the end of the blockchain, it is very difficult to go back and change the contents of the block. This is because each block contains its own hash, as well as the hash of the block in front of it. Hash codes are created using a mathematical function that turns digital information into a string of numbers and letters. If this information is edited in any way, the hash code also changes. That is, it will be necessary to change the hash of all subsequent blocks. And recalculating all these hashes will require enormous and incredible computing power. That is, once a block is added to the blockchain, it becomes very difficult to edit and impossible

to delete. And in order to ensure trust, a system has been introduced into the blockchain technology that requires "proof" by users of "themselves" in order to gain access to participation in the blockchain network. For this purpose, it is necessary to solve a complex computational mathematical problem. If the computer solves one of these problems, it gets the right to add the block to the blockchain. The process of adding blocks to the blockchain is called "mining" and is not easy. To solve complex mathematical problems, computers must run programs that require significant amounts of energy.

For unauthorized changes in information in the blocks of the blockchain, it would be necessary to control more than 50% of all computing power in the blockchain in order to be able to suppress all other network participants. Given the massive size of the blockchain, a so-called 51% attack is almost certainly not worth the effort and most likely impossible. In the event that a hacker takes possession of a copy of the blockchain, only one copy of the information will be compromised, not the entire network.

Thus, it can be concluded that blockchain technology is actively included in our economic and financial policy, since for full cooperation with foreign financial institutions, full-fledged conclusion of transactions, transactions, it is necessary to introduce and use these technologies in our country. In addition, the advantages that the use of these technologies give speak in their favor, and this can become one of the factors in the enormous savings of financial and time resources when performing thousands and millions of financial transactions.

Also, without knowledge of this technology, in the future it will not be possible to fully navigate in the modern economy, in particular in the financial sphere, since, as crypto currencies grow, which is a



phenomenon that is not subject to regulation by legislative acts of different countries, it will be difficult to take them into account when assessing monetary mass, demand for monetary resources, as well as other significant macroeconomic parameters of the country's development. But this requires a modern innovative restructuring of the country's social, financial and economic system.

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## THE SOCIAL STRUCTURE OF THE KYRGYZ AND KIPCHAKS IN THE KOKAND KHANATE AND THEIR ROLE AND IMPORTANCE IN THE POLITICAL LIFE OF THE KHANATE

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### ABSTRACT:

**This article provides information about the social structure, culture and lifestyle of the Kyrgyz and Kipchak people living in the Kokand khanate. There is also information about the role and importance of Kyrgyz and Kipchaks in the political life of the Kokand khanate.**

**KEYWORDS: Kokand khanate, Kyrgyz, Kipchak, right side, left side, Uyghur, Turkestan, tribe, group, nayman.**

### INTRODUCTION:

The Kyrgyz tribes are divided into 4 main groups within the Kokand khanate. Their social composition consisted of many tribes and ethnic groups, mainly living in mountainous areas.

These are:

Thirty boys. (Right side)

Thirty boys. (Left side)

Alcohol. (Right side)

Alcohol. (Left side)

These groups are socially divided into many tribes.

### MAIN PART:

Thirty sons (Right side): Adigine, Djouru (Tasma, Tengizbay, Acha-djouru, Ay-djouru, Karagunas, Elchibek, Kyodyogyochun,) Leaf (Kara-bargi, Sari-bargi, Ak- bargi, Taz-bargi, Tooke, Savay, Kongurat, Ajibek-uulu, Kachibek-uulu, Charikchi-uulu, Sarttar, Arday-muunak, Kyokchyo uulu, Oldjoke), Byoryu (Bashi, Hodjoke, Alike, Atake, Buyla byoryu, Saaginik uulu, Maytaran uulu, Djuktu, Bok kara), Kara-bagish (Bashtik, Dosmat, Nazarkul, Kara-bagish, Mirzake, Djanay, Djanibek, Boston bagish,

Atamkul uulu, Kazi uulu, Byoryu uulu, Bazar uulu, Arik uulu), Paygut (Dyurmen, Dyume, Saray, Alchin, Argin), Avat (Tatar, Tama), Mongush, Jagalmay (Tyolyoykyon, Djoosh, Djilkeldi, Tyoyoke, Djapalak, Kodogochun), Kosh-tanga (Uluu katin, Mangit, Erke-kashka, Sokolok, Sarilar, Kyok djatik, Saray), Mongol (Baymongol, Budjavash, Samansur, Baki, Atake, Boor).

Thirty sons (Left side): Kushchu (Kotkar), Munduz (Munduz, Kara cholok, Karakul, Mamat, Kirk tamga, Kotur kaman, Kaman, Kilich tamga), Basiz (Djeerenchi, Kashka, Aydar ali, Byolyokpay, Karake).

Drinks (Right side): Kesek (Kara Saadak, Kidirshaa, Boston, Baykesek, Kesek, Karakesek, Kangli, Kizil ayak, Bor bash, Avay kesek, Djo kesek, Aktachi, Chuchuk, Alashan), Teit (Kara teit, Sari teit, Chal teit, Bay teit, Arik teit, Chon teit, Uyghur teit, Djaman teit, Chapan teit, Aytemir teit, Tokum teit, Chegitir teit, Chon Kyrgyz).

Drinks (Left side): Naiman (Bostorgoy, Bazar-baldar, Chandake, Utay, Kul nayman, Kojo nayman, Byoyo nayman, Mirza nayman, Kiik nayman, Djoonbut nayman, Kuran nayman, Kasharkul nayman, Djoyorde nayman), Kyrgyz-Kipchak (Djamanan, Omonok, Taz, Sherden, Karmish, Tor aygir, Axtachi, Kojom shukur, Djarti bash, Altike, Sakoo kipchak, Kizil ayyak), Chon Bagish (Kalmak), Dyoyoles (Ay tamga, Kosh tamga, Karagayluu, Nurkut, Karateginchi, Agachke, Merkit), Sart-Kipchak.

By the middle of the 19th century, many Kipchak tribes, who had taken control of the Kokand khanate, began to move to the khanate. Their migration to the territory of the khanate caused dissatisfaction of the population of the

khanate. Because the Kipchak tribes began to plunder the property and houses of the khanate. Their leader, Musulmankul (the leader of the Kipchak tribe's Kulan tribe), held the position of commander-in-chief of the khanate, keeping the young khan of the country, Khudoyorkhan, in complete control. During the reign of the Muslims, the Kipchak tribes were mainly Kulan-Kipchak, Chinese-Kipchak, Magyar-Kipchak, Sigal-Kipchak, Toraigir-Kipchak, Kara-Kipchak, Burgut-Kipchak, Yellow-Kipchak, Chigir-Kipchak, Andaraz-Kipchak. They settled in the Fergana valley and Tashkent. During the reign of the Muslim in 1845-1852 years, the main system of government in the khanate was at the disposal of the Kipchak tribes. On October 9, 1852, Khudoyorkhan with the army called from Tashkent organized the massacre of Kipchaks in the khanate. As a result, about 20,000 Kipchaks were killed. Their homes and property were confiscated. The lands occupied by the Kipchaks were sold at half price. The reason for the above-mentioned events was the oppression of the local population by the Kipchak tribes.

By the beginning of the 18th century, a new Uzbek state, i.e. the Kokand khanate, was established in Fergana. This state has a special place in the history of Uzbek statehood. We considered it appropriate to provide information about the ethnic composition of the population of the Kokand khanate.

It is known that the population of the Fergana valley and adjacent areas has long been distinguished from other parts of Central Asia by its polytechnic nature. Such ethnic identity was preserved during the Kokand khanate. Mainly Uzbeks, Tajiks, Kyrgyz, Uyghur and Karakalpaks inhabited the territory of the Kokand khanate. In addition, a small number of Jews, Tatars and other ethnic groups, inhabited the khanate.

Uzbeks made up the bulk of the population of the Kokand khanate. It should be noted that until the beginning of the twentieth century, some Uzbeks lived as sedentary and the rest as semi-nomadic. By the beginning of the twentieth century, more than 828,000 Uzbeks in the valley lived in settlements, engaged in agriculture, handicrafts and trade. In the Russian language literature the ethnonym "sart" is used for this sedentary part of the population.

However, in recent years it has been argued that the use of this ethnonym against the Uzbek people is incorrect and that this ethnonym has been introduced into scientific use by Russian-speaking researchers from the point of view of discrimination against this nation.

Mahmudkhoja Behbudi, a representative of the Jaded movement, also noted that the use of the ethnonym "Sart" against the Uzbek people, contradicts the historical reality, and that this ethnonym has never been used as the name of his people. The total number of semi-nomadic Uzbeks in the valley with different tribal structures was more than 215,000 at that time. Among them are large ethnographic groups in the territory of Kokand khanate, such as Turks, Ming, Kipchak, Kurama, Yuz, Nayman. These tribes participated as important ethnic components in the consolidation of the Uzbek people.

Tajiks made up a significant part of the population of the Kokand khanate. They are mainly located in the western and northwestern part of the valley. In the present-day Sughd region of Tajikistan, Tajiks make up the bulk of the population. At the same time, they lived in a number of other settlements of the Kokand khanate.

Analysis of historical sources shows that in the 17th and 18th centuries a large group of Kyrgyz living north of the Tianshan Mountains settled in Fergana. The Kyrgyz ethnos, which

has a different tribal structure, also lived in the mountains and foothills of the Kokand khanate. They took an active part in the economic, socio-political and cultural life of the valley.

The Uyghurs are one of the oldest Turkic ethnic groups in East Turkestan. From the second half of the 18th century, especially after the defeat of the Muslim uprising against Chinese feudal lords in the 19th century, many Muslims in East Turkestan, especially many Uyghur families, fled to the Fergana valley. As early as the middle of the 19th century, about 300,000 Uyghurs lived in the Kokand khanate. Researcher I.V. Zakharova also estimates that 200,000 to 250,000 Kashgars lived in the Kokand khanate before 1860. The political crisis in the Bukhara khanate from the 18th century forced many peoples to leave the region. As a result, a part of the population living around Bukhara and Samarkand settled in the territory of Kokand khanate. In particular, the Karakalpaks living in the middle reaches of the Syrdarya settled in the territory of the Kokand khanate. The Karakalpaks, who moved to the territory of the Kokand khanate, settled along the Syrdarya and Karadarya rivers and continued their traditional economy.

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#### **CONCLUSION:**

Thus, the Kokand khanate is also characterized by the diversity of its ethnic image. However, such ethnic diversity was one of the important factors in the development of economic and cultural ties between the people of the valley.

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## **THE IMPORTANCE OF FINANCIAL ORGANIZATIONS IN THE ECONOMY AND WAYS FOR FURTHER IMPROVING BANKING SECTORS**

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### **ABSTRACT:**

**It is obvious that flourishing of any new business or company is based on the initial supports by the government. Clearly, political, financial, and economical support of the government helps to the companies and enterprises to develop their businesses. This article analyzes the importance of governmental support for the enterprises and businesses and several proposals have been made for further improvements in this sector.**

**KEYWORDS: financing, economy, economic growth, financial stability, institutional support, enterprises, business, organization**

### **INTRODUCTION:**

Clearly understanding the role of supporting businesses and enterprises for the development of both national economy and the growth of GDP, the government of Uzbekistan has been making several facilities for the businesses. Exactly, the president of Uzbekistan adopted a decree on the establishment of the Chamber of Commerce and Industry. This Chamber was established to improve the activities of business entities and assist them in obtaining financial and legal benefits and assistance. The main purpose of this organization is to establish systems to support entrepreneurship and business organizations operating in the country, especially newly established organizations [1]

### **MATERIAL AND METHODS:**

It is said that institution that support companies both political and economical is a company engaged in the business of dealing with companies for helping to develop its financial stability and funds. Such kind of institutions encompass a broad range of business operations within the financial and political services sector including banks, trust companies, insurance companies, brokerage firms, investment dealers and political organizations of the government in order to support business companies [2].

Additionally, the term institutional support refers to the part of economic environment of industry and business. It consisting of authorities and institutions whose decisions and active support in form of laws, regulation, financial and non-financial help brings a lot of changes in the functioning of any business. The institutions could be government owned, statutory, semi-autonomous or autonomous. It is the government or government supported institutions authorized to take up certain activities – financing, marketing, project preparation, training the to promote industrial activities in the state. There are three stages of promotion – inception stage, operational stage and expansion or diversification stage. The Government through its plans and policies assisted the business houses in facilitating in the above stages through various specialized institutions set up as per the law. An entrepreneur who needs to set up a business unit of his own or with his

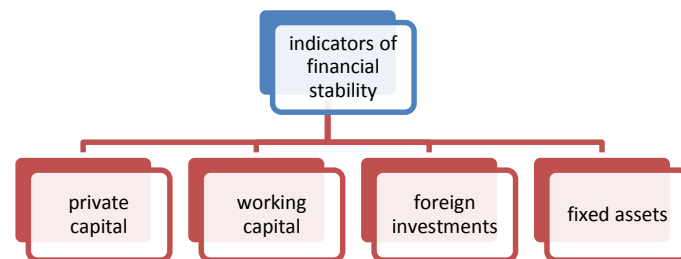
friends and relatives is supposed to know the various institutions or organizations working as per the law for the purpose. Dissemination of information in this regard can only help them in achieving the very dream of becoming a successful entrepreneur [3].

It should be noted that supporting any economical company by the government helps to the country to develop its economy and improve the shares of GDP. Most of professors of economy stress that governments should support those who has low financial stability indicators so that improve and prevent from crisis in those companies [4].

According to Rakhimov M.Yu one of the main reasons for economic insolvency is the decline in the financial capacity of the enterprise. The financial potential of firms and companies can be divided into financially stable, financially risky and financially unstable firms and companies [5].

It is said that several indicators can define financial stability of companies and

enterprises, and the indicators are described in the following figure[3]:



Indicators of financial stability

**RESULTS:**

It is clear that supporting institutions and organizations have significant role in managing and developing any entrepreneurial companies. The major and basic tasks of financial organizations for supporting companies are following:

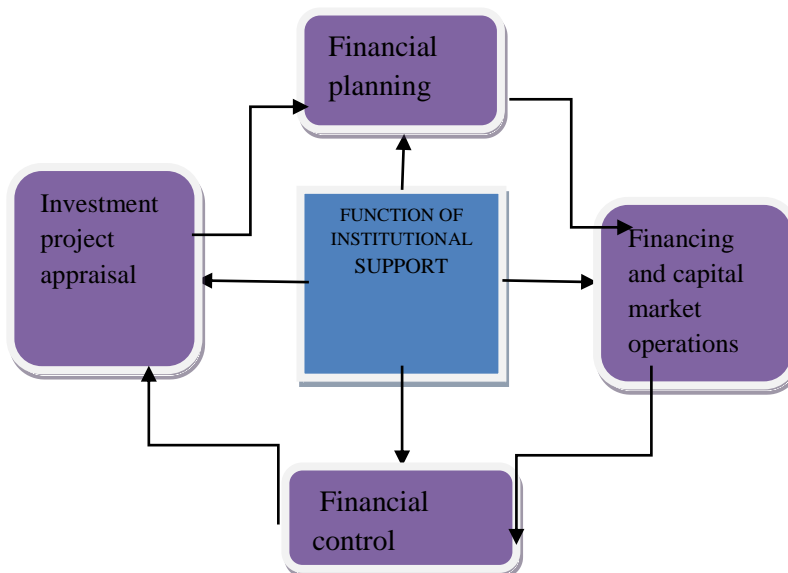


Fig. 1. Function of institutional support [6]

**Financial planning:** the likely effect of proposals on the financial performance and

position of the business is a vitally important input to the overall planning process. By

developing projected financial statements, as well as other financial estimates, the viability of proposed courses of action can be evaluated.

**Investment project appraisal:** assessing the profitability and riskiness of proposed investment projects is another important input to the overall planning process. By appraising projects in this way, companies can make more informed decisions concerning either their acceptance or rejections.

**Financial control:** It is obvious that controlling the financial activities of the company provides clear and more exact data about current processes and future risks. Clearly, financial control helps to the companies to prevent future crisis.

**Capital market operations:** raising funds is needed for further developing the company

from the capital markets and financial institutions help to the companies to make decisions about how finance can be raised through the markets, how securities are priced and such kind of processes.

Carried studies also showed that those organizations can also help to the companies for preparing projected financial statements and the following steps are basic steps for this process:



Fig. 2. Steps in preparing projected financial statements [7]

It should be noted that preparing projected financial statements help to forecast future profits of company and prevent risks and future crisis, and financial institutions consider each aspect of economic activities of companies while making projected financial statements.

A research which was conducted for identifying the function of financial organization on analyzing cash transactions revealed that financial organizations have significant role for helping businesses to control cash inflow and outflow. It is the fact that cash has been described as the “lifeblood” of the businesses. It is vital for a business to have sufficient liquid resources to meet its

maturing obligations, as failure to do so can have disastrous consequences. The projected cash flow statements monitor future changes in liquidity and helps companies to assess the impact of expected future events on the cash balance. It can identify periods where there are cash surpluses and cash deficits, which will allow companies to plan these occurrences. Where there is a cash surplus financial institutions help to companies in considering profitable investment of cash, and where there is a cash deficit financial institutions help to companies for making a decision on the ways in which this can be financed.

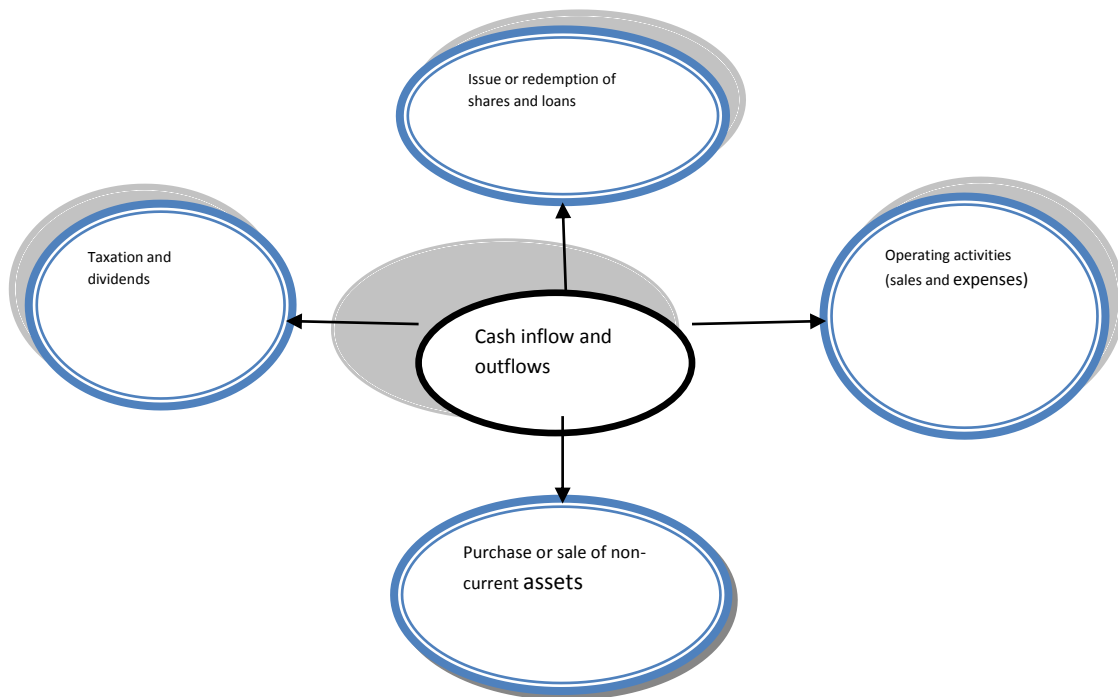


Fig. 3. Cash inflow and outflows [7]

The Chamber of Commerce and Industry has been established in the Republic of Uzbekistan to improve the activities of business entities and assist them in obtaining financial and legal benefits and assistance. The main purpose of this organization is to establish systems to support entrepreneurship and business organizations operating in the

country, especially newly established organizations. There are also several functions of this organization, which can be seen in Figure 4 below.





Fig. 4. Functions of Chamber of Commerce and Industry of Uzbekistan[6]

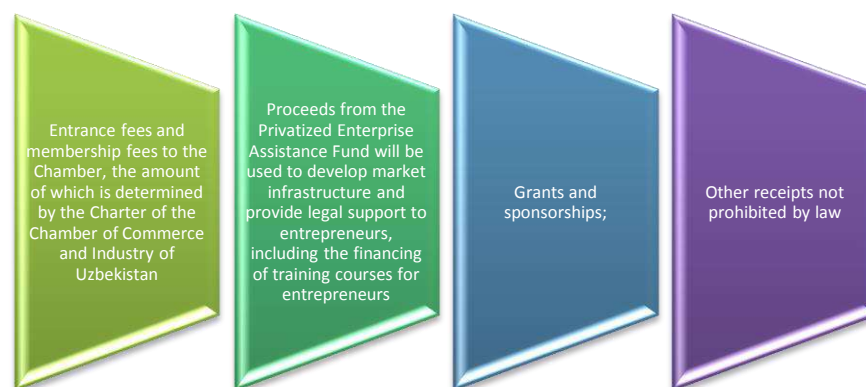


Fig. 5. Sources of financing of Chamber of commerce and Industry[1]

It should be noted that there are branches of that chamber and they support of the organization of businesses and enterprises.

Table 1. Statistics of Chamber of Commerce and industry [8]

Nº	Years	Number of provided services	Total amount (in thousand soums)
1	2010	36703	883781.2
2	2011	40923	1006257.5
3	2012	27387	1036269.2
4	2013	30413	1139073.4
5	2014	28310	1195167.7
6	2015	24143	1024820.1
7	2016	68617	1852484.0
8	2017	46915	1420536.8

The Chamber of commerce and Industry supports business companies with several policies and these policies help to businesses to make more profit and improve their productivity by providing both financial and economical facilities. Main components of policy of government financial institutions of Uzbekistan can be seen in the following figure4.

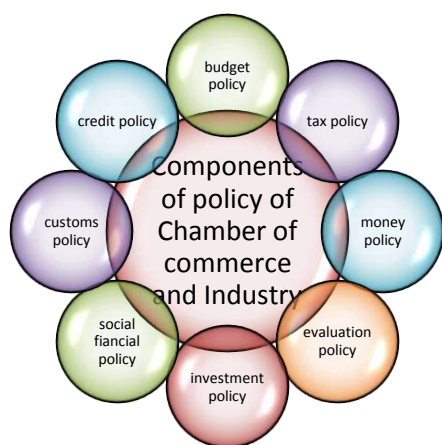


Fig. 6. Components of policy of Chamber of commerce and Industry[8]

**CONCLUSION:**

It can be said based on the above discussed data that the institutions which support enterprises are developing year by year in our country and they are serving to the

organization to develop their businesses. However, several proposals have been made for further improvements in this sector of the government:

- Increasing the number of organizations that support businesses in the country
- Establishing IT technologies in the service sector of such kind of organizations
- Finding further ways of financing support organizations for better serving to the businesses
- Establishing new organizations in districts for supporting new established businesses

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## BUILD AN ADAPTIVE CONTROL SYSTEM WITH FLEXIBLE FUNCTIONS

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### ABSTRACT:

**This article is based on the determination (or assessment) of the current values of parameters or properties of an object, the construction of control systems that perform flexible functions, and the corresponding reconfiguration of the parameters of system regulators. The main thing here is to carry out identification in the shortest possible time, at a speed close to the speed of real dynamic processes.**

### INTRODUCTION:

The construction of control systems performing adaptive functions is based on the identification (or estimation) of the current values of the parameters or characteristics of the object and, in accordance with this, on the subsequent restructuring of the parameters of the system regulators. The main problem here is the implementation of identification in the shortest possible time, preferably at a rate close to the rate of real dynamic processes. In the simplest control systems, it is possible to control the characteristics or parameters of the system. Identification in adaptive systems of this level is limited to one or two controlled parameters and is carried out on the basis of direct and indirect measurements of the necessary variables (using sensors or computing units). Later, the identification approach began to develop based on the use of adjustable models in adaptive systems that identify the current parameters and variables

that are inaccessible to measurement. A measure of the quality of identification is associated with the extremization (most often minimization) of a certain evaluation function - the quality function (QF). The process of minimizing the KF is associated with a change in the parameters of the model (parametric tuning) or the introduction of additional adaptive signals from some adaptive block (signal tuning).

The computational process of KF minimization is an integral part of the adaptive identification algorithm. Another computational process relates to control, as a result of which the parameters of the system regulator are calculated and changed or an additional adaptive signal is generated at the input of the system based on the information obtained from the adaptive identification. Thus, there are two adaptation processes in identification adaptive systems: identification and control. A configurable model as a block can be consistent with the identified object in different ways, namely: parallel connection, serial and mixed. In addition, it is possible to connect the model to parts of the object [3]. With a parallel connection, it is not required, as in other cases, the introduction of additional dynamic blocks (differentials) to implement operator's inverse to the operator of the identified part of the system or object. This connection option provides the greatest simplicity of the control system, therefore, we will accept it for the construction of an

adaptive TO control system with delay, as the most rational.

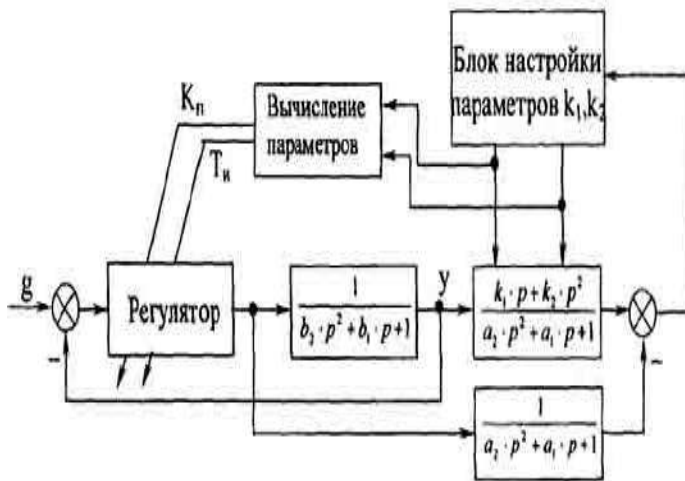


Figure: 1. Adaptive system with sequential tunable model.



Figure: 2. An adaptive system with a parallel tunable model.

A serial connection option is shown in Fig. 1, parallel connection - in fig. 2. Thus, many practical developments of adaptive systems can be combined into the structure of an adaptive system with a tunable model (ASNM).

Another approach to the construction of adaptive control systems for technological objects is associated with the use of a block of the reference model, which "obeys" the movement of the entire control system or its part. In the early development of adaptive

systems with a reference model, systems with a preliminary filter (Fig. 3) are distinguished, as well as adaptive systems with parallel inclusion of a reference model relative to the adaptable system [5], shown in Fig. 3. 4. In a system with a preliminary filter, the main task is to achieve "almost" inertia-free behavior of the system, against the background of which the dynamics of the reference model, included in front of the system, is "dominant" [1]. The use of an adaptive system with a parallel inclusion of a reference model has removed the restrictions on the use of this model, consisting in the complexity of the description (order) of the object, which took place in the development of systems with a preliminary filter.

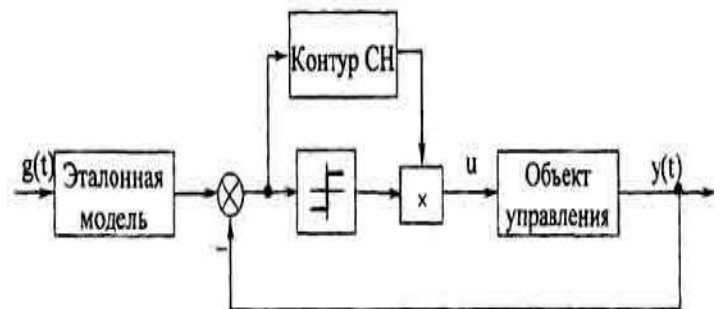


Figure: 3. Adaptive system with pre-filter.

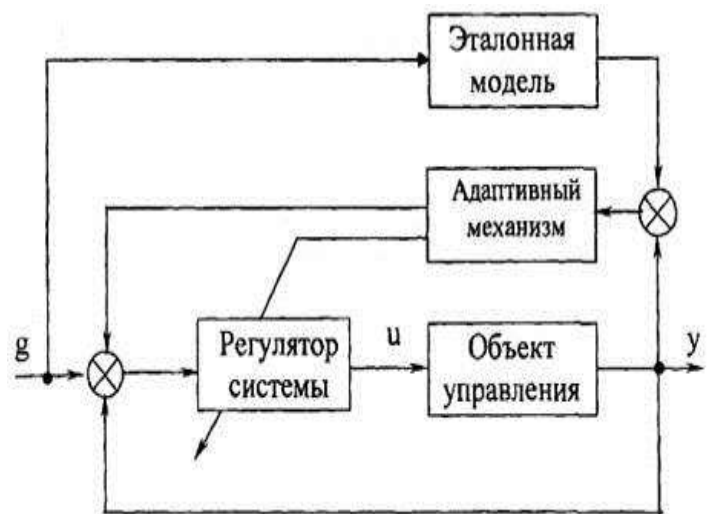


Figure: 4. Adaptive system with parallel reference model.

However, the issue of the stability of adaptive processes has not been fully

investigated. In addition, when developing adaptive systems with a reference model, the problem of choosing a reference model arises. It is very important that in these systems, in comparison with ASNM, tuning is carried out without prior identification. The measure of the "closeness" of the movement of the system to the reference model is also estimated by the corresponding KF, minimized during adaptation by adjusting the parameters of the controller (parametric adaptation) or by introducing an additional adaptive signal (signal adaptation). Thus, many developments of adaptive systems can be combined into the structure of an adaptive system with a reference model (ASEM) [6], shown in Fig. five.

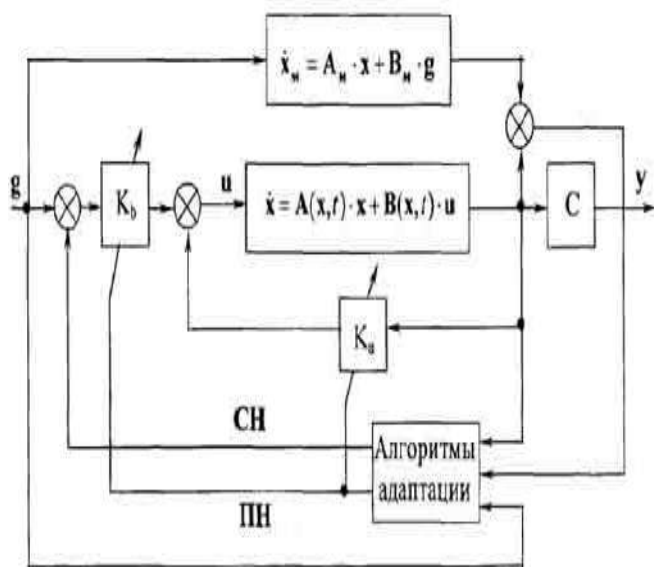


Figure: 5. Block diagram of ASEM with PN and SN.

Adaptive systems differ in the type of adaptation. There are search and searchless types of adaptation [2, 4]. Since the calculation of the change in the KF value, as a rule, is difficult, such a task is facilitated by the introduction of search movements, on which the KF increment is estimated. It is obvious that in search adaptation time is required to estimate the current value of the KF, which it would be desirable to reduce to a minimum.

This requirement is met by non-search adaptation, in which the calculation of the current KF is carried out directly, namely, the introduction of a reference (tunable) model gives real time the possibility of the current assessment of the KF of adaptive processes. The performance of ASEM and ASNM is based on the following obvious assumptions [5].

Ideal case:

- 1) OY - linear;
- 2) Reference model - linear and stationary system (for ASEM);
- 3) Model and system (object) of the same order;
- 4) On the adaptation interval, the parameters change only under the influence of the adaptive mechanism (quasi-stationary condition);
- 5) There is such a number of adjustable parameters of the controller (model), according to which the adaptive control is closed;
- 6) From external signals only input control signals act on the adaptive system;
- 7) The initial values of the tuned parameters before the moment of functioning of the adaptive system are unknown;
- 8) The state vector of the system (object) is measurable for all components.

Real life situations correspond to the general case where the assumptions for the ideal case either fail or are violated.

General case:

- 1) The reference model is a non-linear and non-stationary system;
- 2) The tunable (identifying) system contains nonlinearities;
- 3) The orders of the model and the object do not match;
- 4) The adaptive system can be open for all adjustable parameters;
- 5) During adaptation, the parameters of the object change (the condition of quasi-stationarity is not met);
- 6) External disturbances act in the system;

7) Measurements of the components of the state vector of the object are made with additive noise.

The assumptions for the general case, however, can differ for ASEM and ASNM, in contrast to the ideal case: for example. The reference model is chosen of a smaller order than the object. The assumption on the fourth point for the general case applies practically only to ASEM. Based on the analysis of available adaptive systems, it is possible to single out the structures of adaptive control systems that are most suitable for constructing adaptive control systems for technological objects with delay, as well as to single out the principle of adaptation that is effective in terms of the rate of flow of adaptive processes.

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# **STRENGTHENING CHARACTER EDUCATION IN VOCATIONAL HIGH SCHOOL**

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## **ABSTRACT:**

This research began from the emergence of character problems or character crisis by shifting the students' ethics values in the school. Where the students don't respect teachers and friends, there is brawl among students, even violence occurs in the classroom, this is a threat of disintegration of the nation. The formulation of the problem is how the strengthening strategy of character education. The purpose of this research is to know the strengthening strategy of character education in the school, related to implementation, monitoring evaluation, supporting factors, obstacles and obtained result. The research method used qualitative approach on natural subject or natural setting, by using observation data collection techniques, interviews and documentation, data analysis techniques through data reduction, verification and took a conclusions of processed data. The research was held at SMK 45 and SMK IT NU Saguling, West Bandung. The result of this study. Students become intent on strengthening the character education activities, responsive to social activities in the society, although not all students can implement it yet. The level of discipline is good because students feel shy if they aren't disciplined, the result of the shame cultural, some students who used to come late to be in

time even though not all students feel ashamed when coming late. The supporting factors the implementation of the strengthening of character education in the schools is a good strategy from the principal, the committee and a team of the parent class of students. The Obstacle factors, the shame culture is not held in the school yet, not all teachers become a role models in the schools who give good examples for students. Not all teacher become a strong and intelligent character. So that the presence of educators is as a key factor in the learning process, a professional and have a strong and intelligent character must really have atmosphere in the school, because through educators who have strong and intelligent character will create human resources which is a reflection of a nation that has strong and intelligent character, and virtuous morals.

**KEYWORDS:** Strategy, Strengthening Character Education, Vocational School.

## **INTRODUCTION:**

Character building which is an effort to embody the mandate of Pancasila and the Preamble of the 1945 Constitution is motivated by the reality of national problems that are currently developing, shifting ethical values in the life of the nation and state, waning awareness of national cultural values, the threat

of national disintegration, and weakening of national independence. (Source: National Character Book 2010-2025 National Character Development Policy, the current character building program, failed to address student brawls to the root of the problem. This is just a problem around brawls plus other delinquencies such as drugs, alcohol, free sex behavior, rape and murder, plus many problems that arise regarding the loss of respect for students towards their teachers.

Character education according to Lickona (1992: 5), character education is the deliberate effort to develop virtues that are good for the individual and good for society. This definition refers to conscious, planned efforts to develop good for individuals and society. Character education is aimed at shaping a person's personality through character education which results can be seen in one's real actions, namely good behavior, honesty, responsibility, respect for the rights of others, hard work and so on. According to Lickona this goodness is based on the fact that: 1) human dignity; 2) promote human existence and happiness; 3) provide kindness; 4) human rights and obligations. According to Lickona, the purpose of character education is to understand each other (to help people understand), care about each other, and behave according to ethical values (act upon core ethical values).

Character education is important for strengthening the dimensions of the values of Nationalist character, Integrity, Independent Mutual Cooperation and Religion of students as stated in Presidential Decree No. 87 of 2017. The quality of education is often seen from one side, such as in the dimensions of the ability of teachers in the field. 4 This dimension is only limited to the teacher's appearance in the classroom, while other backgrounds that influence it tend to be neglected. In order to strengthen the position and role of national

education, efforts are needed to organize education in various aspects in an effort to improve the quality of education.

#### **METHOD:**

Character education is important for strengthening the dimensions of the values of Nationalist character, Integrity, Independent Mutual Cooperation and Religion of students as stated in Presidential Decree No. 87 of 2017. The quality of education is often seen from one side, such as in the dimensions of the ability of teachers in the field. 4 This dimension is only limited to the teacher's appearance in the classroom, while other backgrounds that influence it tend to be neglected. In order to strengthen the position and role of national education, efforts are needed to organize education in various aspects in an effort to improve the quality of education.

#### **RESULTS AND DISCUSSION:**

The results of this study. Students become interested in strengthening character education activities responsive to social activities in society, even though not all students can implement it. The level of discipline is good because students feel ashamed if they are not disciplined, the result of the implementation of the shy culture of some students who usually arrive late becomes on time even though not all students feel ashamed if they come late. The supporting factor for the implementation of strengthening character education in schools is a good strategy from the principal and the committee as well as the parent class association of students. The inhibiting factor is that the culture of shame in the school environment has not been promoted, teachers are not fully or entirely as role models in 6 schools, which shows an example that students need to emulate. Teachers have not all become educators with strong and intelligent



characters. So that the presence of educators as key actors in the learning process, who are professional and have a strong and intelligent character, must not really have an atmosphere at school, because through educators who have strong and intelligent characters human resources will be created which are a reflection of a nation with character strong and smart.

#### **Strategy for Strengthening Character Education through 5 Main Values:**

- a. Religious
- b. Nationalist
- c. Independent
- d. Mutual cooperation
- e. Integrity

#### **Behavior of IT NU Saguling Vocational School Students:**

- a. Religious Attitudes (habituation of worship practices every Saturday, practice of funeral prayers, khouf prayers and i'taqqo)
- b. Nationalist attitude, routine flag ceremony with officials, pledge against drugs
- c. Independent attitude, through entrepreneurial activities
- d. Gotong Royong (students are involved in community activities of community service at school and outside of school)
- e. The honest attitude of students is not cheating

#### **Behavior of IT NU Saguling Vocational School Students:**

- a. Students understand the procedures for practicing worship and its goals
- b. Have a high nationalism attitude
- c. Having an attitude of not being dependent on others
- d. Students are diligent and care for the environment
- e. Students have an attitude of responsibility. Graduates of SMK IT NU Saguling

- f. There are students who graduated from high school, Nu Saguling, who become the imam of the mosque
- g. Students Become the leaders of the majlis ta'lim students and the rest of the graduates have worked in private companies and entrepreneurship

#### **a. Strategy to strengthen character education in schools:**

Planning through socialization beforehand, the components that are in school, namely the principal, teachers, students, education staff, school committees, and the role of the parent's class association as a control for children's negative behavior. This is done by involving the cooperation of parents who are members of the parent's class association of students, in order to create a mutual symbiosis between schools and parents.

The implementation of strengthening character education, first, the value of religious character, reflects faith in God Almighty which is manifested in the behavior of implementing religious teachings and beliefs by practicing congregational prayer in schools. This religious character value includes three relationship dimensions at once. The value of this religious character is shown in loving behavior and maintaining the integrity of creation. The religious sub-values include love of peace, tolerance, self-confidence, cooperation between religions and beliefs, anti-violence and violence, friendship, sincerity, not imposing one's will, loving the environment.

Second, the value of nationalist character is a way of thinking, behaving and acting that shows loyalty, concern, and high appreciation for the nation's culture, and students do the habit of doing scheduled flag ceremonies, holding exhibitions of traditional clothes and traditional food, Nationalist sub-values include cultural appreciation. The nation itself,

safeguards the nation's cultural wealth, is willing to sacrifice, excels, and achieves, loves the country, protects the environment, obeys the law, is disciplined, respects the diversity of culture, ethnicity and religion.

Third, the value of independent character is the attitude and behavior of not depending on others and using all energy, thoughts, time to realize expectations, in schools there is the formation of an entrepreneurial spirit through business center training. Sub values, this independent character is fighting power, professional, creative, and courageous and being a lifelong learner.

Fourth, the character value of mutual cooperation reflects the act of appreciating the spirit of cooperation and working hand in hand, establishing communication and friendship, providing assistance / assistance to people in need. Activities carried out through social services at schools and providing assistance to victims of natural disasters. The sub-values of mutual cooperation include respect, cooperation, inclusion, commitment to joint decisions, deliberation to reach a consensus, helping out, solidarity, empathy, anti-discrimination, anti-violence, and voluntary attitudes. Fifth, the value of integrity character is a value that underlies behavior based on efforts to make himself a person who can always be trusted in words, actions and work, has commitment and loyalty to human and moral values (moral integrity). This is implemented through the habit of not cheating while studying, having the courage to admit mistakes and accept sanctions. The sub-values of integrity include honesty, love of truth, loyalty, moral commitment, anti-corruption, justice, responsibility, exemplary, and respect for individual dignity.

The 5 ( five ) dimensions of strengthening character education have indeed been reflected in habituation at school but not

all students can understand and implement it, there are still students who cheat during tests, during PTS or UTS, during PAS, this requires more intensive supervision so that no such thing happened. Monitoring of the evaluation of strengthening character education, carried out by the principal of the program on program implementation, then the school supervisor, conducts monitoring every quarter.

**b. Supporting and inhibiting factors for the implementation of a strategy to strengthen character education in schools:**

The supporting factor for the implementation of character education in schools is a good strategy from the principal and the committee as well as the parents class association of students. The principal continues to motivate the school community not to stop providing education, especially in improving the character of students.

The inhibiting factor is that the teacher is not fully or entirely as a role model at school, which shows an example that students need to follow, for example a teacher who comes late, does not say hello . Teachers have not all become educators with strong and intelligent characters. So that the presence of educators as key actors in the learning process, who are professional and have a strong and intelligent character, there must really be an atmosphere at school, because through educators who have strong and intelligent characters human resources will be created which are a reflection of a nation with strong character intelligent, and virtuous, it can be interpreted as not yet exist.

Inhibiting factors in the macro environment, where to implement ordinary character education not all schools can implement it, while what is needed now is an application of character education that has an impact on the formation of a society with good

character, at this time it can be interpreted that the government is only limited to instructions but implements clear programs from the center have not been fully realized in the implementation of strengthening character education so that teachers are still confused in making or implementing programs.

Limited facilities and infrastructure for schools by providing free supplies have resulted in difficulties in the realization of programs in places of worship and other activities. Weak evaluation monitoring, especially from school supervisors.

**c. The results of implementing a strategy to strengthen character education in schools:**

Students become interested in strengthening character education activities responsive to social activities in society, even though not all students can implement it. The level of discipline is good because students feel ashamed if they are not disciplined, the result of the implementation of a culture of embarrassment for some students who usually arrive late becomes on time even though not all students feel embarrassed when they come late.

The results of the inculcation of religious attitudes are that there are some graduate students who become religious leaders such as becoming religious teachers or mosque imams, many graduates are absorbed in the work field, the achievements of some students have reached national and international levels in the fields of religion, art, entrepreneurial sports, and other productive skills, capable of entrepreneurship. But the maximum results have not been obtained because it is related to several obstacles with limited human resources and supporting tools. Clear guidance support has not yet been provided from the relevant education office.

**d. Strategy Model for Strengthening Character Education in schools:**

From the results of research on the principal's strategy in implementing character education in schools, namely through a strategy to strengthen character education which is formed through 5 (five) dimensions of attitude, religious, nationalist, independent, mutual cooperation and integrity, and through the role of the class association of parents of students with control children's negative behavior. This is when viewed from the dimension of character building and there have been additions involving the role of the committee and parents of students who are members of the parents' class association by controlling student negative behavior, then at school character education is a strengthening of character education, according to the Ministry of Education and Culture's directives and instructions. president, but this cannot be realized in a complete programmatic manner, due to the lack of clarity regarding educational strengthening programs that involve the entire education ecosystem in schools.

**CONCLUSION:**

Based on the results of the research described above, there are several recommendations with regard to strategies for strengthening character education in schools, namely as follows:

Due to the increasingly degenerated character of the younger generation and the fading of national culture and a sense of nationalism, therefore in schools it is necessary to optimize strategic steps in strengthening character education that can accommodate religious character education and nationalism or nationality.

Optimizing socialization or technical guidance regarding the implementation of strengthening civic education through MGMP,

MKKS, education instructors, supervisors, school principals, school committees, BK teachers, PAI teachers, PKN teachers, and all teachers in implementing strengthening character education through uniform curriculum, programs, syllabus and enforce the rules that have been set.

Increase the monitoring and evaluation of character education in a clear and continuous program.

Optimizing the cohesiveness of the school committee in terms of supervising students during school hours and at home so that character education in the formation of good attitudes at school can be well realized.

In order to examine the implementation of the principal's strategy in implementing character education, character education at the institutional level leads to the formation of school culture, namely the values that underlie behavior, customary traditions, daily habits, and symbols that are practiced by all school members.

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## THE ROLE OF MARKETING RESEARCH IN THE FORMATION OF COMPETITIVE ADVANTAGES

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### ABSTRACT:

**This article presents views on market research as a stage of increasing competitiveness. Marketing research as a special stage of marketing research is a very important factor. In addition, increasing competitiveness ensures that the enterprise does not fail in a competitive environment.**

**KEYWORDS: Marketing, market, marketing research, competition, competitiveness.**

### INTRODUCTION:

With the transition to the “buyer's market”, the competitiveness of an enterprise increasingly depends on how well its marketing is improved. The goal of every company is to achieve commercial success. Many factors are important for a company's prosperity: the right strategy, dedicated employees, a well-established communication system, and accurate implementation of the marketing program. Today's successful companies at all levels have one thing in common - they are consumer-oriented and all work is based on marketing. The main goal is to understand and meet customer needs in clearly defined target markets.

Employees of the company must create the highest customer value, ensuring complete customer satisfaction. It is the use of this approach in the activities of the enterprise that will allow you to get the desired share and profit. In a market economy, marketing is a necessary element, since marketing activities help to increase the efficiency of the company. With the development of market relations and the normalization of the market itself, marketing turns into a market concept of

enterprise management, into a system in which information coming from the market will be of great importance in the basis of practically all decisions. In the course of fulfilling his duties, a marketing manager needs a tremendous amount of information. The required information is often missing, arriving too late, or not credible. All of the majority of companies are beginning to realize the shortcomings of information support and are taking steps to improve their marketing research systems.

In this regard, the Decree of the President of the Republic of Uzbekistan Sh. M. Mirziyev dated February 7, 2017 No. PF-4947 "On the Strategy of Actions for the Further Development of the Republic of Uzbekistan" states that "high-tech processing industries, primarily Further modernization and diversification of industry through a qualitatively new stage aimed at the rapid development of the production of finished products with high added value based on deep processing of local raw materials is not accidental. After all, industrial enterprises make up a significant part of the country's production [1].

### LITERATURE REVIEW:

The role of marketing research in marketing research at enterprises is invaluable. Marketing research is the theoretical basis for developing appropriate research methods for each link in market research.

“Marketing research is a function that connects the consumer, customer and the public with marketing through information — information used to highlight and identify marketing opportunities and challenges; creation, improvement and evaluation of

marketing activities; monitoring marketing performance and improving understanding of marketing as a process [2].

Marketing research is the collection, processing and analysis of data in order to reduce the uncertainty associated with making marketing decisions. The market, competitors, consumers, prices, internal potential of enterprises are subject to research. Market research involves finding out the state of development trends, which can help identify the shortcomings of the current market situation and suggest opportunities and ways to improve it, but this is only a part of the problems that determine the content of marketing research in general.

All marketing research is carried out from two positions: the assessment of certain marketing parameters for a given moment in time and forecasting their values in the future. As a rule, predictive estimates are used in the development of both goals and strategies for the development of the organization as a whole, and its marketing activities. A company that has commissioned a market research or conducts it on its own should receive information on what to sell and to whom, as well as on how to sell and how to promote sales, which is crucial in a competitive environment. Research results can predetermine the change in the goals of the company.

There will be opportunities to increase the competitiveness of the enterprise through market research. After completing the research, it will be determined what opportunities the company has and what needs to be done to win the competition, and on this basis, certain strategies will be implemented.

Competition is rivalry, competition between commodity producers in the market for more favorable conditions for the production and sale of goods in order to obtain on this basis the maximum possible profit [3].

#### **RESEARCH METHODOLOGY:**

In order for manufacturing companies to actually win in a competitive environment, they need to research each segment of the market and carefully study all its elements. We recommend that you use sufficient information about this market when conducting marketing research. The study uses grouping, structural analysis, and subsequent analysis.

#### **ANALYSIS AND RESULTS:**

Different firms organize the performance of the marketing research function in different ways. Some have a dedicated marketing research department, others have only one specialist.

Specialized marketing departments usually have large enterprises that are able to incur significant costs associated with the operation of such a department. The marketing department is usually organized around one of the attributes: scope, marketing function, and marketing research phase. Thus, some enterprises serve both end users and intermediate consumers. In such enterprises, the marketing department may include two subdivisions: end-user marketing and intermediate-consumer marketing. Other businesses organize marketing departments by product group. Finally, such departments can be organized according to the stages of the marketing research process: data collection, data analysis, and others.

In some cases, the firm will appoint one specialist responsible for marketing research, but the main thing for him is to help managers understand the need to conduct appropriate research and organize the purchase of such research from marketing research consulting firms. In some firms, the organizational function of marketing research may not be formalized at all. This situation rarely occurs in large enterprises, but often occurs in small ones. In small businesses, their owners and a limited

staff of managers simultaneously perform many management functions, the environment of which must necessarily include the functions of marketing research. Managers in small firms, unlike large firms, can gather many types of marketing information relatively easily. Marketing research is based on general scientific principles and methods. Let's highlight the main stages of marketing research:

**FORMULATION OF THE PROBLEM:**

- Defining research objectives
- Choice of research methods
- Determining the type of information required and the sources of its receipt
- Data acquisition process
- Data processing and analysis
- Development of conclusions and recommendations
- Registration of research results.

The purpose of the research always depends on the actual market situation. It follows from the strategic settings of the marketing activities of the enterprise and is aimed at reducing the level of uncertainty in making managerial decisions. Changing the problem clearly is the key to conducting successful market research. The goals of marketing research follow from the identified problems, the achievement of these goals allows you to obtain the information necessary to solve these problems. They characterize the lack of information that must be addressed in order to enable managers to solve marketing problems. The goals should be clearly and precisely formulated, be sufficiently detailed, there should be a possibility of changing them and assessing the level of achievement. When setting the goals of marketing research, it is determined what information is needed to solve this problem. This determines the content of the marketing objectives. Thus, the main point in determining the objectives of the study is to identify specific types of information useful to

managers in solving marketing management problems.

The nature of the objectives of marketing research predetermines the choice of specific types of research bearing the same names, namely: exploratory, that is, to be aimed at collecting preliminary information designed to more accurately identify problems; descriptive, that is, it consists in a simple description of certain aspects of a real marketing situation; casual, that is, aimed at substantiating hypotheses that determine the content of the identified cause-and-effect relationships. In recent years, both in our country and abroad, small and large enterprises starting up business increasingly resort to the services of specialized companies that carry out marketing research on a commercial basis. These include companies that only collect marketing information. However, marketing campaigns cost 3-5 times the cost of the other two data collection approaches. Therefore, it must be compared with the quality and reliability of the information received. In addition, since the customer of the study himself does not participate in its conduct, especially in the case when such an order is made for him for the first time, it may seem strange to him that it is possible to collect data in different regions without leaving the company's office.

The markets for consumer goods and products for industrial and technical purposes are studied mainly using three approaches:

- By analyzing secondary information;
- By researching consumer motivation and behavior;
- By analyzing manufactured and sold products.

Within the framework of the first approach, all documents of interest to the enterprise, publishers, statistical bodies, various ministries, chambers of commerce, regional authorities, and also are the result of special non-marketing research are studied. Such information is quite cheap, even free, and

relatively easily accessible. It is obvious that the information may be closed, incomplete, insufficiently detailed. Therefore, it is usually clearly not enough to obtain reliable results.

The study of documents cannot provide operational information of the required quality; it only provides some statistics on the production and sale of the products under study. However, the range of products is usually too aggregated, so this information sometimes cannot be used for the needs of a particular enterprise.

The second approach to market research involves the study of consumer motivation and behavior by conducting special surveys: interviews, interviews, filling out questionnaires.

In any case, the respondents are professional experts who deeply understand the problem: users who influence the choice of the seller, buyers for whom the product has no secrets. Therefore, a specialist who conducts such a study must have a good knowledge of the relevant market and the product under study, and have information about the manufacturing companies and intermediary organizations.

It should be borne in mind here that the motivation for purchases of industrial and technical products is rational, and to a much lesser extent emotional, in comparison with the purchase of consumer goods.

When inspecting products for industrial and technical purposes, it is necessary to take into account that various specialists and managers of the enterprise who are part of its purchasing center take part in the process of preparing and applying the purchase decision. In addition to studying the opinions of consumers, the opinion of managers and specialists of intermediary, distribution organizations, as well as manufacturing enterprises is also studied. Studying the opinions of managers and specialists of intermediary trade organizations, obtaining the

necessary information from them is often an even more difficult task than conducting research at manufacturing enterprises. This raises the problem of maintaining a trade secret and ethical plan associated with the provision of information about products (attitude of consumers, sales volumes, etc.) of competing firms. Much depends on the ability of the marketer to obtain the necessary information, even in adverse conditions.

### **CONCLUSION:**

From the foregoing, we can conclude that the problem of organizing marketing research has many variable solutions, and therefore providing a scientific approach to this problem plays an important role in marketing management.

We believe that it is advisable for an enterprise to conduct marketing research and develop programs to identify the weaknesses of the enterprise based on the research results so that it can operate smoothly in a competitive environment. After all, in today's fast-paced world, every business strives to survive in the marketplace and generate high profits.

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# THE THEORETICAL BASIS FOR THE DEVELOPMENT OF A TECHNICAL PROPOSAL FOR HOSPITAL CLOTHING FOR PATIENTS WITH SKIN DISEASES

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## ABSTRACT:

The article presents the theoretical foundations and criteria for the development of a technical proposal for hospital clothing for patients with skin diseases.

**KEYWORDS:** clinic, hospital, hospital, special clothing, skin diseases, analog model, hygienic requirements, ergonomic requirements, natural fibers, colors, aesthetic indicators, microclimate.

## INTRODUCTION:

It is known that skin diseases are one of the most widespread and difficult to treat diseases of the human body. The widespread growth in the number of skin diseases is largely facilitated by the ecological situation, the growing power-to-weight ratio of industry and everyday life.

## MAIN PART:

According to modern statistics from the Institute of Medicine and Health Statistics in Uzbekistan in 2008, 855,337 patients with skin diseases were registered, while the analysis of statistical data of registered patients with skin diseases from 2000 to 2011 per 1000 people shows a wave-like trend in the development of these diseases (Figure 1).

It is common knowledge that insufficient attention has been paid to the

design of clothing for patients with skin diseases, or scientific research has been carried out mainly on the development of dressings.

1-Table.Statistical data on the incidence of skin diseases from 2007 to 2011 for 1000 people

Years	2007	2008	2009	2010	2011
Indicators	38,4	38,6	54,4	66,9	63,1

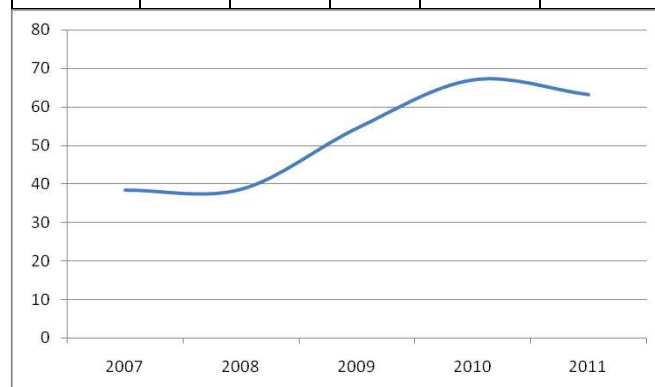


Figure 1. Graphical diagram of statistical data on diseases of the skin and subcutaneous tissue for 2000-2011.

So in the work of Asatryan A.D. [1] scientific research was conducted on the creation of new technological structures, sanitary and hygienic products for the toes and their comprehensive study.

In the work of Belyakova E.A. [2] focuses on research on improving health-improving measures in order to increase the efficiency of workers in textile enterprises.

In the works of Gurova E.A. [3], Savina A.V. [4] and Fayzieva R.R. [5] Research was conducted to develop anti-microbial medical dressings.

From a survey of medical personnel and patients of the dispensary for the skin of venereal diseases in the Andijan region, it became known that today hospital clothing for skin diseases should have constructive elements that allow for medical procedures.

The design should include as few seams as possible to reduce the risk of damage to the skin, the seams should be loose, the fabrics for clothing should be soft, pleasant to the touch, they should be slightly stiff, not irritating, and they should not stick to the body. Clothing must be appropriate for size and height, otherwise it can injure the skin. Fabrics must have good hygiene properties, that is, they must ensure the normal functioning of the body due to the microclimate under the clothing space. Since the hospital clothes worn by patients do not meet the above criteria, the relevance of developing clothes corresponding to them arises.

The problem of creating clothing for patients with skin diseases is currently not well understood. There is no normative and technical documentation that would clearly define the requirements for the design and manufacture of this type of clothing. Analysis of the state of development of clothing for patients with skin diseases showed that at present, practically no research work is being carried out in the field of materials science, design, technology and decoration of clothing. The elimination of the existing shortcomings, in our opinion, is possible only under the condition of qualitative changes in the methodology and organization of the process of designing clothes for patients with skin diseases.

To develop hospital clothing for patients with skin diseases, taking into account the nature of the disease and creating a comfortable state of patients, it is necessary to solve the following tasks:

- Analysis of statistical data and conducting a survey on skin diseases;
- Development of technical requirements for hospital clothing for patients with skin diseases based on the analysis of statistical data and a survey;
- Formation of a rational package of materials for the manufacture of hospital clothing; development of initial information for designing clothing for patients with skin diseases;
- Development of a rational ergonomic design of clothing for patients with skin diseases;
- Development of a rational industrial technology for the manufacture of structural units and assembly units of clothing for patients with skin diseases;
- Comprehensive studies of the physical and mechanical properties of materials recommended for the manufacture of clothing for patients with skin diseases, etc.

In the process of developing a technical proposal, it is planned to use theoretical and experimental studies based on general methodological principles of a systematic approach. The essence of the basis for the formation of the theoretical work of a technical proposal lies in the study of the works of scientists, as well as Internet data. Having studied a number of information in this direction, in this research work, We have taken the proposed methodology of O.I. Krymova as a basis. [6], since it fully meets the criteria for the development of hospital clothing for patients with skin diseases.

In accordance with this methodology, the main criteria for developing a technical proposal are:

1. Analysis of models similar to the designed model.
2. Model development - suggestions.

Consider the criteria for analyzing models similar to the designed hospital clothes, for this we have investigated a wide range of

dissertations, patents, as well as models of analogues of different states. The purpose of the analysis of analogue models is to collect material to identify the main constructive technical, technological, economic, operational properties of hospital clothing for patients with skin diseases, which are necessary to create new models that are superior in terms of indicators to the old ones.

Analog models should be selected according to the following main characteristics:

- name;
- appointment;
- material;
- type of cut,
- gender and age.

To conduct the analysis, it is necessary to select products developed by scientists and practitioners, as well as products used in practice today.

When developing proposal models, it is necessary to create a series of proposals in the form of sketches of new models and their designs based on the results of analogue models.

The number of sketches of model proposals will be carried out in accordance with the terms of reference developed at the initial stages of the study. According to the developed sketches of new models of hospital clothing for patients with skin diseases, it is necessary to give a description of their appearance and fundamental characteristics.

#### **CONCLUSION:**

Thus, the theoretical foundations for the development of a technical proposal serve to collect material to identify the main constructive technical, technological, economic, operational properties of hospital clothing for patients with skin diseases, which are necessary to create new models that are superior to the old ones.

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# ANALYSIS OF CONCEPT “LOVE” FROM CONTEMPORARY LINGUISTICS POINT OF VIEW

(ON THE MATERIALS OF ENGLISH AND UZBEK LANGUAGES)

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## ABSTRACT:

The article is targeted at the linguistic analysis of the concept of love, carried out in modern linguistics. The author considered three approaches to the analysis of the concept of love: philosophical, linguo-cognitive, linguocultural approaches. The commonality of these three approaches is that the concept of love is viewed not only as a basic element of the personality language, but as an expression of the cultural characteristics of the people. It is concluded that the concept of love occupies a leading position among the concepts of happiness, hope, faith and goodness. Not only emotional, but also cognitive and volitional aspects are necessarily present in one love.

**KEYWORDS:** Concept, love, lingua-cognitive approach, lingua-cultural approach, cultural value.

## INTRODUCTION:

Any language has its own specifics, due to the peculiarities of national thinking, therefore, the relationship between language and culture, the worldview of its speakers has been of concern to linguistic researchers over the past two centuries. Scientists, starting with Humboldt and ending with representatives of relatively young sciences, such as cognitive science, the theory of intercultural communication and cultural linguistics, addressed the issue of ethnic and cultural specifics. In recent years, there has been a particularly increased interest in disciplines that

study the national language in close connection with consciousness and knowledge, with thinking and mentality; the data of such studies are especially significant, since at present two differently directed tendencies are clearly traced - on the one hand, the gravitation towards globalization, on the other hand, the desire to preserve identity, national specifics. In this respect, the study of the concept as a mental education becomes especially relevant.

Concept is defined as a notion by which philosophy and science of the twentieth century try to explain the unit of information storage in the subconscious. This aspiration is due to the idea of penetration into the very essence of consciousness, characteristic of this time, in order to study, to overcome everything that makes it not free. This task is partly set by philosophy, cultural studies, psychology, and many branches of linguistics. Depending on the point of view, the term is filled with different content. However, all points of view can be reduced to a certain invariant: a concept is a quantum of meaning that has a culturally specific basis. Within the framework of linguistics, the concept is also defined ambiguously, depending on the scientific direction and the researcher. Within the framework of our research, we will understand the concept as “a multidimensional mental construct that reflects the process of cognizing the world, the results of human activity, its experience and knowledge about the world, storing information about it” [6, p. 43].

This study focuses on the concept of "love" in the Uzbek national consciousness in

comparison with the concept of "love" in the minds of native English speakers.

The sphere of feelings is a favorable field for research, since it is in it that the peculiarities of national consciousness are most fully expressed. And love as a basic feeling that conveys the psycho-emotional states of a person, and a concept that manifests itself in any culture, becomes a significant object for research and identification of national specifics. This is precisely the relevance of this study.

### RESULTS:

In Uzbek, 5 groups of meanings were identified: affection, disposition: heart feeling; passion for something; object of love; addiction, relationship between 2 persons.

In English, the meanings of the lexeme love can be classified as follows: affection, disposition; attachment based on sexual desire; strong infatuation; relationship between two persons; intimate relationships; subject of affection.

Let us also make a reservation that in English, the lexeme love is used figuratively when maintaining a sports score in the meaning of "zero, zero", as a formula of politeness in correspondence and in the meaning of the name of a deity. However, these points were deliberately put out of brackets, since they do not reflect those essential features of the concept that will interest us in further comparison: the first two are associated with the tradition of use, and the third is rather encyclopedic in nature.

So, after generalizing dictionary entries and classifying the elements of the semantics of the lexeme, we notice that formally the range of meanings of units coincides. However, on closer inspection, we will notice that this is not the case.

First, the meaning of "affection, disposition" in the articles of English dictionaries is split into smaller ones -

attachment to an animate and inanimate object, for example:

- A strong feeling of affection and concern toward another person, as that arising from kinship or close friendship;
- An intense emotional attachment to something, as to a pet or treasure object. (Dictionary of the English Language by Houghton Mifflin)

We will notice the same differentiation when describing the meaning of "the object of attachment": in the dictionary entries it is specified that the object can be animate and inanimate, while we do not find such a clarification in the dictionaries of the Uzbek language. Let's compare:

- A person for whom one has strong feelings of affection
- a person toward whom love is felt; the object of such liking or enthusiasm
- A person or thing that one loves
- Biror bir shaxsga yoki kishilar guruhida ,g'oyaga yoki amaliy faoliyatiga nisbatan kuchli tuygu
- Tassavvufda Allohga yetishish (Haqidaqatga erishishning asosiy vositasi)
- Another difference between the definitions lies in the sense "hobby, passion", in the English language the lexeme love is associated precisely with a strong hobby, which is reflected in each of the dictionary entries:
  - A strong predilection or enthusiasm
  - A strong predilection, enthusiasm, or liking
  - A great interest and pleasure in something

Indeed, every English speaking person will translate the phrase "I love cinema" as "I like cinema", while the saying "I love cinema" will reflect more than just passion. That is, in English, this lexeme, used in relation to an inanimate object, expresses a greater intensity of the manifestation of feelings than in Uzbek.

And now let's return to the differentiation on the basis of animate / inanimate, which was

mentioned just above. Apparently, it is connected precisely with the fact that the manifestation of love is most typical in relation to animate objects.

Paremiological analysis is another method for describing a concept. In the encyclopedic dictionary-reference book of linguistic terms, paremia is defined as “a short winged statement containing moralizing, moralizing observation or generalization. Usually paremia is a stable whole statement, a part of a well-known expression with a pronounced explicit or implicit predicativeness” [10, p. 355]. The paremias are of interest to us because they are stable, timeless, and have a generalizing character. In addition, the paremiological fund of the language reflects the mentality of the people speaking it, which is extremely important in the study of the concept.

The paremiological analysis of the English-language material gives grounds for identifying 11 logemes, among which: lack of control (and man has choice to begin love, but not to end it; love cannot be forced); unmotivated (love is without reason; affection blinds reason); time parameter (time, not the mind, puts an end to love; the heart that once truly loves never forgets); the price of love (love is not found in the market; when poverty comes in at the door, love flies out of the window); love makes men orators; love makes a wit of the fool); parental love (a mother’s love is best of all; love the babe for her that bare it); sincerity (where love is, there is faith; where there is no trust there is no love); inexpressibility (whom we love best, to them we can say least; next to love, quietness); marriage is the tomb of love (marriage is the tomb of love; Love is a fair garden and marriage a field of nettles); love for everything related to the beloved (he that loves the tree loves the branch; love me, love my dog); negative assessment of love (love is full of fear; of soup and love the first is the best).

## DISCUSSION:

In a comparative analysis of the paremiology of the studied languages, we notice that in both cases, the components of semantics associated with heart feelings (relations between the sexes) are expressed. It is this meaning that is key for national consciousness in both cases. In addition, in both Russian and English, one of the most pronounced signs of love is its uncontrollability (paremias expressing the omnipotence of love, affirming the idea that it knows no boundaries), the unmotivated choice of the object of affection (love is blind), an important feature is and the length of the feeling in time. Here we note that in the paremias of the languages studied, both the idea of the infinity of love is expressed (old love is not forgotten; old love will not be forgotten), and of its finitude (love is like glass: if it breaks, it will not grow together; one love expels another).

The rest of the logemes will show a number of differences. So, in the English paremiological fund we do not find proverbs reflecting the connection between loves and suffering, while among Uzbek proverbs in terms of quantitative expression, this logem comes to the fore. Here we meet the definition of love as grief, suffering, misery, sadness, misfortune, torment. To love, based on Uzbek proverbs, is hard, sickening, sad. A positive assessment of love is represented by 3 proverbs (out of 140 analyzed), while among English paremias, only 3 express a negative assessment of love, but they are not associated with suffering (love is full of fear; of soup and love the first is the best; love and pride stock Bedlam).

In addition, among the Uzbek -language proverbs about love, the semantic block of paremias associated with the severity of separation, which is not expressed in English paremiology, manifests itself very actively. This block is undoubtedly connected with the

previous one ("love as suffering"), but already on the example of a specific everyday situation.

At the same time, we also find specific logemes in English paremiology. These include the logem "value" or, rather, "the price of love." In English proverbs, on the one hand, it is argued that love has no price, it cannot be bought for money (love is neither bought nor sold), and on the other hand, that material wealth seriously affects love (love lasts as long as money endures). Moreover, the ratio of units is almost equal. There are six proverbs about the pricelessness of love, and five about its connection with the material side of life. This logeme in Russian paremiology contrasts with the logeme "disinterestedness", which is not expressed at all in the English paremiological fund (for a dear friend, an earring from an ear).

Numerous in its composition in English paremiology and the logem "love as a feeling that changes people", there are seven such proverbs. There are no equivalents in the Uzbek paremiological fund.

## CONCLUSION:

Based on the above features of the paremiology of the English and Uzbek languages, as well as lexicographic data, the following conclusions can be drawn regarding the concept of love in the linguistic picture of the world of native speakers of English and Uzbek:

The concept of love in the minds of English and Uzbek speakers reveals a number of similarities. First of all, love is associated with interpersonal relationships. Love cannot be subordinated to someone else's will, it is beyond the control of a person. The choice of the object of attachment is not motivated. Love in relation to time is considered contradictory: on the one hand, it is infinite, on the other hand, it tends to pass.

The concept of love as seen by native English speakers is associated with a number of

specific features. Thus, the feeling of love is most typical in relation to an animate object, while love for an inanimate object is thought of as a feeling of a greater degree of intensity than in the Uzbek language.

Love, from the point of view of native English speakers, cannot be bought, but at the same time, it depends on a material indicator: poverty can cause a break in love relationships. Another reason for the "death" of love can be marriage.

The English concept of love reflects the influence of this feeling on a person. Love can change people, make them better, more eloquent, but at the same time it cannot be expressed in words. In addition, love is a sincere feeling based on honesty and trust. The highest manifestation of this feeling is kindred love.

In the Russian national consciousness, love is of a more universal character: attachment can be felt both to an animate and to an inanimate object, and although the nature of the feeling will differ, its intensity will not depend on the object to which it is directed.

The choice of an object of love from the perspective of a native speaker of the Russian language may be associated with external or internal similarities with it. The object of love is unique, singular, no one can replace it. The meeting with him is predetermined by fate itself.

In the Uzbek language, a sign of spontaneity, spontaneity of the emergence of love is expressed.

A distinctive feature of the Uzbek concept is the expressiveness of the semantic block associated with beatings. Beatings are thought of by native Uzbek speakers as one of the ways to express love.

Thus, despite the fact that love is a basic feeling, and this concept manifests itself in one way or another in any culture, one cannot talk about the identity of the concept "love" in the

Uzbek national consciousness and in the national consciousness of English speakers.

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## UPDATING VIEWS ON LITERARY HEROES AND GLORY IN THE NOVELS OF THE PERIOD OF INDEPENDENCE

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### ABSTRACT:

The article examines the renewal of views on literary heroism and majesty in historical novels of the period of independence by observing the artistic depiction of the image of the sheikhs in Sadulla Siyayev's novel-dilogy "Akhmad Yassavi".

**KEYWORDS:** novel-dilogy, space and time, toponym, manokib, environment, worldview, mysticism, sect, character, reality of life, poetic perception, interpretation, conflict, aesthetic influence, majesty.

### INTRODUCTION:

Alisher Navoi in Nasayim ul-muhabbat: Khoja Ahmad Yassavi is the sheikh of Turkestan. His body is high and famous, his karma is mutawali and unmistakable melting. Muridu's companions are immense and endlessly melting on the threshold of the will and sincerity of the king ... His grave is in Turkestan, in a place called Yassi ... It is the qibla prayer of the people of Turkestan. In fact, the city of Yassi was revered by the people of Dashti Kipchak and Movarounnahr as a sacred place, and the city was popularly named after Ahmad Yassavi, Hazrat, Turkestan, Turkistan ota. Turkestan, the sacred place where Ahmad Yassavi was born, grew up and lived forever, has long had not only geographical and ethnogeographic concepts, but also political and legal significance. According to Arab geographers, Yassi was replaced by Shavgar (Shovajar) in the 4th and 10th centuries. The

name Yassi can also be found in historical sources of the XI-XII centuries. According to the historian Nizamiddin Shami's Zafarnoma, Sahibkiran Amir Temur crossed the Yassi region and pass when he marched on Mongolia in the early spring of 1376. Sheikh Ahmad Yassavi circumambulated his grave and ordered a mausoleum to be built over his grave. The mausoleum was completed in two years. When Sahibkiran marched on China (November 1404), he spent the winter in Yassi and Sabron, the left wing of the army under the command of Sultan Hussein. Mahmud ibn Wali (17th century) wrote in Bahr ul-Asrar (Sea of Secrets): Modern Turkestan is the city of Saksi, and the common people call it Yassi. From the end of the 17th century to the 18th century, the name Yassi does not appear in sources. Toponym Turkestan has retained little political and legal meaning even after the Arab conquest. Its political boundaries stretch far and wide. It spread to the north and east to the lands bordering the Arab Caliphate, the Qarluq and the Uyghur Khanates. These countries are mentioned in the works of Arab historians and geographers of the VIII-X centuries under the name of Turkestan. The central and southern regions of Central Asia (between the Amudarya and the Syrdarya) came to be known as Movarounnahr.

After the establishment of the Karakhanid state, the toponymy of Turkestan increased in importance and was restored within the former territories of the region. Its southern borders are marked by the Amudarya. Part of it: (Karakhanids, Khorezmshahs, Chigatays, Timurids, Shaibani state) began to

be considered as Movarounnahr. Mahmud ibn Wali writes: "Turkestan is a vast and voluntary country, the length of which ranged from the banks of the Sayhun River to the banks of the Karamurun River, and was called Mogulistan." The author writes that another name of Turkestan is Turan and its inhabitants are Turks. During this period, Mongolia covered East Turkestan, the Seventies, and the Altai.

In the mid-19th century, Turkestan was bordered by the foothills of the Ural Mountains and the Caspian Sea to the west, the Altai Mountains and China to the east, Iran and Afghanistan to the south, and the Tomsk and Tobolsk provinces to the north. Turkestan is conventionally divided into Western (southern part of Kazakhstan, Uzbekistan, Tajikistan, Turkmenistan), Eastern (Xinjiang Uyghur Autonomous Region) and Afghan Turkestan (northern part of Afghanistan). In 1867, the Governor-General of Turkestan was established in the territory of West Turkestan occupied by the Russian Empire. From 1886 it was officially called Turkestan.

After the October Revolution, in April 1918, the TurkASSR was formed in the territory of West Turkestan. Fearing the emergence of the idea of restoring a single and independent Turkestan, the Soviet government in 1924-1925 hastily held an event "National state demarcation of the peoples of Turkestan." As a result, the politically significant term "Turkistan" was artificially obsolete and was officially replaced by the geographical term "Central Asia."

Not only the distant and recent history of the great place of culture, literature and art, but also the exemplary life of the clergy, such as Khoja Ahmad Yassavi, who led his spiritual life, the secrets of the leech path, human consciousness, the world of the soul and the spiritual world. sharia was also separated from the people during the soviet regime. The Shora ideologues, who chanted imaginary beliefs, also

interfered in the ancient religious sentiments of the nations. They were well aware that a sense of unity could unite thousands of people around a single Islamic faith and mobilize them for practical action. But they did not realize that the possessions and cherished memories of mankind could never interfere with the relationship between God and man, the love of man for his Creator. During the years of independence, both our sacred religion and the heritage of the saints were returned to our people. Of course, in this article we are absolutely far from the idea of describing the complex and arduous processes associated with the organization of the life, mystical and literary heritage of Hoja Ahmad Yassavi. This is not even the purpose of the article. However, the changes and innovations that took place in our socio-economic and spiritual life during the years of independence did not exclude fiction, or more precisely, this factor allowed us to open a new field in our prose.

Writer Sadulla Siyoyev, following the traces of distant history, tried to embody the image of the piri Turkestan in his novel-dilogy "Ahmad Yassavi". The work consists of two books in terms of structure:

1. Punishment of the Oath (pp. 3-264).
2. Homeland winds (pp. 265-330).

The author's commentary (pp. 331-333) attached to the book states that this work was the result of twenty years of creative research as a result of the author's independence, his duty as a child, and his appeal to our sources of knowledge and spiritual power. Born in Karnak, one of the Yassavi villages near Turkestan, the writer grew up listening to the wisdom of Ahmad Yassavi, a popular intellectual such as Parpi Mullah. Remembering that he received help from the spirit of Yassavi: Every time I go to Turkestan, I definitely visit Hazrat Turbat. I sit for a long time by the moon near the blessed tombs. I'm a conversational kid. I try to imagine the images of him. I ask for help from the head

of the saints. " Along with wisdom, Siyoev's Devoni, examples of folklore, works of Alisher Navoi, Fakhriddin Ali Safi, Rozbekhon, Yevgeny Bertels, Muhammad Fuod Kuprilizoda, encyclopedias, encyclopedic dictionaries, mystical scholars N.Kamilov, I.Haqqul . Also, with the encouragement of Askad Mukhtor, the life story of a man who was burnt to death in the grief of the nation was able to portray the image of the wise old man as objectively as possible.

The events of the first book of the novel-dilogy begin with the news that the Sheikh has chosen to visit the Kaaba and end with his departure from Merv to Turkestan. The second book begins with the return of the sheikh's caravan to his father's place, and ends with his entering the chilla when he reached the age of sixty-three (the age of the Prophet). Hence, the novel sheds light on Yassavi's sixty-two and sixty-three-year life span.

It is known that the name of Ahmad Yassavi, the sultan of the Arifs, the sheikh-ul-mashayikh, the piri komil, stands out among our great people who achieved the status of irshad and dawat in the 12th century. Indeed, in the Qur'an, it is said about those who believe in God, who fear Him, and who have the honor of being friends with the guardian of God, who lives a life of honesty and integrity. "They have good news in this world and in the Hereafter. There is no changing the words of Allah. That is the great attainment. "Also in the Qur'an: Surely the most pious of you is the most pious. it is emphasized. About the fact that the most pious people can only be scholars: There is no doubt that among the servants only the scholars fear Allah! is described as.

Following the example and instructions, S. Siyoev does't describe Ahmad Yassavi in the novel only as a sheikh who lived in the room of the Sultanate Mosque, surrounded by caliphs and murids. Maybe take a look at his family life as well. In particular, the image of Ruqiya Bibi,

the youngest daughter of Musa Sheikh, a twenty-year-old honest spouse, is a wise, intelligent, faithful, loyal, obedient, patient woman; also opens as a loving mother of two daughters and a son.

In certain periods, the Qur'an: myths and legends from the past; the Prophet Muhammad (S.A.W.): There were also those who called him one of the madmen. There were also great scholars in the Ahl as-Sunnah and in the congregation, even those who opposed the sheikhs and governors, those who did not acknowledge them, those who embraced them, and those who did not agree with their views. This is essentially due to the following reasons: a) impurity of the gene is impurity; b) treason; c) bigotry and bigotry; g) envy and hatred; c) In addition to immutable judgments, there are also judgments that vary according to places, times and individuals. That is, there is a scientific debate between the opposing parties that is difficult to reconcile. Consequently, since man was created, they have been opposed to each other according to their psychogenetic nature, naturalness, environment, worldview, level of potential, or incompetence.

In the novel, Sadulla Siyoyev draws attention to this aspect of the problem and seeks to express the image of Ahmad Yassavi, known as a mystical scholar in his homeland and around the world, with all his majesty and a small amount of merits. Shahobiddin Haji and Ashraf Khan Qazi managed to ensure the tension of the conflict and increase the aesthetic impact by showing the image of jealous, sworn and hypocritical people in a comparative plan. The reward objectively showed that the slave was perfectly set according to his deeds. In other words, through the living images of other hypocrites with their tongues and tongues, Allah was able to infuse into the novel the idea that He looked at the heart and deeds, not the image of the slave. He strongly condemned such vices as oppression,

corruption, arrogance, betrayal, ignorance and jealousy.

This is because Imam al-Nasawi, may God have mercy on him, quoted the great jurist, 'Abdullah ibn' Abbas, as saying: "Whoever harms a jurist harms the Messenger of Allaah (peace and blessings of Allaah be upon him). Whoever harms the Messenger of Allaah (peace and blessings of Allaah be upon him) has harmed Allaah. " In Sahih al-Bukhari, he spoke about the consequences of harming Allah: "Whoever is hostile to my guardian friend, I will declare war on him. The hadith is quoted. Based on such instructions, it becomes clear that the writer has an objective approach to the essence of the character.

In the novel, the author seeks to reveal Kul Khoja Ahmad Yassavi as a preacher of the Burr language, as well as a humble, melancholy, humble man. The novel: ... until the letter of the body reaches the body, let the seeds of goodness germinate. What evil have you gained from good, that you do not want to do good, what good have you found in evil that you will never do evil? By the forgiveness of Allah, wisdom came:

Kul khoja Ahmad, you are the worst of the bad,

All the wheat, all the straw you have ... such places are characteristic in that they show that the work is adorned with the wisdom of Yassavi and their essence.

In the first book of the dilogy, Yassavi describes how he became a negative being when he was alone. In another place, it is shown that he saved the poor from the plague with the power of the unseen and achieved the reward of Hajj.

In our opinion, S.Siyoyev was closely acquainted with the views of the sheikhs and governors at the time of writing the novel. For example, Imam Abu Bakr ibn Furak wrote: It is obligatory for the saints to conceal their prophecies, unlike the prophets, while Abu

Bakr al-Ashari states: The prophecy belongs to both the prophet and the guardian. In the work of Saduddin Taftazani Sharh al-Aqeed an-Nasafiya, the predictions of the sheikhs are true. It is emphasized that such a prophecy is known in such things as covering long distances in a short time, the appearance of food, drink and clothing when needed, walking on water, flying in the air, talking to inanimate and dumb things, and reducing the calamities that come.

Hence, the novel does not portray the prophetic nature observed in the person of Ahmad Yassavi as contrary to the reality of life. Of course, at first glance, the occurrence of events seems inconceivable to the worldly mind. However, in essence, they do not contradict the rules of Sharia. The author used the prophecies that occur in an unusual way to reveal Yassavi more deeply, to understand the doctrinal issues correctly, to interpret them convincingly, to prevent various conspiracies and contradictions of the scholar by acting on evidence, as well as to refute the superstitious beliefs of some destructive groups. Indeed, he relied on the Qur'an, the Hadith and the wisdom of Yassavi. For example, Abdurauf, who left his five children, his wife and his mother-in-law and went on a pilgrimage voluntarily, refrained from going astray.

In short, the Uzbek historical novel seeks spirituality from the free, pluralistic thinking of the independence period and tries to present the image of the sheikhs and governors objectively. In particular, in our national novel, it is poetically expressed that God is omnipotent, and that it is only in His will to grant the status of a prophet, messenger or guardian to whomever He wills. The fact that it is natural for God to reward his few friends with miracles or prophecies is no longer viewed with suspicion, as in the literary policy of the council. These cases are perceived as the separation of the male servants of Allah in some matters from others and are shifted to

artistic expression. The above-mentioned qualities observed in the historical novels of the period of independence indicate that our views on literary heroism and greatness have been renewed and that the minority is returning to the ancient Eastern verses.

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# THE EFFECTIVENESS OF FLIPPED CLASSROOM IN HIGHER EDUCATION: OPPORTUNITIES AND PROBLEMS OF IMPLEMENTATION

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## ABSTRACT:

**This article presents the main characteristics of flipped learning, analyzes various possibilities of its application in the conditions of Uzbekistan, as well as its advantages and disadvantages.**

**KEYWORDS: Teacher, student, learning, flipped classroom, inverted classroom, flipped learning, quality assurance, critical thinking, creativity, higher education.**

## INTRODUCTION:

Modern society is characterized by the virtualization of life and social communications. Information and communication technologies (ICT) are actively used in economics, management, medicine, culture, they have penetrated deeply into our daily life and have already changed our behavior, ways of communication, our approaches to work, rest, our way of life. The inevitable introduction of digital technologies into the educational process requires a revision of the existing pedagogical paradigm, based on the narrative nature of knowledge transfer. Given the impressive number of information available to students through the Internet, it is obvious that the teacher is no longer the only source of knowledge. To improve the quality of education, it is necessary to introduce new approaches to teaching, more adapted to the needs of today's students.

In addition, innovation is a key factor in the development of modern society. To meet the challenges of the future, it is necessary to prepare students for professions that do not

yet exist, for technologies that have not yet been invented, for solving problems that cannot imagine. In the context of constant economic and social changes, it is very important to teach students to study independently, update their knowledge throughout their lives, and constantly improve their qualifications. In this regard, the teacher is faced with the difficult task of choosing the methods and forms of organizing educational activities, the implementation of which in the specific conditions of an educational institution will give a high level of quality in training students.

Recently, the so-called hybrid or blended learning has become widespread abroad, which consists in the active use of elements of distance learning, electronic educational resources, collaborative platforms, digital technologies and the Internet. One of the latest trends in foreign pedagogy in developed countries, in particular in France, is the "inverted classroom" technology, which is one of the forms of blended learning. The flipped classroom is a new approach to teaching organization in which classroom oriented learning, this method is more flexible and provides greater involvement of students in the educational process, allows you to form a dynamic and creative environment in which students learn to think critically and work together to work out the assigned tasks [1, p.38].

The term "flipped classroom" is a literal translation of the English term "flipped classroom" or "inverted classroom". A distinctive feature of the inverted class is the

complete or partial transfer of the process of transferring knowledge to independent study. At the same time, the freed classroom time is used for interactive activities that develop critical thinking and creativity. The English definition of an upside-down classroom ("reading at home, and homework in the classroom"), according to many French educators, is too simplistic. M. Lebrun, one of the authors of the book "Inverted Pedagogy", writes that inverted teaching is not essentially a new method, but rather a new way of thinking, the purpose of which is to optimize classroom work with students through extracurricular activities aimed at in-depth study of the subject. [2]. At the same time, the teacher's task is to motivate students to independently search for knowledge outside the classroom, teach not only to search for information, but also to check its reliability, analyze, critically reflect, and then in the classroom to achieve an active intellectual reaction to the educational material, which is a prerequisite for mastering new knowledge.

E. Mazur, a physics teacher at Harvard University in the USA, gave the students material of lectures in advance so that they would come to the class prepared, at least to become familiar with new concepts and terminology. At the beginning of the lesson, Mazur conducted a small survey, the results of which were a signal for the teacher, how much the teaching material was mastered, what issues should be paid special attention, then in mini-groups an in-depth study of the material and problem solving took place. Unlike traditional physics lectures, Mazur did not show how to solve similar problems, encouraging students to think about and apply general principles and theories in different situations. Interim and final tests, conducted by Mazur, demonstrated a higher level of mastering the educational material in

comparison with the traditional teaching method [3].

The term "flipped classroom" was first used in 2007, when two high school chemistry teachers in the United States, D. Bergman and A. Sams, began to distribute to their students not printed materials, but video lessons, which could be used to study new educational material at home. The school where Bergman and Sams worked was in the countryside; pupils often missed classes. To save their time and not have additional lessons with the absent, teachers came up with the idea to record their lessons on video. Thus, students who missed the lesson could watch the video of this lesson at home at a convenient time for them. Students enthusiastically embraced the proposed approach to self-study of the material in the class. Moreover, those who attended the class began to review the video lessons, especially during the preparation for the exams. According to Bergman and Sams, as a result of the experiment, the number of unsuccessful students significantly decreased [4]. The success of the video tutorials served as an impetus for further development and experimental testing of this idea in terms of finding ways of optimal delivery of educational content.

This method became a small "revolution" in relation to traditional education and the possibility of professional development and self-improvement for progressive teachers who, without neglecting the process of transferring knowledge, focused their efforts on student-centered learning and the development of students' competencies. Currently, there are several forms of inverted learning [2]. The classical model of flipped learning involves preliminary acquaintance of the student with the theoretical material of the upcoming lesson. Materials for preparation can be given both in the form of a basic lecture

notes or a paragraph of a textbook, and in the form of slides, video and audio documents. In the classroom, the teacher organizes a discussion of the material studied, explains difficult points, answers questions, and uses interactive teaching methods. It should be noted that despite the fact that training is partially carried out remotely, this model continues to resemble the traditional education system and is of a translational nature: first, theories, concepts and models are studied, and then their practical application.

The next model of inverted learning, conventionally called "advanced", also provides for two stages - extracurricular and classroom and involves a gradual complication of the level of tasks and expansion of activities. During preliminary preparation, students independently search for information on a given topic, read articles, watch videos, in mini-groups or individually prepare theses that they will present to the audience, questions for a debate or a round table. They post the results of the work on a joint electronic platform so that the teacher and other students have the opportunity to familiarize themselves with them in advance and better prepare for the lesson. Thus, the monitoring of the independent work of each student is carried out. In the audience, a presentation of prepared abstracts, a discussion of the read material, a reasoned analysis of the work of each group, the creation of a general conceptual picture based on opinions, comments, opinions expressed, or a mini-colloquium in which one group makes a presentation, and the other organizes debates are carried out.

Finally, the systemic or combined model of the inverted class involves, as its name suggests, a combination of the first two models. The essence of this model is not to change the place where a certain type of activity is performed, but to rearrange the key components of the

educational process. The traditional sequence is changing the competencies involved (memorization, understanding, application, analysis, synthesis, evaluation). Practical application is studied first theory or model and only then its theoretical justification. In the context of increasing practice-orientation educational process, this model of inverted learning is a pedagogical approach that is closest to reality, since in everyday and professional life. Flipped classroom technology significantly changes the traditional assessment process based on the reproduction of knowledge and its application in a well-defined academic setting. Different models of the inverted classroom allow using a wider arsenal of forms of control of students' knowledge, depending on the tasks facing the students. If the information was not provided by the teacher, but the students themselves had to find it, the approaches used to search for information are evaluated, as well as the quality of the information itself. If the student had a task communicate the information to the group and organize a discussion, the quality of communication within the group is assessed, the contribution of each to collective knowledge, the effectiveness of mutual learning. Peer assessment and self-esteem are also essential.

In addition, large-scale additional work for teachers is a serious obstacle to the introduction of flipped classroom technology in Russian universities. To prepare high-quality materials for the extracurricular work of students, the teacher must not only process a significant amount of information, but also arrange everything beautifully and efficiently. Often teachers do not have sufficient knowledge in the field of information technology application. If this work is not additionally supported by management, few teachers will agree to drastically change their



style of work. This requires technical and administrative support, which is very time-consuming and costly. Technical equipment is also a problem. Inverted teaching requires appropriate technical equipment of all classrooms, as well as the personal information space of the teacher and students, constant access to the Internet, but even in this case, no one is immune from "failures" in the operation of technology.

Despite the above problems that complicate the implementation of inverted education in Uzbekistan universities, this technology, according to foreign and domestic researchers, has many advantages over the traditional education system.

Proceeding from the fact that the quality of education is determined, first of all, by the quality of the bearer of knowledge, teacher, lecturer, inverted learning is an effective method of quality improvement, motivating teachers to professional development, improving working methods, expanding strategies, introducing new educational technologies. The advantage of the method lies in its flexibility, in the ability of each teacher to use in each specific situation the option that best suits his goals. This is an opportunity to get rid of the traditional dubbing of lecture texts and use classroom lessons for creativity, discussion of practical problems, and the results of joint projects. The use of active forms of work in classroom time contributes to the development of emotional relationships between all participants in the study. We consider it necessary to emphasize that the introduction of the inverted classroom technology into the educational process will complicate the work of teachers, require mastering new pedagogical techniques, studying the specifics of the specialty of future graduates, preparing new materials, creating

multimedia content; but this work will pay off by improving the quality of student training.

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## METHODOLOGY OF CHEMISTRY

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### ABSTRACT:

**This article is about the fact that the methodology of teaching chemistry is a scientific and educational science, the methodology of teaching chemistry is closely related to the science of pedagogy and its educational function is based on the laws of pedagogy.**

**KEYWORDS: Electrochemical, physiology, pedagogy, theoretical.**

### INTRODUCTION:

It is known that the subject "Methods of teaching chemistry" teaches methods and technologies for mastering the basics of chemistry. Along with the educational issues of teaching any subject, there are also educational issues that are important in the development of society. Positive forms of education can also be successfully instilled in the minds of students in the teaching of chemistry. In addition, the comprehensive development of students' knowledge in the process of teaching the basics of chemistry is the foundation of science.

According to the historical development of the subject "Methods of teaching chemistry" is a subject that teaches the methods of teaching chemistry in secondary schools. During the years of independence, extensive work has been done to reform education. The main theoretical issues of chemistry, formed during several years of teaching at the school, the development of natural chemical resources of the republic and their products, the contribution of oriental thinkers to the development of chemistry, preserving the content of elemental chemistry and organic chemistry. , supplemented textbooks for

chemists were created by chemists. For this reason, there was a problem of creating a textbook "Methods of teaching IGmyo", which is unique for the teaching of chemistry in schools, academic lyceums and professional colleges with continuous stages of education.

That the methodology of teaching chemistry is a scientific and educational science. Its integral connection with other sciences in the implementation of important discoveries, the methodology of work is important in the rapid solution of the problem posed to science. Scientific research done in the right way has led to great discoveries by the scientist. For example, the invention of the spectral analysis method led to the discovery of many elements in nature. The development of electrochemical testing methods has made it possible to quickly solve important problems in science and industry. Accordingly, the rapid mastery of the basics of chemistry by students depends on the method of teaching. Methodist scholars have developed various methods to increase the effectiveness of lessons in science teaching. They are used in the process of teaching chemistry.

The subject "Methods of teaching chemistry" teaches to master the basics of chemistry. Unlike science, which provides ready-made knowledge, science also serves as a scientific science, because new teaching methods are created in the process of pedagogical work. Improving the methods of teaching and learning by applying advanced educational technologies in the teaching process is also a scientific and methodological work. Teaching methods develop as the teacher works. Therefore, learning from the teaching

experience of your advanced teacher is one of the important factors in improving the teaching process. Each new teaching method created by scientists is put into pedagogical practice at different stages of education. Effective methods are applied to the teaching process nowadays, the process of teaching chemistry is innovative.

The methodology of teaching chemistry is closely related to pedagogy. Because its educational function is based on the laws of pedagogy. Its methodological basis is the idea of national independence.

The object of influence of the methodology of chemistry is students of all ages of different ages, with different levels of character and different interests. Chemistry lessons written for school should be based on the age characteristics and level of knowledge of the students. Physiology and psychology study the age-related characteristics of students. Processes of teaching and educating students

In order to solve their problems, future science teachers need to be well versed in the sciences of youth physiology and psychology. Due to the introduction of modern technologies in the teaching of chemistry, there is a function of computer science, ie the acquisition of computer-assisted teaching methods. Similarly, every teacher is a pedagogue. Mathematical results of experiments. Must be fully aware of the basics of the mathematical sciences in order to know the issues of analysis.

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## CHANGE MANAGEMENT IN UZBEK COMPANIES

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### ABSTRACT:

**Change management (sometimes abbreviated as CM) is a collective term for all approaches to prepare, support, and help individuals, teams, and organizations in making organizational change.**

**Keywords: Change management, processes, crisis, customer, Communist Party, self-government, corruption.**

### INTRODUCTION:

Drivers of change may include the ongoing evolution of technology, internal reviews of processes, crisis response, customer demand changes, competitive pressure, acquisitions and mergers, and organizational restructuring. It includes methods that redirect or redefine the use of resources, business process, budget allocations, or other modes of operation that significantly change a company or organization. But beyond these are a third and more credible group, who applaud the new directions and wish them all success, but perceive them not as a revolutionary break with the past but as the logical next steps after what came before, and the culmination of Uzbekistan's post-independence development. It cannot be denied that the differences between Uzbekistan's two post-independence leaders are striking. Mr. Karimov, who was 53 when he was named Uzbekistan's first president, had spent two decades working for the State Planning Committee of the USSR, known as "Gosplan," the powerful agency that was responsible for developing detailed plans for every sector of the state-controlled economy. Gosplan prepared the overall plan but it fell to others, mainly the regional First Secretaries of the Communist Party and managers of the great

industrial and agricultural enterprises, to make sure they were faithfully implemented. Karimov then served as First Secretary of the Central Committee of the Communist Party of Uzbekistan. In this capacity one of his main concerns was to manage the republic's always-complicated relations with Moscow, where most decision-making in the USSR was concentrated. In addressing this important issue, Karimov inevitably drew on his republic's prior experience in dealing with the imperial center. The Seeds of Sovereignty, 1959-1991 In the decades since the death of Stalin in 1953, Moscow had been intent on extracting the maximum volume of cotton, minerals, and vegetable produce from Uzbekistan. It also called for certain manufactured goods, including key parts for airplanes. It placed similar demands on the other republics of Central Asia, including wheat from Kazakhstan, meat and electronics from Kyrgyzstan, etc. Under the powerful leadership of Sharof Rashidov (1959 -1983), Uzbekistan managed to meet these demands, while at the same time working out a practical modus vivendi Moscow that allowed a high degree of local autonomy. Along with neighboring republics of Central Asia, Uzbekistan thus carved out and maintained a significant sphere of self-government, even as it remained under Soviet rule. To be sure, some of the practices by which Rashidov and his regional counterparts achieved this were considered illegal under Soviet law, but they brought undeniable benefits to Uzbekistan and all Central Asia. This system lasted until Mikhail Gorbachev, in an effort to reintroduce strict centralization, accused Uzbekistan of gross corruption, especially in the cotton sector. But by then Rashidov was dead

and the USSR itself was tottering on the brink of collapse. Western and Russian pundits have often argued that President Karimov was in fact a holdover ruler from the Soviet era, in other words, that he owed his position to Communist Party leadership in Moscow. But his appointment to the role of First Secretary of Uzbekistan's Communist Party occurred only after Gorbachev had twice failed to appoint someone who was acceptable to the Uzbeks. It was fellow Uzbeks who advanced his promotion and it was Uzbeks who then confirmed him by election as the country's first president in 1991. In short, Karimov's rise was intimately a part of the move towards sovereignty and self-government that had started in late Soviet times. However, like other post-Soviet leaders in Central Asia, Karimov knew the Soviet system from the inside and harbored no illusions about its actual workings. Like them, too, he was accustomed to functioning in a "top-down" world. He observed how small changes in the economy or government could have immense and unanticipated consequences. This focused his attention on the intricacies of policy making and inclined him to leave details of practical implementation to others. Protecting Sovereignty, At All Cost: 1992-2003 Following the collapse of the USSR in 1991, Uzbekistan was assaulted by pressures from every side. Observing this situation from the inside, President Karimov was acutely aware of the fragility of his new country. He therefore committed himself above all to preserving and strengthening the sovereignty of a newly independent Uzbekistan. This was his main strategic goal, which he pursued with impressive focus. Karimov knew that the collapse of the USSR had unleashed expectations among the Uzbek public that would be difficult, if not impossible, to satisfy. He listened patiently as international financial institutions and western governments pressed him to undertake what they called "shock

therapy," a rapid-fire privatization of state assets and plunge into the bewildering world of market economics. Others counselled him to seek to maintain or rebuild the old economic ties with Russia and slip back under the Moscow's umbrella. This advice came just as Russia was forming a web of new institutions designed to embrace the former Soviet Union, including a military alliance (subsequently created as the Collective Security Treaty Organization), which Moscow pushed Uzbekistan to join. Then, too, President Karimov had to face fringe domestic groups that dreamed of turning Uzbekistan into some new kind of Islamic theocracy. When these radical Islamists beheaded the local chief of police in the city of Namangan and took over the city hall, Karimov rushed to the site and faced down the insurgents. He prevailed that time, as discussed elsewhere in this volume, but he knew that there could be other extremists like those he confronted at Namangan. Faced with such formidable pressures, President Karimov concentrated on harboring the existing strengths of Uzbekistan's economy and society and making sure that they were not eroded by ill-conceived or reckless reforms. Rather than embrace any of the nostrums that others dangled before him, he instead chose his projects solely on the basis of how much they would protect and strengthen sovereignty. He was also quite prepared to brush off domestic or foreign criticism. Thus, Uzbekistan's early strategy was thoroughly defensive in character.

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## RESEARCH OF SOUND PROCESSING METHODS IN DIRECTIONAL MICROPHONE ARRAYS

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### ABSTRACT:

The article is devoted to the study of sound processing methods in directional microphone arrays, one of the main stages of research work on solving the problem of creating directional microphone systems for remote reception of sound information. Based on the results of the study, it is planned to use modeling and an algorithm for processing sound in oriented microphone grids, as well as in the development of a layout of an oriented microphone grid.

**KEYWORDS:** directional microphone, directional microphone array, spatial correlation scale, the coherent field, the isotropic field, the diffusion field, delay and addition algorithm.

### INTRODUCTION:

In today's era of information globalization, the role of information technology in our daily life is growing. In particular, the processing of audio signals has become a daily necessity. The field of voice processing underlies many areas, such as remote speech detection (for example, in devices with voice control), remote identification of the owner of the voice, remote audio retrieval.

Various acoustic devices are used in the sound processing. One of the main elements of acoustic devices is a simple omnidirectional microphone. The development of acoustic

technologies has led to the emergence of special devices designed to receive sound data from distant sources - Directional microphones. Directional microphones can be used to remotely distinguish a useful sound signal coming in a specific direction from interference and noise in space.

The article is devoted to the study of sound processing methods in directional microphone arrays, one of the main stages of research work on solving the problem of creating directional microphone systems for remote reception of sound information.

### MATERIALS

The noise suppression efficiency of microphone grilles depends on the acoustic state (acoustic area of the noise).

There are three types of microphone grilles: coherent, isotropic and diffuse acoustic fields. These fields are characterized by the degree of spatial correlation of the noise. The measure of spatial correlation is a coherence function and it satisfies the condition  $0 \leq |G_{ij}(f)| \leq 1$ . The coherence function is defined by the following formula:

$$G_{ij}(f) = S_{ij}(f) / (S_{ii}(f) \times S_{jj}(f))^{1/2} \quad (1)$$

where  $i$ - and  $j$ - are points in space,  $S_{ij}(f)$  is the spectral density of the signals, and  $f$  is the frequency of the signals [5].

Shown below is how microphone arrays work in different acoustic fields.

The coherent field is created by a source located at a point in space in free space or in a

room with a small level of reverberation. In this field, the sound signal coming from the source, without echo, reaches the microphones in the desired direction. In this case  $|G_{ij}(f)|^2 \approx 1$  accepts an oblique microphone. Under such conditions, the signals coming from the noise sources that differ from the selected direction in the microphone grills are in different phases, so they attenuate each other when added. The efficiency of suppression of coherent interference of microphone grids in a coherent field is determined by the form of a directional diagram [5].

The isotropic (noncoherent) field is generated by scattered noncoherent noise sources and is manifested in the form of independent signals for different microphones. In this case  $|G_{ij}(f)|^2 \approx 1$  accepts an oblique microphone. The isotropic field is also called spatial white noise. This acoustic field is rare in real conditions [5].

Because the noise in different microphones in the noncoherent isotropic field is not coherent, microphone grills lose their orientation relative to the noise. In this case, due to the addition of signals in unrelated microphones, the noise power at the output of the MICROPHONE GRILLS is reduced, and the selected signal strength is maintained at its original state. MICROPHONE GRILLS attenuate noise and increase the signal / noise ratio to a  $10\log_{10}(M)$  obliquely oriented microphone. Where M is the number of microphones in the microphone grilles [5].

Table 1 below shows the degree of noise suppression depending on the number of microphones.

Table 1. Noise suppression depending on the number of microphones.

<b>M</b>	10	20	40	80	160	320
<b>NR, dB</b>	10	13	16	19	22	25

For example, MICROPHONE BARS consisting of 320 elements increase the signal / noise ratio up to 25 dB compared to a single microphone and allow to receive audio data from a distance of 150-200 m. To double the range of sound in a non-coherent area, you need to increase the number of microphones by 4 times. A 4-fold increase in the number of microphones results in a 2-fold increase in the linear size of MICROPHONE GRILLS [5].

A diffusion field is an area formed by coherent sources that are prone to reverberation. In this case, the distance between the microphone grids and the source will be much larger than the reverberation radius. Under diffusion field conditions, the noise reaches the MICROPHONE GRILLS from all directions while partially maintaining the coherence property. The coherence function in this field is calculated as follows [5]:

$$G_{ij}(f) = \sin(2\pi f d_{ij} / c) \quad (2)$$

The diffusion field is a noncoherent field in the high frequency range, i.e. when the wavelength is smaller than the distance between the microphones. In the low frequency range, the signals in all microphones are coherent when the wavelength is close to the linear dimension of the MICROPHONE GRILLS. Under these conditions, noises in different directions may also be present in the useful signal structure due to the fact that noises in different directions are received through the side leaves and the main leaf at the output of the microphone grilles. To narrow the directional diagram by 2 times, you need to increase the line size of the microphone grilles by 2 times. In the high frequency range, only the signals of neighboring microphones are coherent, in all other cases the condition of noncoherent diffusion field is fulfilled. In the high frequency range, the efficiency of the device increases as the linear size of the microphones and the number of microphones increase [5].



In the process of isolating the sound source signal in the selected direction through the microphone grilles, it is necessary to consider how far away it is. There are two concepts in this regard [6]:

- Distant Source;
- A Close Source.

An audio signal is viewed as a plane wave at a great distance, and as a spherical wave at a short distance.

The calculation of the delays of oriented microphones between the elements of the microphone grille system was carried out when the sound wave propagated in the right direction (Figure 1).

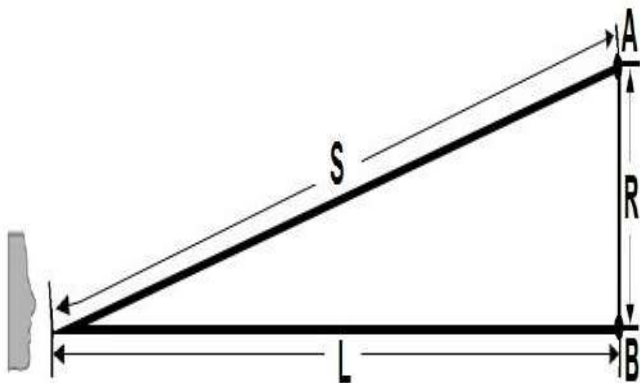


Figure 1. Scheme for determining the delay time in the microphone system.

If the audio signal travels in the correct direction along paths S and L, the difference between the arrival times at points A and B is expressed by the following formula:

$$\tau = (\sqrt{L^2 + R^2} - L) / c \quad (3)$$

where L is the distance between the microphone grille system and the sound source standing on it, R is the distance between the center of the microphone grille system and its outermost element, and c is the speed of sound in the environment.

Figure 2 (3) shows a graph of the time dependence of the delay time when the distance between the center of the microphone grille and its outermost element is R = 0.5 m, based on formula (3).

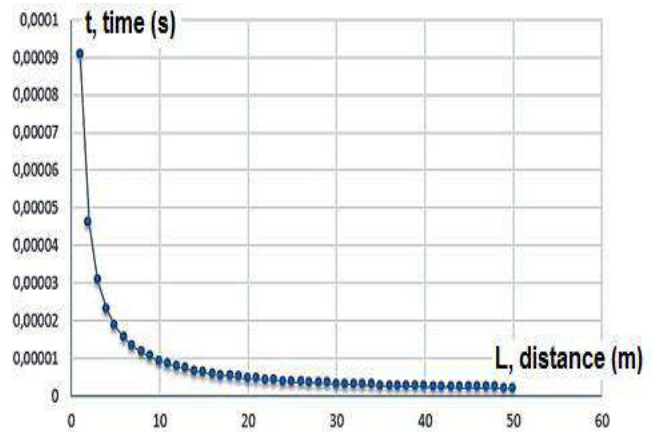


Figure 2. The delay time between microphones depends on the distance.

As can be seen from Figure 2, the delay time at a distance of 10 m is 10 μs. As the distance increases, this distorted microphone gets even smaller. Therefore, this oblique microphone can be neglected over long distances.

A remotely oriented microphone, which determines whether a sound source is far or near, must meet the following condition [6]:

$$L > (2 \times D^2) / \lambda \quad (4)$$

where D is the linear size of the microphone grid, λ is the sound wavelength.

For example, for linear microphone arrays with a linear size of 35 cm at a frequency of 5 kHz, this distance is L > 3.6 m. As the linear size of the microphone arrays increases, this distance increases rapidly.

#### METHODS:

There are many algorithms used in microphone grid systems to process audio data. In general, in microphone grid systems, audio data processing algorithms can be divided into two groups, adaptive and non-adaptive. If the acoustic state changes, you have to use an adaptive algorithm. Each of the algorithms used in microphone grille systems will be aimed at solving some kind of problem in accordance with the purpose. Examples of such issues are:

- Processing in real time (on-line) or post (off-line);
- For processing signals from sources over short or long distances;
- Signal processing in stationary or dynamic acoustic mode.

The desired algorithm is selected depending on what problem it is designed to solve.

The most widely used algorithms in the processing of audio data in microphones are:

- Delay and addition algorithm;
- Filtering and addition algorithms;
- Signal processing algorithms under the grid;
- High-level orientation algorithms;
- Algorithms for generating spatial zero;
- Algorithm for minimum noise variance (mvdr);
- Algorithm for the suppression of side flaps (GSC);
- De-Reverberation algorithms;
- Wiener's post-filtering algorithms;
- Algorithms for separation of acoustic sources.

In addition to the algorithms listed above, classical single-channel algorithms (equalizers, dynamic filters, correlated noise filters, etc.) are also used in audio signal processing. Acoustic field visualization, sound source tracking (state tracking) and other additional algorithms are also effective algorithms in the processing of sound data in microphone arrays.

The following are the characteristics of the most commonly used algorithms in audio signal processing in MICROPHONE GRILLS (Table 2).

Table 2. Orientation diagram properties of generation algorithms

Algorithms	Fixed / adaptive	Configuration of microphone grilles
Delay and addition	Fixed	Broadside
Delay and add under the grid	Fixed	Broadside
High level of focus	Fixed	Endfire
GSC	adaptive	Broadside
Viner post-filtering	adaptive	Broadside и Endfire

It is recommended to use fixed algorithms in environments with a constant acoustic state. This is due to the fact that such algorithms do not give good results in an environment where the acoustic state changes. In such cases, a solution to a particular problem can be found using special adaptive algorithms.

Table 3 below shows the advantages and disadvantages of the most commonly used audio signal processing algorithms in microphone arrays.

Table 3. Disadvantages and advantages of algorithms widely used in microphone arrays

Algorithms	Advantage	Disadvantage
Delay and add	Easy to apply in practice	Lack of flexibility in an acoustic environment
Filter and add	Designed for broadband signals	Lack of flexibility in an acoustic environment
Delay and add under the grid	Designed for broadband signals; Reduces the number of microphones in microphones	Lack of flexibility in an acoustic environment
High level of focus	Optimizes the transmission function of microphone grilles	Diffusion performance
GSC	Adapts to noise mode;	Possible distortion of useful signal content
Viner post-filtering	Minimizes noise signal strength at output	Possible distortion of useful signal content

Each of the algorithms listed in Table 3 has advantages and disadvantages. However, the implementation of the put-and-add algorithm is simple and highly efficient. Practical application of the rest of the algorithms is relatively difficult and expensive. Therefore, for the processing of sound data in the microphone system, the algorithm "delay and addition" was chosen (Russian -

“задержка суммирования», English - “delay-sum”).

The essence of the "delay and add" algorithm is that, since each element of the microphone grid system is located at different points in space, the sound signal from one source reaches these points at different intervals. Naturally, the instantaneously phase-shifted microphones of signals received at different times will also differ.

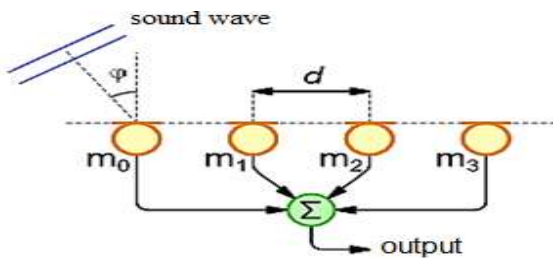


Figure 3. Image of a 4-element microphone array.

If there is a single sound source and the signal coming from it is added simultaneously without any change in the signals received by the different time-controlled microphones using the microphones, the phase difference will distort the signal structure and the resulting signal may not provide any information (Figure 4a). If the parameters of the signal from the source and the propagation velocity, as well as the distance between the microphones, are accurately oriented by the microphones, it will be possible to calculate the signal arrival time for each delay element. If the required slope-oriented microphones for each element are selected correctly, the signal received through them can be reduced to a microphone oriented to the same phase slope by delaying to the corresponding slope-oriented microphones. Adding these signals through an adder results in a signal whose microphone amplitude increases relative to the original signal amplitude depending on the number of microphones (Figure 4b).

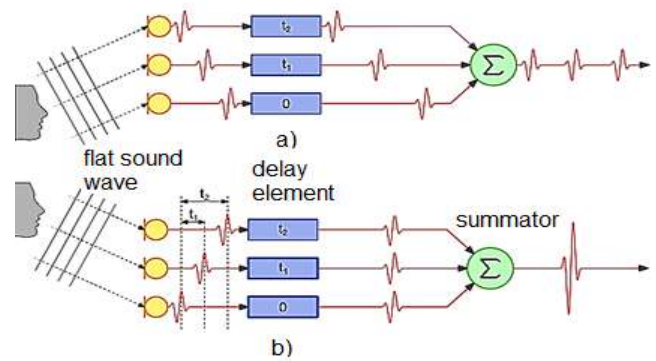


Figure 4. Adding signals: a) in different phases, b) in the same phase.

For any linear microphone array, the microphone delay time is determined by the following formula [5]:

$$\tau_n = (n-1)d \times \sin \varphi / c \quad (5)$$

where  $d$  is the distance between microphones, an oblique microphone  $n$  lies in the range  $1 \leq n \leq N$  for microphone grids with  $N$  microphones,  $\varphi$  is the direction of the sound signal and the angle between the microphone system,  $c$  is the speed of the sound signal in the air ( $c = 340 \text{ m / s}$ ).

Below is a diagram of the "postpone and add" algorithm (Figure 5).

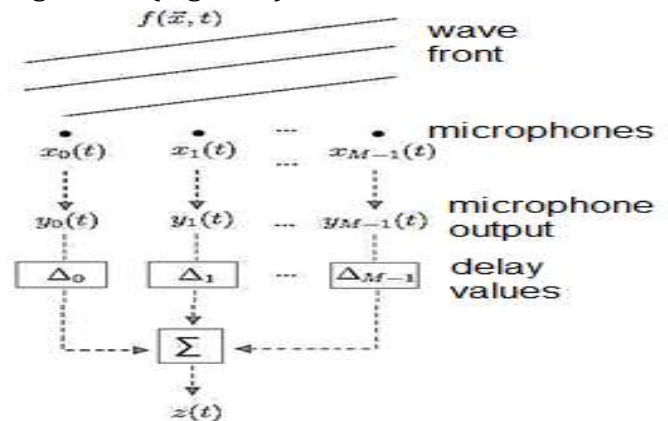


Figure 5. Delay and addition algorithm scheme.

**RESULTS:**

The resulting signal processed by the microphone array in the frequency range is determined by the following formula [2]:

$$y'(f) = \sum_{n=1}^N w_n(f)x_n(f) \quad (6)$$

where  $w_n(f)$  is the amplitude weight, calculated as follows:

$$w_n(f) = \frac{1}{N} e^{\frac{-2\pi f}{c}(n-1)\sin \varphi} \quad (7)$$

To simplify the appearance of the formula (6), the following view can be made:

$$y'(f) = w(f)^T x(f) \quad (8)$$

where  $w(f)$  and  $x(f)$  are calculated as follows:

$$w(f) = [w_1(f) \ \cdots \ w_n(f) \ \cdots \ w_N(f)]^T \quad (9)$$

$$x(f) = [x_1(f) \ \cdots \ x_n(f) \ \cdots \ x_N(f)]^T \quad (10)$$

If the angle between the normal axis of the microphone system and the direction of the sound signal is  $0^\circ$ , then the form of formula (7) will be as follows:

$$w_n(f) = \frac{1}{N} \quad (11)$$

The resulting signal in the time field can be expressed by the following formula:

$$y(t) = \frac{1}{N} \sum_{n=1}^N x_n(t - \tau_n) \quad (12)$$

#### DISCUSSION:

The calculated  $y(t)$  signal ideally represents the wanted signal. In a real case, the resulting signal may contain additional noise generators. A good result can be achieved by clearing the content of the resulting signal from such noise generators using filters of a certain type.

#### CONCLUSION:

This article discussed the advantages and disadvantages of methods and algorithms for processing audio signals in MICROPHONE Arrays, and analyzed the "delay and add" algorithm among them. The main advantage of this algorithm is its ease of implementation. This is because delay and add operations do not require high-level technical tools and large amounts of money. The main disadvantage of the algorithm is the lack of flexibility in the acoustic environment. An effective result can be achieved by processing the received signal in order to overcome these disadvantages. In addition, a number of algorithms for processing sound in microphone array systems are based

on a delay and add algorithm. Based on this, the goal was to use a delay and add algorithm when processing audio data in a microphone system.

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## SEMIOLOGICAL ANALYSIS OF MONOLINGUAL DICTIONARIES

(On example of French dictionaries)

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### ABSTRACT:

The achievements of modern lexicography put on the agenda the development of factors for the creation of colorful dictionaries in French, the search for ways to use different approaches and the creation of a modern classification of dictionaries. According to S.I. Ismailov, nowadays new dictionaries of the French language can be classified on the basis of six main criteria. These are: the form of presentation, the material of the dictionary microstructure, the number and status of the studied language or languages, the characteristics of the information provided the extension of the dictionary macrostructure, the organization of the dictionary macrostructure. Based on these criteria, S.I. Ismailov distinguishes six different types of French dictionaries. These are: a) paper-based dictionaries / electronic dictionaries / digital dictionaries; b) pure dictionaries / illustrated dictionaries / pictorial dictionaries; c) monolingual dictionaries / multilingual dictionaries; d) word or language dictionaries / objects or encyclopedic dictionaries; d) extensive dictionaries / restrictive dictionaries; e) with alphabetic dictionaries / thematic dictionaries.

### INTRODUCTION:

In this article, we want to focus on some of the issues of how the theory of semantic analysis of lexical units is formed in modern monolingual dictionaries of the French language - whether in terms of language or speech. It is known that vocabulary plays an

important role in compiling a dictionary. The set of words in a language makes up the lexicon. It is a leading component of verbal communication and is used in conjunction with grammar and phonetics in speech as a means of conveying human thoughts and feelings. The choice of lexicon as a keyword in lexicographic sources can be considered as one of the main factors in the classification of dictionaries.

A dictionary (lat. etymology dictio "unit of expression through language") is a general alphabetical list of phrases and words. Each of them is given with an informative text either about what is indicated (alphabetical encyclopedias) or about the character (language dictionary). Any dictionary is based on macrostructure (nomenclature, or list of units) and microstructure (information program applied to these units). It relies on a body of linguistic texts or metalinguistic (other dictionaries). Depending on the degree of reflection of these features, we can distinguish the following types of dictionaries in general: general dictionaries, special dictionaries, annotated dictionaries.

A general dictionary of a language aims to describe all of the entire vocabulary stock, but cannot describe all the words. The words selected in the first place are the most common words (frequency / distribution); the more nomenclature, the fewer words. A general dictionary can contain 300 words (for children), 3,000 words (for foreigners) or 30,000 words (for adults). A general dictionary is, therefore, an important wish that is global and intended, without a complete list of lexical resources.

Unlike an encyclopedic dictionary, a language dictionary is a metalinguistic text

because it speaks of words. The main introductory words in this dictionary are autonyms, i.e. the names of words, grammatical subjects, and predicates. For example: Formel, elle quality, means "precision and clarity removes any error, any ambiguity." The word also means "it only applies to form" (PR1). Patienter is an intransitive verb meaning "to wait patiently".

When the main introductory word is already a noun in the speech, the definition can be brought in with the verb être: Chiot: un chiot est un jeune chien. In this case, the metalanguage is lost: everything is expressed in the primary language, whereas "chiot est un nom masculin" is in the secondary language because it speaks of a sign. We see why the name predominates in the nomenclatures of encyclopedic dictionaries. Nevertheless, both the encyclopedic dictionary and the linguistic dictionary can be compared to a repository where references are identified.

General dictionaries are contrasted with special dictionaries that cover either one area of knowledge (mathematics, botany, computer science, etc.) or one area of the word. Special dictionaries are language dictionaries (homonymic, synonymic, etymologic, etc.). These dictionaries, unlike regular language dictionaries, are just dictionaries characters. According to their structure, these dictionaries cover more or less lexicon: if the dictionary of homonyms contains several words, the etymological dictionary covers all words, because they all have the same source of origin. Terminological dictionaries are always special dictionaries, the nomenclature of which consists of symbols. These words that mean things are mostly noun.

Explanatory dictionaries are designed to define the semantic structure of a word. In relation to such dictionaries, French lexicological theory uses the term dictionnaires semi-bilingues (semi-bilingual dictionaries)

because, for example, for words learned from a foreign language, each definition comes with a reference in another language.

The same is true for French dictionaries created over time. Usually, an old French dictionary is not considered a bilingual dictionary; the differences are noticeable, the structures are close to a bilingual dictionary. The previous reference characters are different from today. It is necessary to consider the status of dictionaries between monolingual and bilingual dictionaries. Such a problem is also peculiar to regional dictionaries of dialects with a common source.

The term modern language itself is not very clear either. The language used today is made up of an old language modified by a series of linguistic cases. The most recent neologisms are among such modified cases. Modern language corresponds to a historical result that has been preserved and assimilated by neology in every state of language. For each person, the idiolect is different in the absolute expression and again because of the change of generations. The old lexicon of language is a passive lexicon for young people (the student understands his great-grandmother), and the emerging lexicon is a passive lexicon for adults. A truly modern dictionary cannot provide the social dialogue of generations that coexist.

The so-called historical dictionary is a dictionary that takes into account the history of the etymology of words, their polysemy, for a complete description of modern language (e.g., Le Petit Robert). Attempts to describe the whole history of words from their origin in exactly one dictionary will inevitably fail. As for the synchronous dictionary, as mentioned above, it should respect the exchange of three generations (80 years); it can't be strictly modern.

As for old language dictionaries, they are of two types: ancient dictionaries written by people of the same period (e.g., Furetière,

Littré ...) and old language dictionaries written by people of the present period (Dictionnaire d'ancien français de Godefroy, et, par J. Picoche, de moyen français (Froissard). The former are true monolingual witnesses of the period, while the latter are quasi-bilinguals (almost bilingual) dictionaries. The description of the old language is undoubtedly done by means of modern language, and the accuracy is no better than the accuracy of a bilingual dictionary. A true monolingual dictionary (such as Le Furetière, Le Littré) has the advantage of being complete within a state of language - a primary language and metalanguage. One of the important results is that the exact word and its definition are synonymous in exactly one semantic chain.

The clarification of the concept of an annotated dictionary is also noteworthy. We know that such a dictionary does not include famous nouns and that it covers all word groups, including grammatical words. These two criteria are sufficient to distinguish it from an encyclopedic dictionary, because an encyclopedic dictionary describes things expressed in words, concepts in the form of a generalized paragraph about an object from all points of view. Often in a language dictionary, examples describe a referent, which does not indicate the use of a sign; this image approaching the referent makes it a sister to the encyclopedic discourse. Let's compare: Enfermer: mettre (quelqu'un, un animal) dans un lieu dont il est impossible de sortir tout seul. La nuit, on enferme les vaches dans l'étable. L'oiseau est enfermé dans sa cage. L'otage est enfermé dans une pièce → séquestrer. Le malfaiteur est enfermé → emprisonner (DF1999).

The language dictionary is based on the difficulty of spelling or pronunciation of modern names, or the assimilation of the French language (Istanbul, Metz, Mozart; Tibre ← Tevere, Irlande du Nord ← Northern Ireland)

or rewriting, or even the translation of both (États-Unis ← United ) may also be mentioned (DF 1999).

As for the microstructure program of dictionaries, it is to some extent rich and consists of two structures: the minimum structure: form (writing and sound), category (gram.jins) and definition; the maximum structure contains all the information about the word in the language and speech. In particular, in the language: origin, character analysis (morphology), sound field (homophones), semantics (synonyms); in speech: morphosyntax (connections, adaptations, paired forms ...). But I think the main thing in pedagogy is manifested in example. An imaginary example provides the best information; the fictional example is metalinguistic: the content is not directed to the reader and, unlike the information given about the character, is not related to the existing situation: for example, Vous êtes un imbécile. Ce dictionnaire est très fautif.

In general, a general explanatory dictionary of language tries to describe this language through its lexicon, giving examples of characters that are added in syntax with morphosyntax. Because of the example, we have access to: word meaning, grammar, and the semiotics of society in a particular period. Moreover, if it is in morphological form, it ensures the correct construction of complex neologisms and, moreover, has an onomasiological role that allows to get rid of jargons and barbarisms. The linguistic method implies, first of all, the refusal to describe the semantics in itself, to take the semantics together with the form, and to bring the content as close as possible to the description through the combinatorial rules of linguistic form and thought.

Language is the formation of a sentence that is able to establish communication between the speaker who conveys the idea and

the listener who receives it. From this point of view, the lexicographic definition is manifested in the following postulate: the speech chain can be divided into separate segments that make up dictionary articles, and each of these segments corresponds to a single content that is the object of creating a dictionary article. These simple approaches to lexicographic definition mean that we can implicitly solve some theoretical problems raised by human language in the field of lexicography, such as the problem of the nature of the linguistic sign, the problem of determining the form unit in relation to the unit of speech, the problem of the relationship between form and content we tried.

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## TECHNOLOGY OF TEACHING FOREIGN LANGUAGES ON THE BASIS OF WEB APPLICATIONS

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### ABSTRACT:

**What is the best way to learn a new language? Ask anyone who speaks more than one language so you get a comprehensive answer. Classes, textbooks, language exchange programs are tools that help you learn a language to a certain extent. Language learning apps are another tool that is becoming increasingly popular. However, each program has its own direction and method of teaching.**

**KEYWORD: Program, learning apps, popular, tutorial, basic skills, Rosetta stone, Pimsleur.**

### INTRODUCTION:

#### Why use language learning programs:

Learning another language is not an easy task. Unlike children who learn by listening to what others have to say, adults have to go through long and arduous trials and tribulations, including learning and practicing grammar, vocabulary, and speech. This can be time consuming, especially if you are on a full day workout.

Although the classroom environment has traditionally been popular among language learners, interest in learning an official language is declining. The Association of Modern Languages found that from fall 2013 to fall 2016, enrollment in courses at U.S. colleges and universities decreased by 9.2%. Currently, language learning programs are gaining popularity among students around the world due to their availability.

Traditionally, applications have been used to complement traditional methods of

language learning. Recently, these programs have been further improved to completely replace the elementary and intermediate courses. You may not be able to communicate fluently with them, but they can serve as a starting point for learning.

Ultimately, the goal of a language learning program is to reduce the impact on your language learning schedule and wallet. It is much cheaper than other alternatives such as training courses or trips abroad and can be accessed from anywhere, depending on the platform.

Important information about language learning applications

There is no one-size-fits-all language learning app that is suitable for everyone. One type of application may cost more in one area, such as speaking ability, while another may spend more on reading comprehension and writing.

Start reviewing your motives for learning a new language. Do you want to learn basic skills or do you need something longer and more detailed? What you need to learn is different whether you want to learn the language because you are going on vacation, going to work, or you want to open business channels with a foreigner.

Then think about how to do it. Some have busy schedules and need to plan time to exercise in small segments throughout the day. Others may set aside a few hours each day to focus on one side of the tongue. Some types of application are best for different students.

You can start learning this language as soon as you have identified your needs. Keep in

mind that the number of language learning programs on the market has grown significantly, especially after popular brands such as Rosetta Stone and Duolingo popularized this teaching method.

#### **BEST LANGUAGE LEARNING APPS:**

**Pimsleur:** Best for learning on the go

**Rosetta Stone:** The best program for a full course

**Babbel:** Better for grammar

**Duolingo:** The best free tutorial app

**LinguaLift:** Best for cultural bathing

**iTalki:** Best for tutoring

#### **Pimsleur:**

Pimsleur Premium is suitable for everyone. Unlike other programs on this list, Pimsleur courses are designed with speech methodology in mind. Classes are audio-oriented and usually last no more than half an hour; users are advised to read on the road, subway, or during breaks. Courses can be started through the phone app or its website. In addition to its basic audio lessons, Pimsleur includes flash card exercises, reading lessons, and other additional materials available on the Internet.

#### **Rosetta Stone:**

First released as a CD-ROM program in 1993, Rosetta remains one of the best language learning programs. Today, the company's online subscription offers courses in more than 30 endangered languages.

Listen, read, write, speak - Rosetta tries to combine all the basic elements of language learning into a single coherent program. Another reason Rosetta excels at creating an impressive approach to language is speech recognition technology, which is commendable for its accuracy and high level of customization. Learning to speak like a mother tongue is crucial for students to feel that they have made

real scientific progress. The technology works on all devices that Rosetta has: computers, tablets and smartphones

#### **Babbel:**

Grammar may not be the most exciting part of language learning, but it is an important part for those who want to work harder than just speaking at a simple level. This is especially important if you plan to use the language for professional purposes or want to understand more complex sentences.

Today we live in an era of important innovation processes. All there is a wide range of reforms in the education system as well as in other areas. Its completeness, relevance and complexity impose a great responsibility on modern teachers. The President of the Republic of Uzbekistan Sh. M. Mirziyayev, as they say, in order to give modern knowledge, first of all, the coach himself must have such knowledge. The teacher today has modern knowledge, using his skills, transferred all his knowledge to the student, there is a lot of research ahead. In connection with the current pandemic, the issue of improving the quality of education in our country is in the spotlight on distance learning using information and telecommunication technologies, systems of electronic textbooks and methods of their application are being developed.

It is also a new way of teaching a subject, based on the methodology of each subject and tools, using a wide range of interactive pedagogical methods. The great goal we have set for ourselves is to create an independent, versatile person. This is considered an important factor in adulthood. This means inventing non-traditional teaching methods, existing methods must be learned, shared experience. Here is innovation in pedagogy, the importance of teaching and pedagogical innovation. This is the first collection, a

generalization of all the innovations in pedagogy, the second is to choose the most effective news, and the third is to choose them for practical application. We know that educational technologies are a whole pedagogical process on a general pedagogical scale. And the learning technology, depending on specific conditions, is predicted in accordance with a clearly defined result, and not a preliminary one.

**CONCLUSION:**

Therefore, the introduction of technologies, ensuring that teaching methods meet the requirements of the times are the main tasks of pedagogical scientists. Training and retraining of specialists is also important. At a time when the economic, political, cultural and educational ties of our country with the

world are growing, the interest of our youth in the life, culture, customs and language of foreign countries is growing.

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## REVIEW ON IMPROVING ENERGY EFFICIENCY OF INTERNET ROUTERS

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### ABSTRACT:

In the recent past, the use of internet has become an integral part of economic development in every country, both the developed and the undeveloped. As a result, there has been an increase in the size of internet networks to ensure that the demands of the consumers are met. However, the amount of power consumed increases as the size of the network increases (Szymanski, 2016). There is an increase in the demand for power as urbanization also increases and since internet is becoming the major power consumer with time, it is important to establish a more efficient system. As the number of internet users increases, it is expected that the power usage will increase to higher levels. There is the need to create the strategies that can help improve the efficiency of the use of internet (An & Luo, 2018). It is expected that if the efficiency of the system is not improved, the amount will increase to levels that surpasses the global power output. Improving the efficiency of these systems is an approach that is expected to reduce the cost of the use of electricity. The thesis outlines the various approaches that can be used to ensure an improved efficiency of the internet networks in terms of power consumption.

### Modelling Internet Power Consumption

**KEYWORDS:** Energy, modeling, network, routers

### INTRODUCTION:

Maintaining equipment inventory is the best approach for modelling the internet power consumption and its related information and communications technology. The use of the historical sales data on telecommunications equipment is an important insight towards the estimation of equipment quality in an internet network. This is considered to be a perfect means of estimating the magnitude of energy consumption when considering the information regarding the energy consumption of such equipment. However, the approach doesn't give the interplay between the growth of demand and the consequential consumption of power that can be very important in understanding future energy growth. The future trends for growth can influence the consumption patterns of power as most of the internet-based services are in use (Yang et al., 2016). A complementary approach tends to use a model based on the principles of telecommunications network design. The approach involves the segmentation of the internet into several parts. The energy consumption rate of the parts can then be calculated with the use of a paper design for the network, alongside the data provided by the manufacturers on the equipment power consumption.

The access network is key in connecting the individual homes and their businesses to the various local exchanges. Currently, there are a wide range of technologies that have been identified for modifying power consumption some already in use while others still undergoing development. It is now possible to

use the fixed line telephone services with the help of a digital subscriber loop that makes the use of the copper pairs. Currently, a higher frequency of the fixed line telephone service is in use as it is more efficient (Chen et al., 2017). When the copper pairs are in a perfect condition, a fiber to the node technology is often used. In this technology, a dedicated fiber is used and it extends from the local exchange to link to the DSL access multiplier. The main network is often made up of a smaller number of the large routers within the main population centers. The core routers are always in charge of all the necessary routing activities and are also the gateways for the neighboring core nodes (Yang et al., 2016). The core routers in a single network are always highly meshed but only have limited links for networks from the other providers.

#### **Estimating Power Consumption:**

An access bit rate is often selected in estimating the consumption of power within a network infrastructure. With the knowledge of the network design, access technology, and the access rate, it is possible to calculate the capacity of a telecommunications equipment within the access, core networks and metro. The central office often harbors a number of OLT card often connected to an ethernet switch within the metro networks. The switch is likely to have a particular number of OLT cards and a maximum capacity it can accommodate (Ma et al., 2018). This often determine the number of switches required in handling this capacity. Despite the plots being smooth, there is a level of artifacts necessary for making a tractable analysis. The approach is based on an evaluation of the equipment with the right capacity to meet the total efficiency needs. However, a number of the network have a considerably flat load and power profile (An & Luo, 2018). Therefore, deploying the next

equipment set for coping up with the traffic increase results into an increase in the total power consumption.

#### **Major Contributors to Internet Power Consumption:**

There are often a wide range of factors that influence the rate of power consumption in internet transmission. The factors are varied and tend to influence the efficiency of the system.

#### **Network Equipment:**

The physical equipment used in the network system is one of the main contributors in the consumption of power. It often entails the equipment used in the access, metro and core network. Three main technologies often dominate the access network and often includes the copper, fiber, and a hybrid fiber coax and wireless. The metro network often acts as a gateway to the core and metro networks. A local traffic requires the routing within the suburban and city central areas (Ma et al., 2018). The rest is often routed into the core networks. The core network is often made up of intercity network systems and a core router and the two transport internet network services between different routers. Most of the internet services provided to the end users requires the exchange of information between the end users and the service provider's internet's point of connection. The data transport system is often backhaul and tend to use an ethernet or a wireless transport. There is always the need to power and cool the network equipment (Szymanski, 2016). This often entails providing a DC power system to the racks and tend to house the equipment and provide power supply to ensure power continuity to the equipment in the network.

### **Capacity Planning:**

There is the need for the owners of the telecommunication network to create room for future growth, traffic peaks and the restoration and protection of services. The approach generally requires some level of overbuilding the network that eventually increases its power consumption. Some sections of the core network or metro edge can always be 100 percent overbuilt based on the owner's network policies.

### **Cloud Facility:**

A significant amount of traffic in the internet emerges from the various services that are web-based and the available resources for ending the users through the internet. Examples include the content delivery, cloud services, and the storage as a service. The data centers offering these kinds of services requires a considerable level of equipment and the power to function. Content services requires the servers that store the content or data and regulate the its access. Other services require the hosting, processing and the search for data by the servers. The machine offering these kinds of services are always linked through a local or a wide area network (Szymanski, 2016). The networks also consume a lot of energy.

### **Demographics:**

It is common that the internet is always an intra and international network. The physical distance that exists between the various populations directly impacts the network's total power consumption. The density of the premises within the population location centers is also another critical factor. The widely spread entities often requires a lot of power for connection to the local exchange system.

### **Service Scenarios:**

Normally, the consumption of power is largely influenced by the service being offered that are always varied. There are always the shared services that may include the quasi real time and the non-real time services as the web browsing, email, and audio or video download and in such cases, short delays are always acceptable. The services are more often oversubscribed with realizing any speed degradation (Szymanski, 2016). The dedicated capacity for each of the service is always offered through the backhaul and access networks to the server offering the service or the contents. It is not likely that the dedicated capacity services can be oversubscribed. There are also the real time services often delivered to the multiple users through the multicast. Such kind of services may include the internet radio, video on demand services, and the broadcast video (Hao et al., 2020). A copy of the requested service is aligned to a switch next to the customer requesting. This is then replicated to all the requesting customers connected to the switch.

### **Service Managed:**

It is important to monitor the operations of all the networks and their services to be confident that their services meet the expected standards. The functions tend to add up to the total power consumption of the network since they need specialized equipment and systems to be incorporated into the network. It is clear that these are some of the factors that tend to influence the consumption of power by the internet infrastructure. Most of the factors that influence energy consumption tend to interplay with each other. There is however other alternative that still can have an impact on the total power consumption of the system (Zhong et al., 2016).

### **Improving the Internet's Energy Efficiency:**

It is evident that the two main areas that needs a close attention when seeking to improve the efficiency of any internet network are the core network routers and the access to network. The European Union has addressed the challenge arising from the address of the home terminal equipment and have as a result published the equipment's guidelines for power consumption. The voluntary code of conduct is meant to improve the energy efficiency of the various brands of equipment sold across Europe. It is part of the strategies for the improvement of energy efficiency of the internet equipment (Szymanski, 2016). The standards set by the Union requires that the equipment should able to reduce the power consumption when not being used. The low power state is very significant in saving the total energy consumption of these equipment. The second approach entails the reduction of a device's processing rate at the time when the workload is low. Most of the devices tend to operate in a range of bit rates. Power consumption is often low when the equipment operates at a lower speed. Making the internet routers more energy efficiency is the most common approach that has been set to save on the power consumption. This often entails changes either on the router function or the signal processing technology of the router (Zhong et al., 2016). Lastly, it is recommended to adopt the network access technologies that are energy efficient.

### **Power Aware Routing Control:**

The control of internet routing can be used as a perfect approach towards reducing an internets total energy consumption. However, there are often the challenges of being aware of the network performance and the QoS considerations. It is possible to use a queueing theoretical analysis and an optimization

technique to for traffic distribution to help reduce the cost function and is made of both the QoS and energy. The separation of nodes into the set of links and the set of routers has the nodes that tend to connect the nodes. This representation allows for a separately model the impacts of the links and the routers on QoS and the consumption of power. Basically, the control of the routing process is meant to make the entire process easier to operate and more efficient in terms of energy consumption (Hao et al., 2020). The approaches used in the process of improving efficiency need to be in line with the current demands for development.

The amount of power that a router consumes is a critical factor when choosing the router to be used for internet supply. The good news is that currently there are several routers that use small amounts of power to operate ranging between 2 to 20n watts. This is like leaving a single CFL bulb turned on at all times. However, the amount of power consumed by these devices still vary based on the model. For instance, the models that have multiple antennas tend ton consume more electricity as compared to the models that uses single antennas. It is also likely t6hat the consumption rate of the energy will vary based on the settings and therefore, it is important to refer to the user manual to consider the most effective setting for energy consumption (Szymanski, 2016). The cost of one's electricity will also influence the exact cost of operating the router. The collective cost of running then routers in every household is therefore a huge amount of money. If not managed, the amount can exceed the global power supply.

### **Energy Efficiency Standards for Routers:**

Routers have a number of features that are key in saving energy. The lower power mode enables the device to go into a standby or sleep mode when the device is not in use. An energy

efficient ethernet is important in scaling down the consumption of power based on the use. The future is capable of reducing the total power consumption by up to 50 percent or more when it is enabled. The disadvantages of such devices are not easy to find even upon an exhaustive search within the internet. The increase in the marketing and distribution of the energy efficient routers would be key in empowering the customers to choose the alternatives with high efficiency. The chosen product must meet certain efficiency standards for it to be considered appropriate. At the moment, there are just a few US environmental protection agency routers in the market and consumes about 5 and 13 watts of power. When buying the smaller internet equipment, it is important to consider the energy star logo that implies that the model uses 20 percent less compared to a conventional unit. Ideally, it is important to consider the devices that are both energy star certified and EEE enabled when possible. Unfortunately, such models don't seem to be on the market currently (Shukla & Kumar, 2018). The most sustainable choice in this category is the TREND net TEW-651 BR, which is an inexpensive router using just 2 watts of power.

### **Network Energy Wastes:**

There are a number of organizations that have reported the data on the energy consumption and the relating carbon footprint that has indicated a growing and alarming trend. A larger percentage of the total energy consumption arises from the network infrastructure that contributes to up to 70% of the total power requirements. Data centers often takes about 10 percent of the energy with the remaining 20 percent going to the spurious sources (Ma et al., 2018). The global initiative for energy sustainability has also reported same estimation and considered the carbon footprint of the networks to be at an alarming rate.

According to the 2020 estimates, the networks mobile estimation is expected to reach up to 50 percent of the total carbon dioxide emission. The devices will result into an ever growing and a non-negligible contribution to the environmental degradation (Bhalla et al., 2016). Based on the previous research, the total power consumption by the telecommunication equipment estimates at approximately 19 to 24 Twh per year. This is about 0.9 percent of the US total power consumption. The level is expected to rise in the near future.

### **Internal Source of Energy Wastes:**

To face the challenges of energy efficiency in the use of equipment, it is important to analyze and understand the exact causes of power wastage in an equipment. The network devices operating at various zones plays a key role due to the fact that their total energy requirements arise from their density and operational energy requirements. The specific functionalities of the network influence its operational energy requirements. The data plane is the representation of the energy starving and key elements in the larger part of the entire network architecture. This is mainly because it is often made up of elements serving special purpose. A part from the routers, the internal contributors of power wastage in a network system cannot be generally maintained at a fair level (Szymanski, 2016). The complex traffic engines tend to play a significant part in the total energy consumption.

### **CONCLUSION:**

In conclusion, as the number of internet users increases, it is expected that the power usage will increase to higher levels. There is the need to create the strategies that can help improve the efficiency of the use of internet. The use of the historical sales data on telecommunications equipment is an important



insight towards the estimation of equipment quality in an internet network. Ideally, it is important to consider the devices that are both energy star certified and EEE enabled when possible. Unfortunately, such models don't seem to be on the market currently. A significant amount of traffic in the internet emerges from the various services that are web-based and the available resources for ending the users through the internet. Most of the internet services provided to the end users requires the exchange of information between the end users and the service provider's internet's point of connection.

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# INTERPRETATION OF THE EXTRACT THROUGH THOUGHTS AND FEELINGS

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## ABSTRACT:

Nowadays the general education cycle of training philologists-linguists of broad specialization requires, as an integral part, the implanting of the culture of competent and erudite reading, which plays a considerable role in the ideological and moral upbringing of the students. That is the reason which accounts for the inclusion of the theoretical courses of "stylistics" and "interpretation of the text" in the curricula of linguistic pedagogical institutes and philological departments of universities.

**KEYWORDS:** Interpretation of the text as a scientific subject comprises a system of methods and devices for grasping the meaning of a belles-lettres text and its ideological-aesthetic and emotional information by comprehending the author's vision of the world and the cognition of objective reality, reflected in the text. The course of interpretation for future teachers-philologists is aimed at developing their skill for penetrating into the deep essence of a literary work, for finding objective reasons in the text of its ideological, aesthetic, educational and emotional impact on the reader and for extracting the entire information, that is deposited in it.

## INTRODUCTION:

Similarity or dissimilarity of separate ideological-aesthetic, psychological, emotional qualities of the author and reader stipulates the possibility of different treatment of one and the same novel or story. However the possibility of different treatment doesn't mean utter arbitrariness in the interpretation of the text,

because all interpreters proceed from the same actuality recorded in a given printed matter.

A belles-lettres text is usually complex and consists of several layers. The task of interpretation is to extract maximum of thoughts and feelings with which it is imbued by the author.

While decoding the writer's message, the reader must recreate the complete picture of objective reality which is expressed in the text in a compressed and curtailed form. In the ideal variant the reality perceived by the author must be identical to the reality recreated by the reader, but as a rule complete identity is never achieved because the recipient of the book unavoidably includes his own personal experience (thesaurus) in the perception of the text. The addressee's subjective qualities — his intellect, his cultural and educational level, emotional and psychological turn of mind are actively included in the functioning of the trielemental scheme: addresser — report — addressee', forming new types of relationship between them. That's why the pedagogical aspect of interpretation is of great importance because only an insignificant part of readers is capable of mastering a belles-lettres work in its completeness and profundity. A common reader must be taught READING as a specific kind of cognitive-aesthetic activity. That is the main task of interpretation of the text.

When the reader comes across some historical facts, geographic for proper names, quotations, allusions and proverbs, which are not familiar to him, he will miss many important points and there'll be lacunes or blanks in his understanding of the book. Very often the necessary information of the cultural context is provided by the commentary to the book, if not,

the reader must consult encyclopaedias, dictionaries, the author's biography, an outline of his literary career and other reference books.

If the reader is capable of taking the right attitude to the book, his influence will be beneficial. If the reader is unable to interpret the book correctly he may become an obedient and helpless tool of the author's will. The practice of interpreting books can help to organize this process in a faultless way and prepare the reader to give a proper evaluation of the book and the idea expressed in it. The aim of training students in interpreting texts is to give initial knowledge to broad masses for the perception of verbal art, which is an effective way for cognizing and learning the surrounding reality.

Speaking about "interpretation" as a scientific subject many researchers point out its creative character and consider it to be a humanitarian branch of learning. Since the language tissue of a literary work serves as the main and primary source of all kinds of information, "interpretation" is rightfully considered to be a linguistic subject and finds itself on the juncture with stylistics and literary criticism on one side and philosophy, sociology, ethics and aesthetics on the other.

A valuation focus of a literary work is not permanent, it is shifting in the course of time and in each new epoch the analysis goes along somewhat different lines. Thus the dominant function of "Eugene Onegin" in XIX century was different from what it is now. For modern readers Decembrists' political ideas expressed in the book are no longer actual because they don't answer urgent questions of the present-day complex world. This versified novel now attracts readers by other points, its political problems have become subdued, and its axiological structure has changed.

Informatively is the main category of the text, its ability to convey information, i.e. certain meaningful contents. The concept of information

embraces a number of problems overstepping the limits of purely linguistic research. One of them is the problem of the new (the unknown). It is quite obvious, that the new can't be subjected to consideration without taking into account social, psychological scientific, cultural, age, time and other factors.

Another question is the value of the received information. It is known that information, being repeated, loses its value and a result ceases to be information. It is also known that some texts have unchangeable value. Their aesthetic-cognitive or scientific significance' always remains in the treasury of human culture. They serve as a permanent source of the new and therefore they are always informative.

In written texts of different functional styles according to Prof. I. R. Galperin<sup>1</sup> it is expedient to distinguish, the following kinds of information:

- a) content-factual (CFI),
- b) content-conceptual (CCI),
- c) content-sub textual or implicit, (CSI).

Content-factual information contains reports about facts, events, processes which took place, or are taking place or will take place in the surrounding world, real or imaginary.

Content-conceptual information conveys to the reader the author's individual understanding of the relations described by means of CFI, his understanding of the cause and effect connections, their significance in the social, economic, political and cultural life of the people, including the relations between separate individuals, and their complex psychological, aesthetic and cognitive interaction.

Content-sub textual information is not explicit by its nature, it is not expressed in the verbal layer of the text. It is a kind of subcurrent concealed information that can be derived from CFI thanks to the ability of the language units to engender associative and connotative meanings

as well as thanks to the ability of sentences united into syntactical wholes to convey increment of sense. The Belgian writer-symbolist M. Meterlinx, author of "The Blue Bird", was the first to take notice of sub current information in the text.

The final aim of interpretation is the extraction of the content-conceptual information, i.e. the formulation of the idea of a literary work. While revealing the conceptual, information, we try to penetrate through the surface structure of the text into its deep-level, meaning and comprehend the author's message of the book. Thus we see that the decoding of the conceptual information depends on content-factual and sub textual kinds of information.

It is rather difficult to evaluate the conceptual information not only for well-read people but even for sophisticated expounders, who often vary in their opinion about it. That leads to plurality in interpretation. This circumstance gives ground for disputes which would be very useful in a students' auditorium.

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# ADULTS NEWLY INFECTED WITH HIV IN BOTSWANA: A BOX-JENKINS ARIMA APPROACH

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## ABSTRACT:

Using annual time series data on the number of adults (ages 15 and above) newly infected with HIV in Botswana from 1990 – 2018, the study predicts the annual number of adults who will be newly infected with HIV over the period 2019 – 2025. The paper applies the Box-Jenkins ARIMA technique. The diagnostic ADF tests show that the K series under consideration is an I (1) variable. Based on the AIC, the study presents the ARIMA (4, 1, 0) model as the optimal model. The residual correlogram shows that the presented model is very stable and suitable for forecasting new HIV infections in adults in Botswana. The findings of the study reveal that the numbers of new HIV infections in adults in the country are likely to go up from about 7907 in 2019 to almost 8262 new infections by 2025. This means that Botswana's quest for an AIDS free society will remain a pipeline dream at least from the next 5 years. This is not a desirable public health outcome but rather a warning signal for policy makers so that they make the necessary decisions now before the situations goes out of hand. If nothing is done now, Botswana's HIV/AIDS burden will definitely rise and possibly overwhelm the country's limited resources. We basically encourage the government of Botswana to intensify its HIV prevention and control programs in order to possibly reserve the projected trajectory and save precious lives.

## INTRODUCTION:

The Human Immunodeficiency Virus (HIV) is a retrovirus that infects cells of the immune system, destroying their function (Awoleye & Thron, 2015). Currently, antiretroviral drugs slow down replication of the virus and can greatly enhance quality of life, but they do not eliminate HIV infection (Commission on HIV/AIDS and Governance in Africa, 2008). HIV has remained a global public health challenge since the epidemic began in 1970s (Avert, 2017). In Botswana, the HIV epidemic was discovered in the early 1980s. The country now has one of the highest levels of HIV prevalence in the world (Stover et al., 2008) estimated to be around 17.6% (Thigpen et al., 2012). The epidemic has imposed a terrible burden due to lives lost, reduced quality of life and a large number of orphans (NACA, 2008). Botswana became the first African country to establish a national Antiretroviral Therapy (ART) program and began providing treatment free of charge to its HIV – infected population early in 2002 (Farahani et al., 2014). The country's ART program has been touted as successful in controlling the HIV epidemic. Botswana, being one of those countries with the highest HIV prevalence in the world; has an estimated 24% of adults (in ages 15 and above) infected (UNAIDS, 2006; Statistics Botswana, 2013; Karim, 2016; UNAIDS, 2017) and yet no study has been carried out to model and forecast the trends of new HIV infections in this high risk adult cohort. The main goal of this study is to

predict the number of adults newly infected with HIV in Botswana over the period 2019 – 2025. This paper will go a long way in assessing the possibility of ending the HIV epidemic in the country.

**LITERATURE REVIEW:**

Stover et al. (2008) estimated past trends and current levels of HIV in Botswana and the effects of treatment and prevention programs, through the use of surveillance, survey and program data over the period 1980 – 2007. The study results showed that the number of new HIV infections in adults was continuing to rise to higher levels. Using data from the BAIS III, Keetile (2014) explored high risk behaviors of adults and how they affect government efforts to stop the spread of HIV/AIDS in Botswana. Both descriptive and binary logistic analyses were used for analysis. The study found out that there was statistically significant association between multiple current partners and alcohol consumption. The study also indicated that there was inconsistent condom use in the country. Tenforde et al (2017) determined the national incidence of cryptococcal meningitis and described the characteristics of cases during 2000-2014 and temporal trends at 2 national referral hospitals. UNAIDS population estimates were used to calculate national incidence. The findings of the study showed that despite excellent ART coverage in Botswana, there is still a substantial burden of advanced HIV. Recently, Matlho et al (2019) examined HIV related characteristics and behaviors of the older cohort (50-64 years). The study revealed that there was inconsistent condom use among older adults, of at least 59%. Furthermore, the paper also showed that there was a dramatic increase in HIV prevalence, especially among older men. No study has attempted to model and forecast new HIV infections in Botswana. This paper will be

the first of its kind in the country. We focus on new HIV infections in adults, guided by the fact that HIV prevalence in Botswana is skewed towards adults within the age range of 15 – 49 years old.

**METHODOLOGY:**

**3.1 The Box – Jenkins (1970) Methodology:**

The first step towards model selection is to difference the series in order to achieve stationarity. Once this process is over, the researcher will then examine the correlogram in order to decide on the appropriate orders of the AR and MA components. It is important to highlight the fact that this procedure (of choosing the AR and MA components) is biased towards the use of personal judgement because there are no clear – cut rules on how to decide on the appropriate AR and MA components. Therefore, experience plays a pivotal role in this regard. The next step is the estimation of the tentative model, after which diagnostic testing shall follow. Diagnostic checking is usually done by generating the set of residuals and testing whether they satisfy the characteristics of a white noise process. If not, there would be need for model re – specification and repetition of the same process; this time from the second stage. The process may go on and on until an appropriate model is identified (Nyoni, 2018c). This approach will be used to analyze the J series under consideration.

**3.2 The Moving Average (MA) model:**

Given:

$$K_t = \sum_{i=1}^q \alpha_i \mu_{t-i} \dots \dots \dots [1]$$

where  $\mu_t$  is a purely random process with mean zero and variance  $\sigma^2$ . Equation [1] is referred to as a Moving Average (MA) process of order q, commonly denoted as MA (q). K is the annual number of adults newly infected

with HIV in Botswana at time  $t$ ,  $\alpha_0 \dots \alpha_q$  are estimation parameters,  $\mu_t$  is the current error term while  $\mu_{t-1} \dots \mu_{t-q}$  are previous error terms.

**3.3 The Autoregressive (AR) model:**

Given:

$$K_t = \sum_{i=1}^p \beta_i K_{t-i} + \mu_t \dots \dots \dots [2]$$

Where  $\beta_1 \dots \beta_p$  are estimation parameters,  $K_{t-1} \dots K_{t-p}$  are previous period values of the  $K$  series and  $\mu_t$  is as previously defined. Equation [2] is an Autoregressive (AR) process of order  $p$ , and is usually denoted as AR ( $p$ ).

**3.4 The Autoregressive Moving Average (ARMA) model:**

An ARMA ( $p, q$ ) process is just a mere combination of AR ( $p$ ) and MA ( $q$ ) processes. Thus, by combining equations [1] and [2]; an ARMA ( $p, q$ ) process may be specified as shown below:

$$K_t = \sum_{i=1}^p \beta_i K_{t-i} + \sum_{i=1}^q \alpha_i \mu_{t-i} + \mu_t \dots \dots \dots [3]$$

**3.7 Diagnostic Tests & Model Evaluation:**

**3.7.1 Stationarity Tests: Graphical Analysis:**

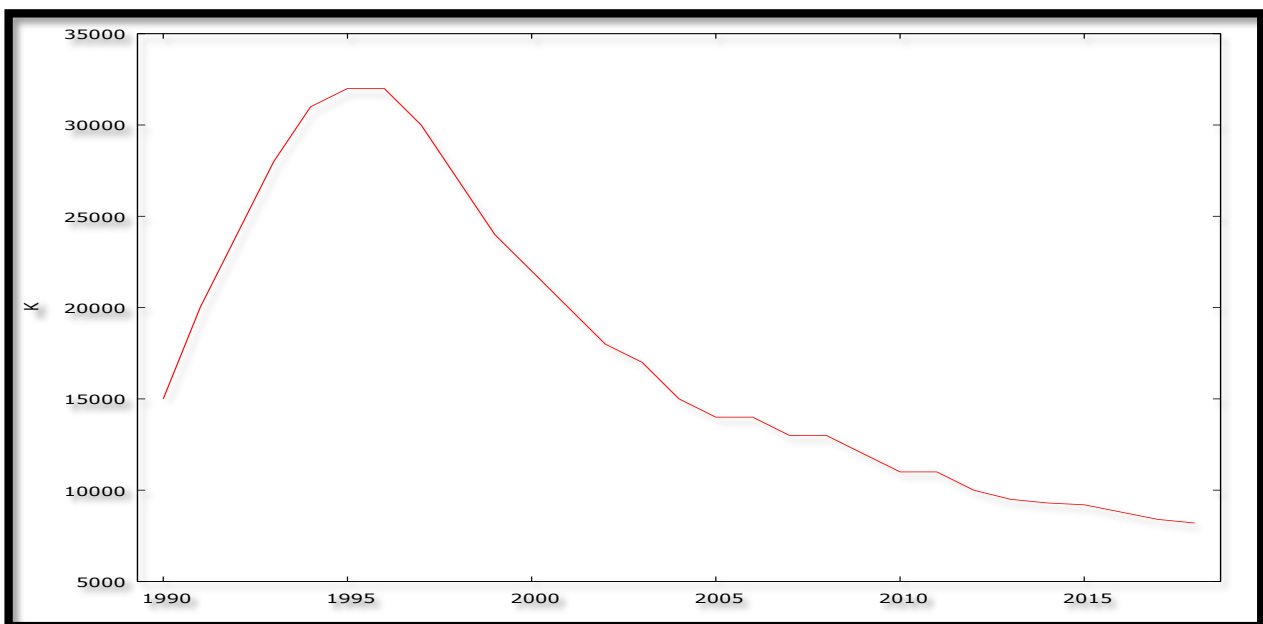


Figure 1

**3.5 The Autoregressive Integrated Moving Average (ARIMA) model:**

A stochastic process  $K_t$  is referred to as an Autoregressive Integrated Moving Average (ARIMA) [ $p, d, q$ ] process if it is integrated of order “ $d$ ” [ $I(d)$ ] and the “ $d$ ” times differenced process has an ARMA ( $p, q$ ) representation. If the sequence  $\Delta^d K_t$  satisfies an ARMA ( $p, q$ ) process; then the sequence of  $K_t$  also satisfies the ARIMA ( $p, d, q$ ) process such that:

$$\Delta^d K_t = \sum_{i=1}^p \beta_i \Delta^d K_{t-i} + \sum_{i=1}^q \alpha_i \mu_{t-i} + \mu_t \dots \dots \dots [4]$$

where  $\Delta$  is the difference operator, vector  $\beta \in \mathbb{R}^p$  and  $\alpha \in \mathbb{R}^q$ .

**3.6 Data Collection:**

This study is based on annual observations (that is, from 1990 – 2018) on the number of new HIV infections in adults (ages 15 years and above) [denoted as  $K$ ] in Botswana. Out-of-sample forecasts will cover the period 2019 – 2025. All the data was gathered from the World Bank online database.

### 3.7.2 The Correlogram in Levels:

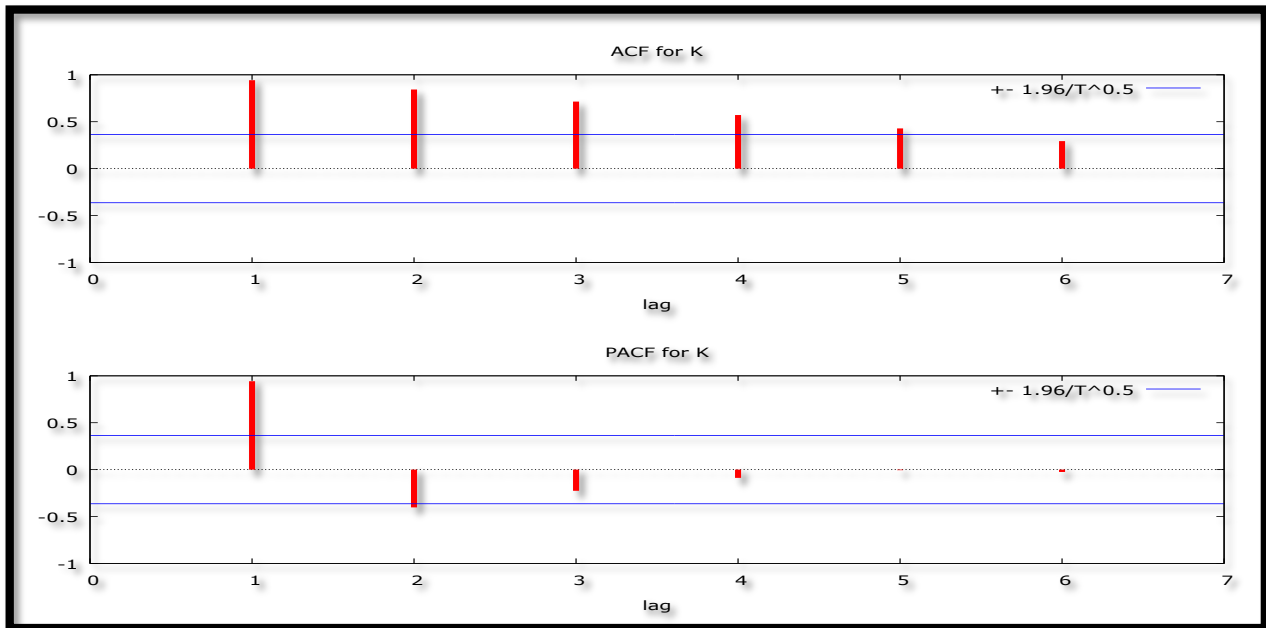


Figure 2: Correlogram in Levels

### 3.7.3 The ADF Test in Levels:

Table 1: with intercept

Variable	ADF Statistic	Probability	Critical Values	Conclusion	
K	-0.162702	0.9325	-3.689194	@1%	Non-stationary
			-2.971853	@5%	Non-stationary
			-2.625121	@10%	Non-stationary

Table 1 shows that K is not stationary in levels, in line with implications from figure 1 and 2.

### 3.7.4 The Correlogram (at First Differences):

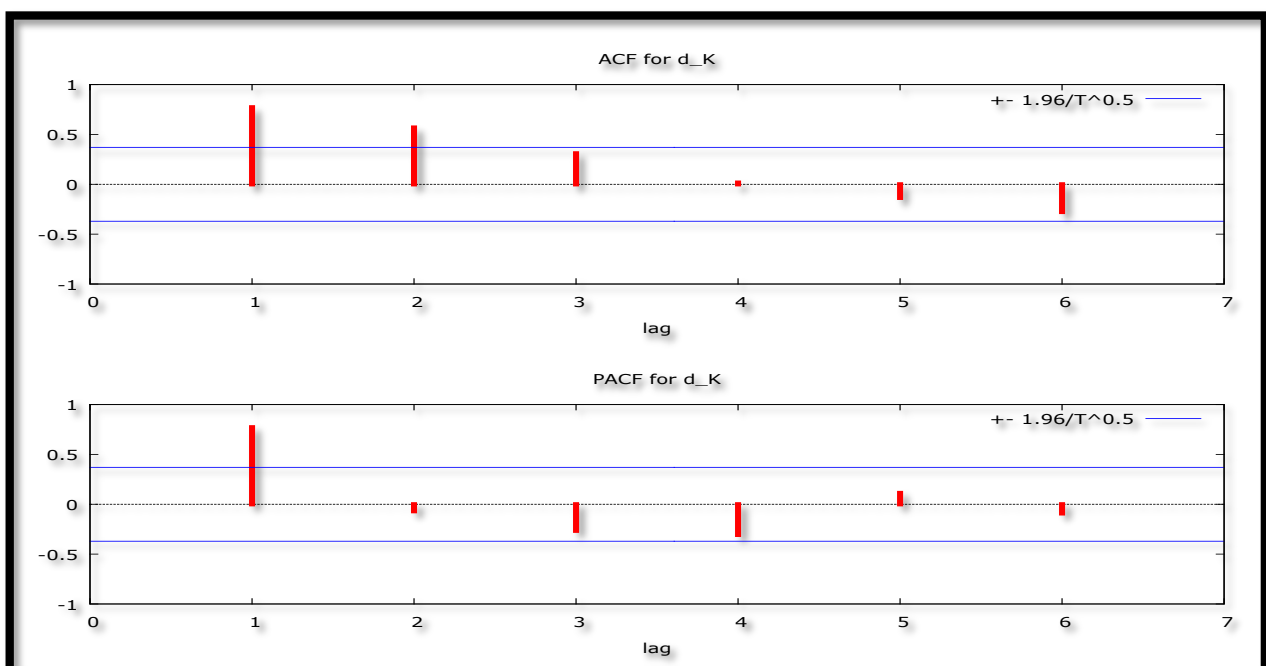


Figure 3: Correlogram (at First Differences)



### 3.7.5 The ADF Test (at First Differences):

Table 2: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
$\Delta K$	-5.269198	0.0003	-3.737853	@1%	Stationary
			-2.991878	@5%	Stationary
			-2.635542	@10%	Stationary

Figure 3 as well as table 2 indicate that K is an I (1) variable.

### 3.7.6 Evaluation of ARIMA models (without a constant):

Table 3: Evaluation of ARIMA Models (without a constant)

Model	AIC	U	ME	RMSE	MAPE
ARIMA (1, 1, 2)	464.4638	0.58565	19.813	1200.7	4.9883
ARIMA (1, 1, 0)	466.8711	0.58203	-21.455	1267.9	4.9414
ARIMA (2, 1, 0)	468.1866	0.61663	4.1189	1257.7	5.0742
ARIMA (3, 1, 0)	467.0542	0.61798	45.114	1218.4	5.1212
ARIMA (2, 1, 2)	464.3771	0.54803	56.566	1174.4	4.459
ARIMA (4, 1, 0)	<b>459.9494</b>	0.49402	62.281	1141.8	4.0111
ARIMA (5, 1, 0)	460.2396	0.49354	73.541	1128.3	4.1865

A model with a lower AIC value is better than the one with a higher AIC value (Nyoni, 2018b). Similarly, the U statistic can be used to find a better model in the sense that it must lie between 0 and 1, of which the closer it is to 0, the better the forecast method (Nyoni, 2018a). In this paper, only the AIC is used to select the optimal model. Therefore, the ARIMA (4, 1, 0) model is finally chosen.

### 3.8 Residual Tests:

#### 3.8.1 Correlogram of the Residuals of the ARIMA (4, 1, 0) Model:

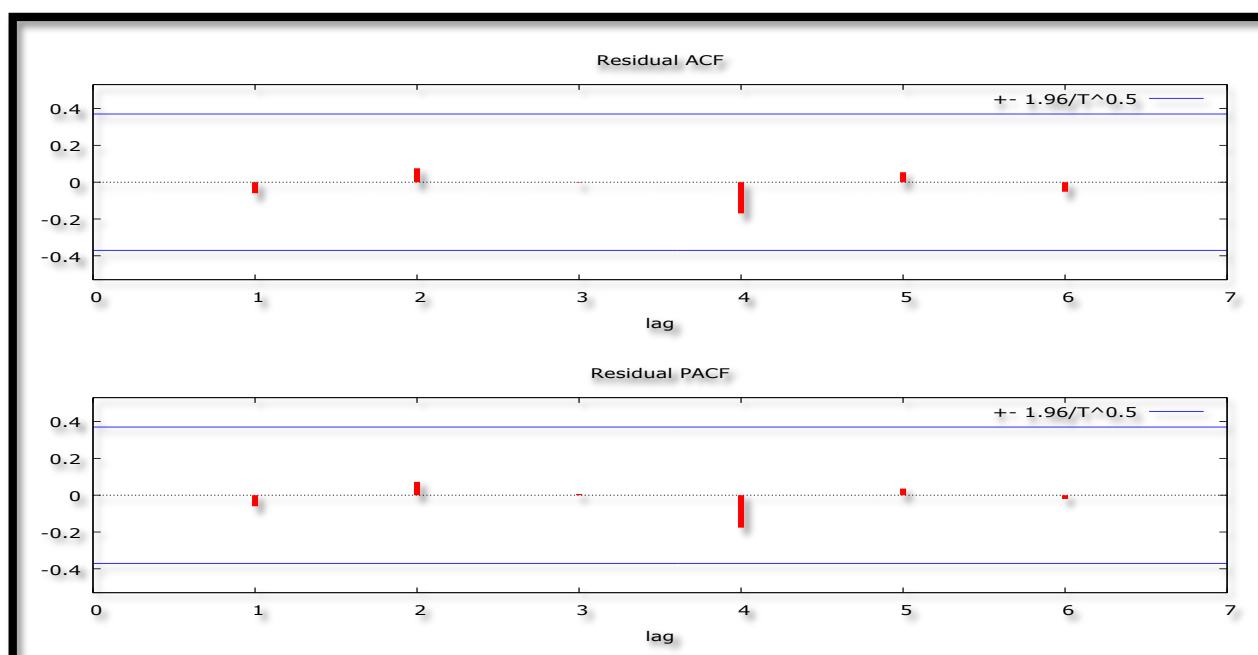


Figure 4: Correlogram of the Residuals

Figure 4 indicates that the estimated optimal model is adequate since ACF and PACF lags are quite short and within the bands. This implies that the “no autocorrelation” assumption is not violated in this paper.

**FINDINGS:**

**4.1 Descriptive Statistics:**

Table 4: Descriptive Statistics

Description	Statistic
Mean	17462
Median	15000
Minimum	8200
Maximum	32000

As shown in table 4 above, the mean is positive, that is, 17462. This means that, over the study period, the annual average number of adults newly infected with HIV in Botswana is approximately 17462. The minimum number of adults newly infected with HIV in the country is 8200 while the maximum is 32000.

**4.2 Results Presentation**

Table 5: Main Results

<b>ARIMA (4, 1, 0) Model:</b>				
Guided by equation [4], the chosen optimal model, the ARIMA (4, 1, 0) model can be expressed as follows: $\Delta^2 K_t = 0.821715\Delta^2 K_{t-1} + 0.287281\Delta^2 K_{t-2} + 0.171047\Delta^2 K_{t-3} - 0.549120\Delta^2 K_{t-4} \dots \dots \dots [5]$				
Variable	Coefficient	Standard Error	z	p-value
$\beta_1$	0.821715	0.167539	4.905	0.0000***
$\beta_2$	0.287281	0.225570	1.274	0.2028
$\beta_3$	0.171047	0.218498	0.7828	0.4337
$\beta_4$	-0.549120	0.157135	-3.495	0.0005***

Table 5 shows the main results of the ARIMA (4, 1, 0) model.

**Forecast Graph**

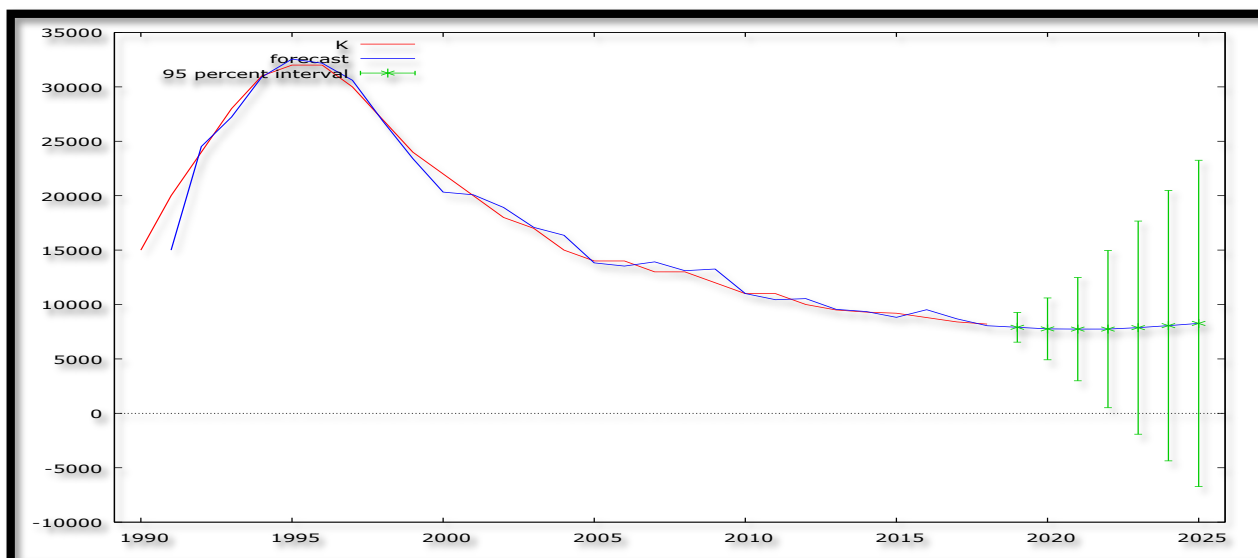


Figure 5: Forecast Graph – In & Out-of-Sample Forecasts

Figure 5 shows the in-and-out-of-sample forecasts of the K series. The out-of-sample forecasts cover the period 2019 – 2025.

**Predicted K- Out-of-Sample Forecasts Only**

Table 6: Predicted

Year	Prediction	Standard Error	95% Confidence Interval
2019	7907.24	697.727	(6539.72, 9274.76)
2020	7760.44	1449.97	(4918.55, 10602.3)
2021	7741.16	2424.08	(2990.04, 12492.3)
2022	7742.88	3687.31	(515.887, 14969.9)
2023	7874.41	4997.48	(-1920.47, 17669.3)
2024	8060.30	6340.43	(-4366.71, 20487.3)
2025	8261.72	7650.75	(-6733.48, 23256.9)

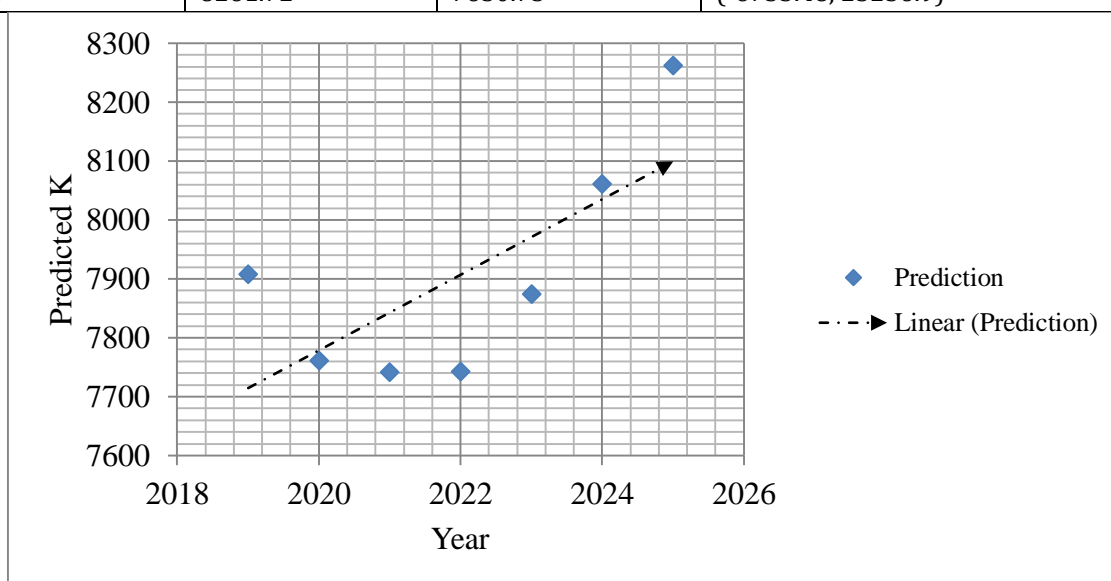


Figure 6: Graphical Analysis of Out-of-Sample Forecasts

Table 6 and figure 6 show the out-of-sample forecasts only. The number of adults newly infected with HIV in Botswana is projected to resurge from approximately 7907 in 2019 to 8262 by the year 2025. New HIV infections in adults in the country remain unacceptably. The results of this study are consistent with previous studies such as Stover et al. (2008), Keetile (2014), Tenforde et al. (2017) and Matlho et al. (2019). Although Botswana was among the first African countries to introduce HIV prevention programs focused on male circumcision, prevention of mother to child transmission, and voluntary counseling and testing, there is need for additional prevention strategies to

better control the generalized epidemic in this country (Thigpen et al., 2012). Overall HIV prevalence in the country is not declining (Avila et al., 2014; Siedner et al., 2015; Wang et al., 2016) but rather slowly and progressively going up. However, it is possible to significantly reduce the number of new HIV infections in adults, especially if the current government of Botswana considers the policy directions suggested below.

**CONCLUSION:**

The study shows that the ARIMA (4, 1, 0) model is not only stable but also the most suitable model to forecast the annual number of adults newly infected with HIV in Botswana over the period 2019 – 2025. The model

predicts an increase in the annual number of new HIV infections in adults in the country. These findings are essential for the government of Botswana, especially for long-term public health policy formulation. The study recommends that the government of Botswana should intensify HIV prevention and treatment programs throughout the country; with particular emphasis on behavior change interventions such as increased condom use, reduced/reasonable alcohol consumption and reduction of sexual partners. Public health policy makers in Botswana ought to strengthen HIV, TB, and Sexual & Reproductive Health programme linkages around the country. Although Botswana is not a low-circumcision country, still there is need for up scaling of medical male circumcision as an additional HIV prevention strategy; especially considering the projected increase in new HIV infections in adults.

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## OPEN DEFECATION RESURGENCE IN TANZANIA? EARLY WARNING SIGNALS FROM THE BOX-JENKINS APPROACH

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### ABSTRACT:

Using annual time series data on the number of people who practice open defecation in Tanzania from 2000 – 2017, the study predicts the annual number of people who will still be practicing open defecation over the period 2018 – 2021. The study applies the Box-Jenkins ARIMA methodology. The diagnostic ADF tests show that the Q series under consideration is an I (2) variable. Based on the AIC, the study presents the ARIMA (0, 2, 2) model as the optimal model. The diagnostic tests further reveal that the presented model is stable and its residuals are not serially correlated and are also normally distributed. The results of the study indicate that the number of people practicing open defecation in Tanzania is likely to continue on an upwards trajectory, over the period 2018 – 2022, from approximately 11.8% to almost 12% of the total population. Indeed, open defecation is a “persistent habit” in Tanzania, especially in rural areas. Hence, the ambition of attaining an open defecation free status by 2021 in Tanzania can no longer be realized. The study suggested a 3-fold policy prescription to be put into consideration, especially by the government of Tanzania.

### INTRODUCTION:

Open defecation remains a serious global challenge. Nearly a quarter of the world's population lacks access to a facility that

hygienically separates excreta from human contact (WHO, 2017). Open defecation can be defined as the practice of defecating in fields, forest, bushes, bodies of water or other open spaces, or disposal of human faeces with solid waste (WHO, 2008). Open defecation increases human exposures to enteric pathogens and is considered a major risk to children's health and development (Waddington et al., 2014). At least 5.4 million Tanzanians have no latrine and defecate in the open (WSP, 2012). Faecal contamination of the environment is the root cause of an annual average of 5800 cases of cholera affecting Tanzania (WHO, 2009). Approximately 26500 Tanzanians, including 18500 children under 5 years of age, die each year from diarrhoea – nearly 90% of which is directly linked to open defecation and poor sanitation practices (WSP, 2012). Open defecation has also considerable social costs such as loss of dignity and privacy or risk of physical attack and sexual violence (ibid).

Tanzania is making rapid progress on many human development and economic indicators (UNDP, 2018) and has ambitiously set a goal of achieving open defecation free status by 2021 (SNV, 2017) but sanitation (Czerniewska et al., 2019), particularly, open defecation remains a significant health threat. This is attributed to the fact that in Tanzania, the people in poverty, the elderly people, people with disabilities and those with other specific vulnerabilities still practice open defecation (SNV, 2020). Thus, it has become inevitable for public health

researchers to model and predict the number of people practicing open defecation in order to formulate evidence-driven policies to end open defecation. The main purpose of this study is to predict the annual number of open defecators in Tanzania over the period 2018 – 2021. This study, besides being the first of its kind in the case of Tanzania, will go a long way in uncovering the possibility of ending open defecation in the country.

#### **OBJECTIVES OF THE STUDY:**

- i. To investigate the years during which open defecation was practiced by people more than 9% of the total population in Tanzania.
- ii. To forecast the number of people practicing open defecation in Tanzania for the period 2018 – 2021.
- iii. To examine the trend of open defecation in Tanzania for the out-of-sample period.

#### **LITERATURE REVIEW:**

Sara & Graham (2014) studied the factors that facilitate latrine adoption in rural Tanzania. The study was based on cross-section of 1000 households in rural districts in Tanzania. Results of the study basically showed a significant association between use of improved sanitation and satisfaction with current facility. In another Tanzanian study Nyanza et al. (2018) investigated the utilization and determinants of access to sanitation facilities among pastoral communities in rural areas of Tanzania. The study was cross-sectional in nature and was done in Ngorongoro Conservation Area. The study concluded that there is limited access to water and sanitation facilities in the Ngorongoro Conservation Area. In the case of Ghana, Alhassan & Anyarayer (2018) examined the adoption of sanitation innovations introduced in Nadowli-Kaleo district in Upper West region of Ghana as part of the efforts to attain Open Defecation Free (ODF)

status. Interviews were employed to gather data. The study indicate that while effective communication of innovation resulted in widespread awareness, low income levels significantly accounted for households' inability to sustain and utilize latrines. In a study, done in Madagascar, Nyoni & Nyoni (2020) applied the ARIMA model and predicted that the country is likely to face increased number of open defecators over the period 2018 – 2022, from 45% to nearly 47% in 2022. This study, in line with Nyoni & Nyoni (2020), will adopt the ARIMA method in analyzing open defecation trends in Tanzania and is apparently the first of its kind in the country.

#### **METHODOLOGY:**

##### **3.1 The Box – Jenkins (1970) Methodology:**

The first step towards model selection is to difference the series in order to achieve stationarity. Once this process is over, the researcher will then examine the correlogram in order to decide on the appropriate orders of the AR and MA components. It is important to highlight the fact that this procedure (of choosing the AR and MA components) is biased towards the use of personal judgement because there are no clear – cut rules on how to decide on the appropriate AR and MA components. Therefore, experience plays a pivotal role in this regard. The next step is the estimation of the tentative model, after which diagnostic testing shall follow. Diagnostic checking is usually done by generating the set of residuals and testing whether they satisfy the characteristics of a white noise process. If not, there would be need for model re – specification and repetition of the same process; this time from the second stage. The process may go on and on until an appropriate model is identified (Nyoni, 2018c). This approach will be used to analyze the Q series under consideration.

**3.2 The Moving Average (MA) model:**

Given:

$$Q_t = \sum_{i=1}^q \alpha_i \mu_{t-i} \dots \dots \dots [1]$$

where  $\mu_t$  is a purely random process with mean zero and variance  $\sigma^2$ . Equation [1] is referred to as a Moving Average (MA) process of order  $q$ , usually denoted as MA ( $q$ ).  $Q$  is the annual number of people (as a percentage of the total population) who practice open defecation in Tanzania at time  $t$ ,  $\alpha_0 \dots \alpha_q$  are estimation parameters,  $\mu_t$  is the current error term while  $\mu_{t-1} \dots \mu_{t-q}$  are previous error terms.

**3.3 The Autoregressive (AR) model:**

Given:

$$Q_t = \sum_{i=1}^p \beta_i Q_{t-i} + \mu_t \dots \dots \dots [2]$$

Where  $\beta_1 \dots \beta_p$  are estimation parameters,  $Q_{t-1} \dots Q_{t-p}$  are previous period values of the  $Q$  series and  $\mu_t$  is as previously defined. Equation [2] is an Autoregressive (AR) process of order  $p$ , and is usually denoted as AR ( $p$ ).

**3.4 The Autoregressive Moving Average (ARMA) model:**

An ARMA ( $p, q$ ) process is just a combination of AR ( $p$ ) and MA ( $q$ ) processes. Thus, by combining equations [1] and [2]; an

ARMA ( $p, q$ ) process may be specified as shown below:

$$Q_t = \sum_{i=1}^p \beta_i Q_{t-i} + \sum_{i=1}^q \alpha_i \mu_{t-i} + \mu_t \dots \dots \dots [3]$$

**3.5 The Autoregressive Integrated Moving Average (ARIMA) model:**

A stochastic process  $Q_t$  is referred to as an Autoregressive Integrated Moving Average (ARIMA) [ $p, d, q$ ] process if it is integrated of order “ $d$ ” [ $I(d)$ ] and the “ $d$ ” times differenced process has an ARMA ( $p, q$ ) representation. If the sequence  $\Delta^d Q_t$  satisfies an ARMA ( $p, q$ ) process; then the sequence of  $Q_t$  also satisfies the ARIMA ( $p, d, q$ ) process such that:

$$\Delta^d Q_t = \sum_{i=1}^p \beta_i \Delta^d Q_{t-i} + \sum_{i=1}^q \alpha_i \mu_{t-i} + \mu_t \dots [4]$$

where  $\Delta$  is the difference operator, vector  $\beta \in \mathbb{R}^p$  and  $\alpha \in \mathbb{R}^q$ .

**3.6 Data Collection:**

This study is based on annual observations (that is, from 2000 – 2017) on the number of people practicing Open Defecation [OD, denoted as  $Q$ ] (as a percentage of total population) in Tanzania. Out-of-sample forecasts will cover the period 2018 – 2021. All the data was gathered from the World Bank online database.



### 3.7 Diagnostic Tests & Model Evaluation:

#### 3.7.1 Stationarity Tests: Graphical Analysis:

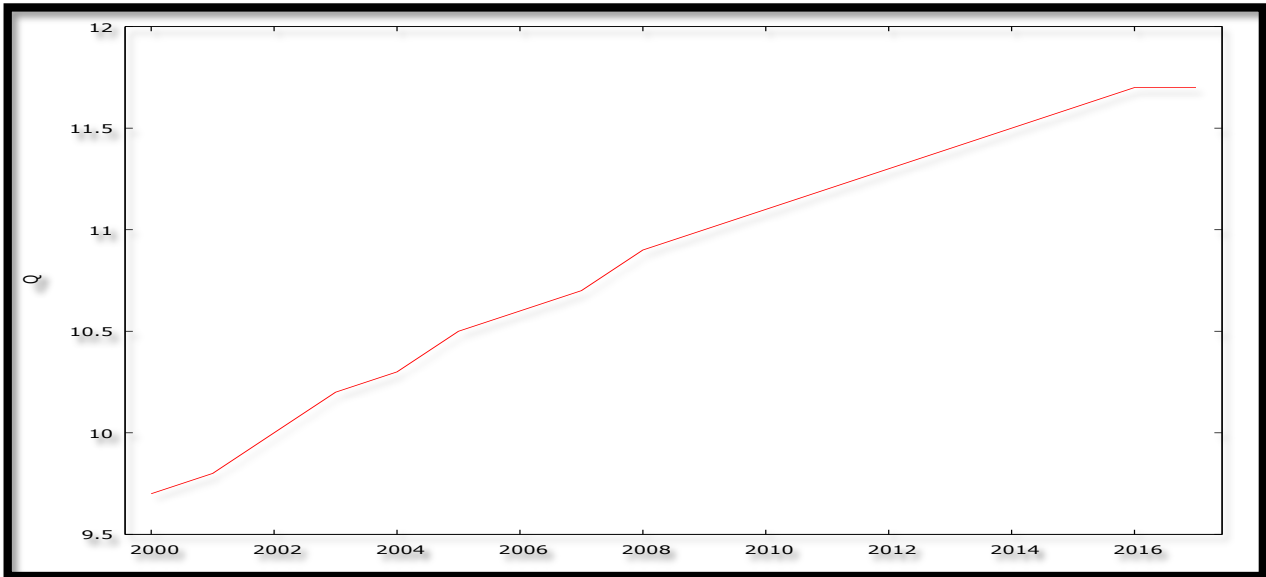


Figure 1

#### 3.7.2 The Correlogram in Levels

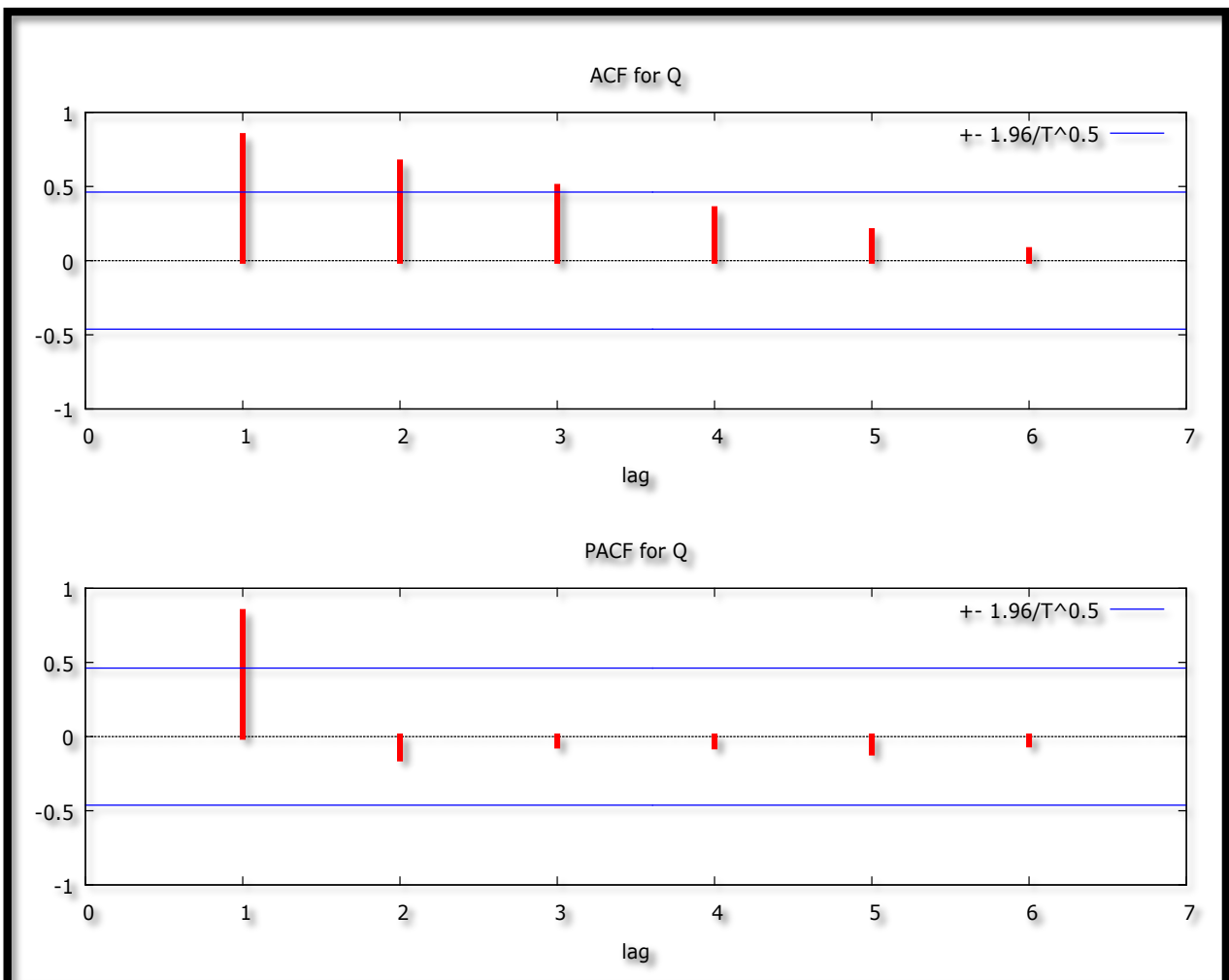


Figure 2: Correlogram in Levels

### 3.7.3 The ADF Test in Levels

Table 1: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
Q	-5.471504	0.0006	-3.959148	@1%	Stationary
			-3.081002	@5%	Stationary
			-2.681330	@10%	Stationary

Table 2: with intercept and trend & intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
Q	-1.003706	0.9120	-4.728363	@1%	Non-stationary
			-3.759743	@5%	Non-stationary
			-3.324976	@10%	Non-stationary

Table 1 shows that Q is not stationary in levels while table 2 shows exactly the opposite.

### 3.7.4 The Correlogram (at First Differences)

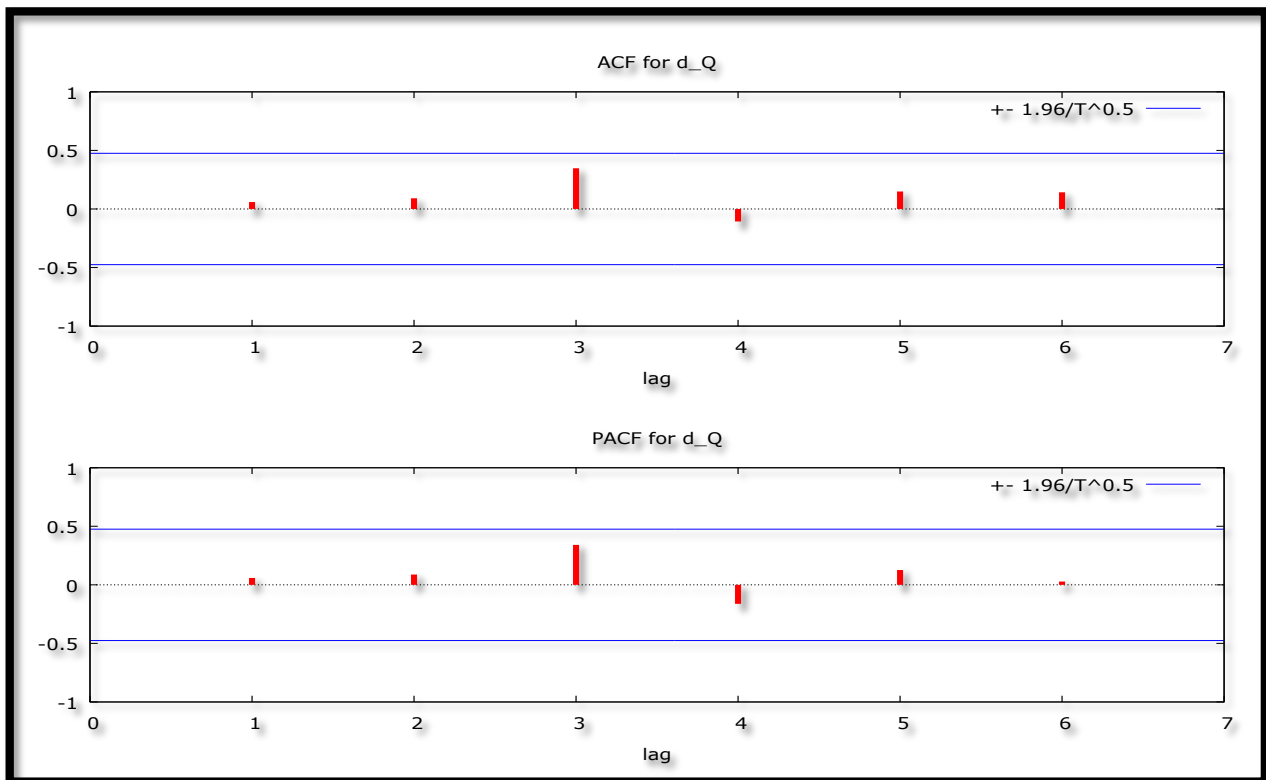


Figure 3: Correlogram (at First Differences)

### 3.7.5 The ADF Test (at First Differences)

Table 3: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
$\Delta Q$	-0.563507	0.8497	-4.004425	@1%	Non-stationary
			-3.098896	@5%	Non-stationary
			-2.690439	@10%	Non-stationary

Table 4: with intercept and trend & intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
$\Delta Q$	-3.513571	0.0803	-4.886426	@1%	Non-stationary
			-3.828975	@5%	Non-stationary
			-3.362984	@10%	Stationary

Figure 3 as well as tables 3 and 4, indicate that Q is not an I (1) variable.

### 3.7.6 The Correlogram (at Second Differences)

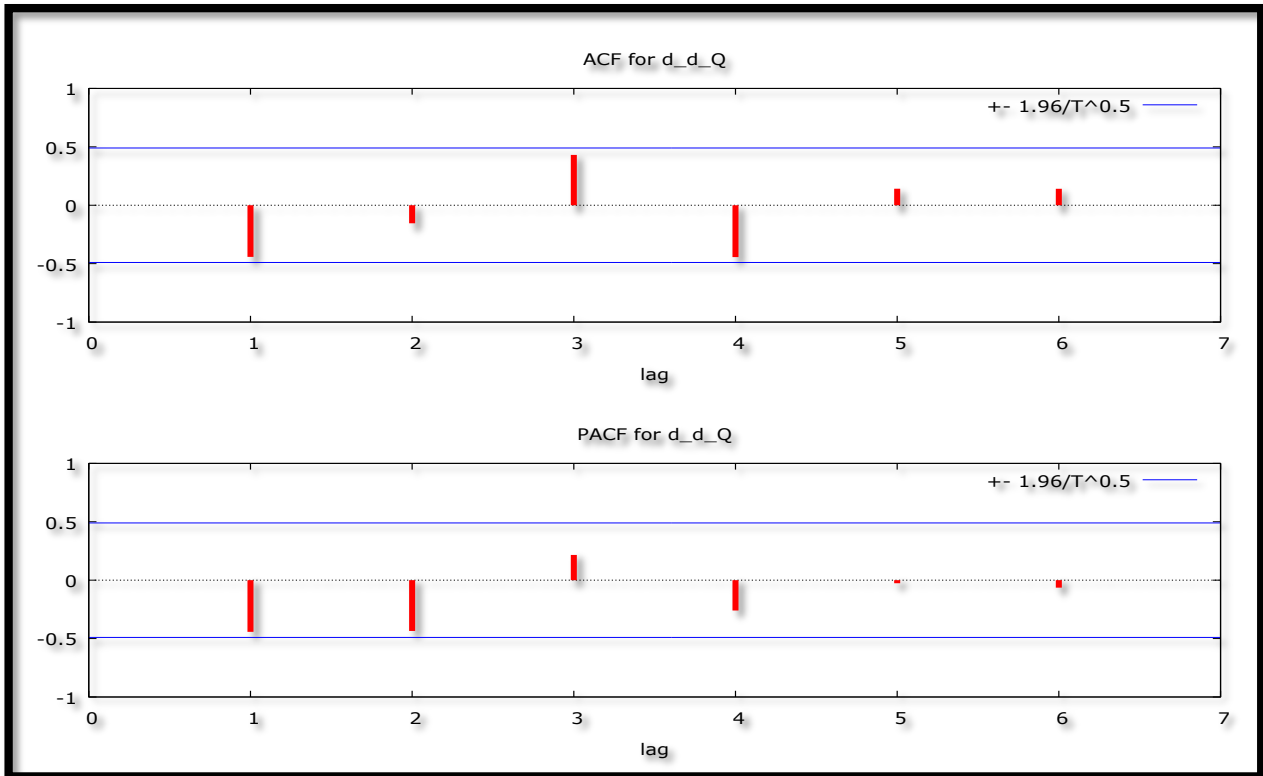


Figure 4: The Correlogram (at Second Differences)

### 3.7.7 The ADF Test (at Second Differences)

Table 5: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
$\Delta^2 Q$	-7.793198	0.0000	-4.004425	@1%	Stationary
			-3.098896	@5%	Stationary
			-2.690439	@10%	Stationary

Table 6: with intercept and trend & intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
$\Delta^2 Q$	-7.442057	0.0002	-4.800080	@1%	Stationary
			-3.791172	@5%	Stationary
			-3.342253	@10%	Stationary

Figure 4 as well as table 5 and 6 confirm that Q is an I (2) variable.

**3.7.8 Evaluation of ARIMA models (with a constant):**

Table 7: Evaluation of ARIMA Models (with a constant)

Model	AIC	U	ME	RMSE	MAPE
ARIMA (1, 2, 0)	-40.35686	0.4295	0.0037853	0.058153	0.43027
ARIMA (2, 2, 0)	-49.69564	0.30621	0.0097994	0.046106	0.33043
ARIMA (3, 2, 0)	-47.73368	0.30611	0.0098847	0.046064	0.3311
ARIMA (0, 2, 1)	-47.25275	0.3414	0.0093526	0.0489	0.35874
ARIMA (0, 2, 2)	<b>-54.23210</b>	0.28197	0.0089856	0.042732	0.31459
ARIMA (0, 2, 3)	-53.70052	0.28163	0.0064034	0.042631	0.30482
ARIMA (1, 2, 1)	-48.52487	0.32575	0.010034	0.047146	0.3495
ARIMA (2, 2, 2)	-51.70792	0.26073	0.010133	0.041354	0.28645

A model with a lower AIC value is better than the one with a higher AIC value (Nyoni, 2018b). Similarly, the U statistic can be used to find a better model in the sense that it must lie between 0 and 1, of which the closer it is to 0, the better the forecast method (Nyoni, 2018a). In this research paper, only the AIC is used to select the optimal model. Therefore, the ARIMA (0, 2, 2) model is finally chosen.

**3.8 Residual & Stability Tests:**

**3.8.1 Correlogram of the Residuals of the ARIMA (0, 2, 2) Model:**

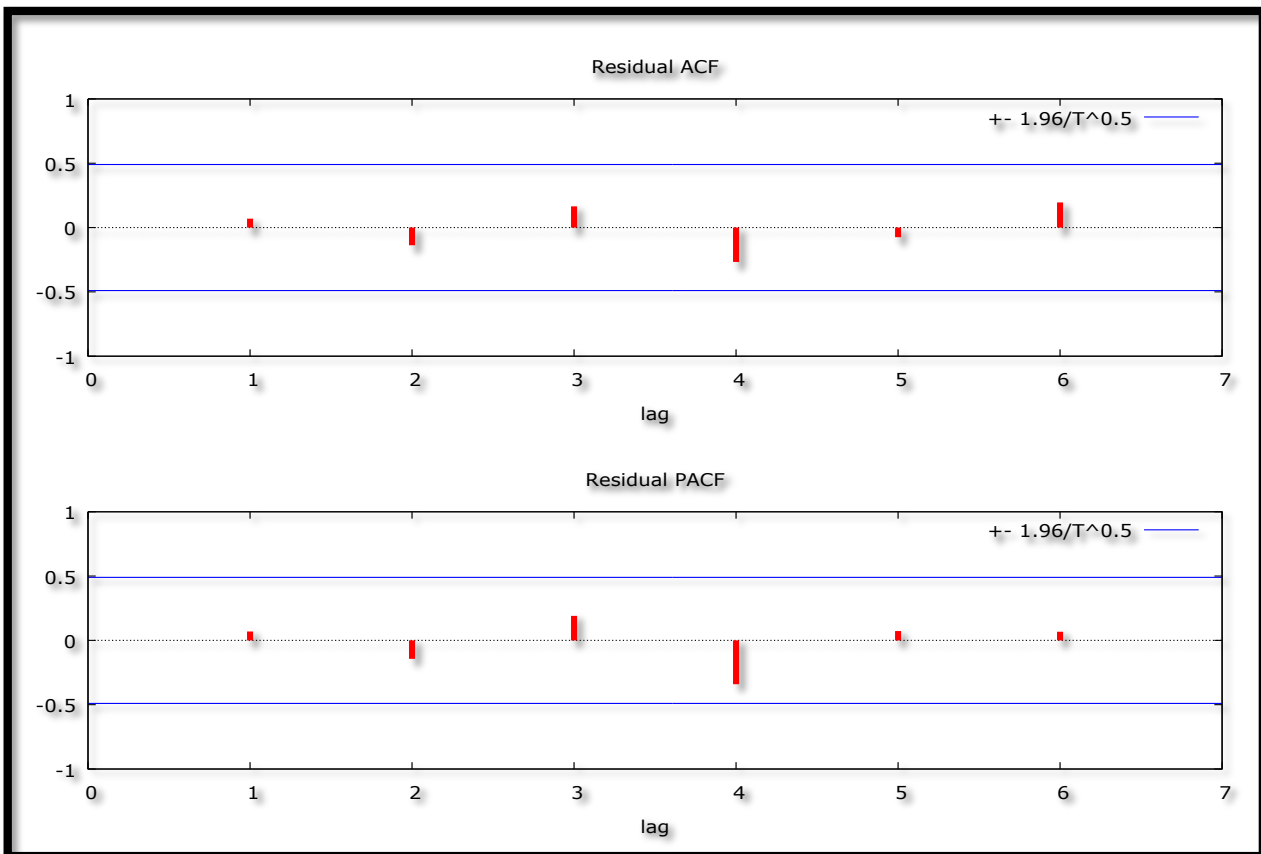


Figure 5: Correlogram of the Residuals

Figure 4 reveals that the estimated model is adequate since ACF and PACF lags are quite short and within the bands. This apparently points to the fact that the “no autocorrelation” assumption is not violated in this research.

**3.8.2 Normality Test of the Residuals of the ARIMA (0, 2, 2) Model:**

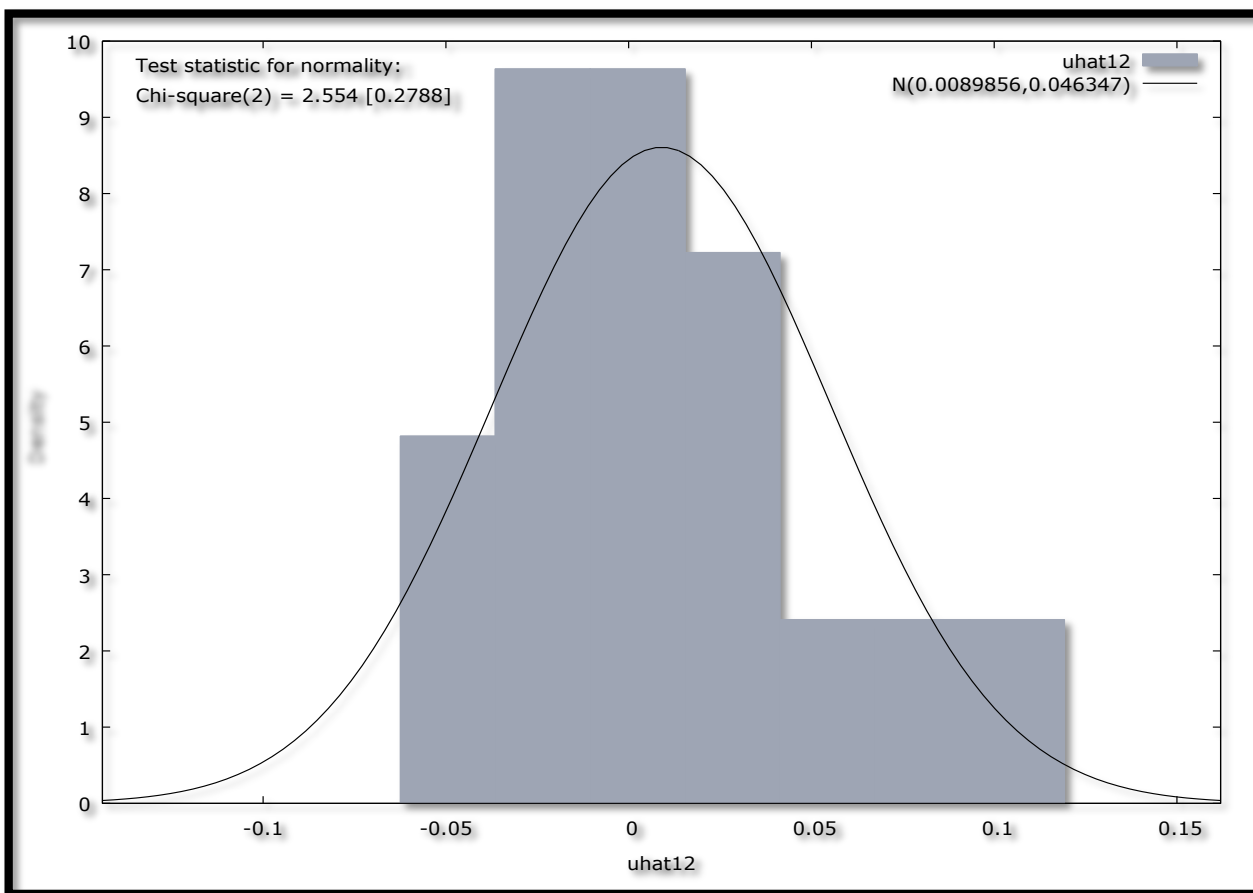


Figure 7: Normality Test

Guided by the insignificance of the probability value of the chi-square statistic, we reject the null hypothesis and conclude that the residuals of the ARIMA (0, 2, 2) model are normally distributed. In line with figure 5 and 6, figure 7 implies that the selected optimal model is stable.

**FINDINGS:**

**4.1 Descriptive Statistics:**

Table 8: Descriptive Statistics

Description	Statistic
Mean	10.844
Median	10.95
Minimum	9.7
Maximum	11.7

As shown in table 8 above, the mean is positive, that is, 10.844. This means that, over the study period, the annual average number of people practicing open defecation in Tanzania is approximately 11% of the total population. The minimum number of people practicing open defecation in Tanzania over the study period is approximately 9.7% of the total population, while the maximum is 11.7% of the total population. In fact, the number of people practicing open defecation in Tanzania has increased over the years from 9.7% in 2000 to 11.7% of the total population in 2017.

**4.2 Results Presentation:**

Table 9: Main Results

<b>ARIMA (0, 2, 2) Model:</b>				
Guided by equation [4], the chosen optimal model, the ARIMA (0, 2, 2) model can be expressed as follows:				
$\Delta^2 Q_t = -0.00623615 - 1.94487\Delta^2 \mu_{t-1} + 0.999999\Delta^2 \mu_{t-2} \dots \dots \dots [5]$				
Variable	Coefficient	Standard Error	z	p-value
constant	-0.00623615	0.000468674	-13.31	0.0000***
$\alpha_1$	-1.94487	0.235766	-8.249	0.0000***
$\alpha_2$	0.999999	0.234154	4.271	0.0000195

Table 9 shows the main results of the ARIMA (0, 2, 2) model.

**Forecast Graph**

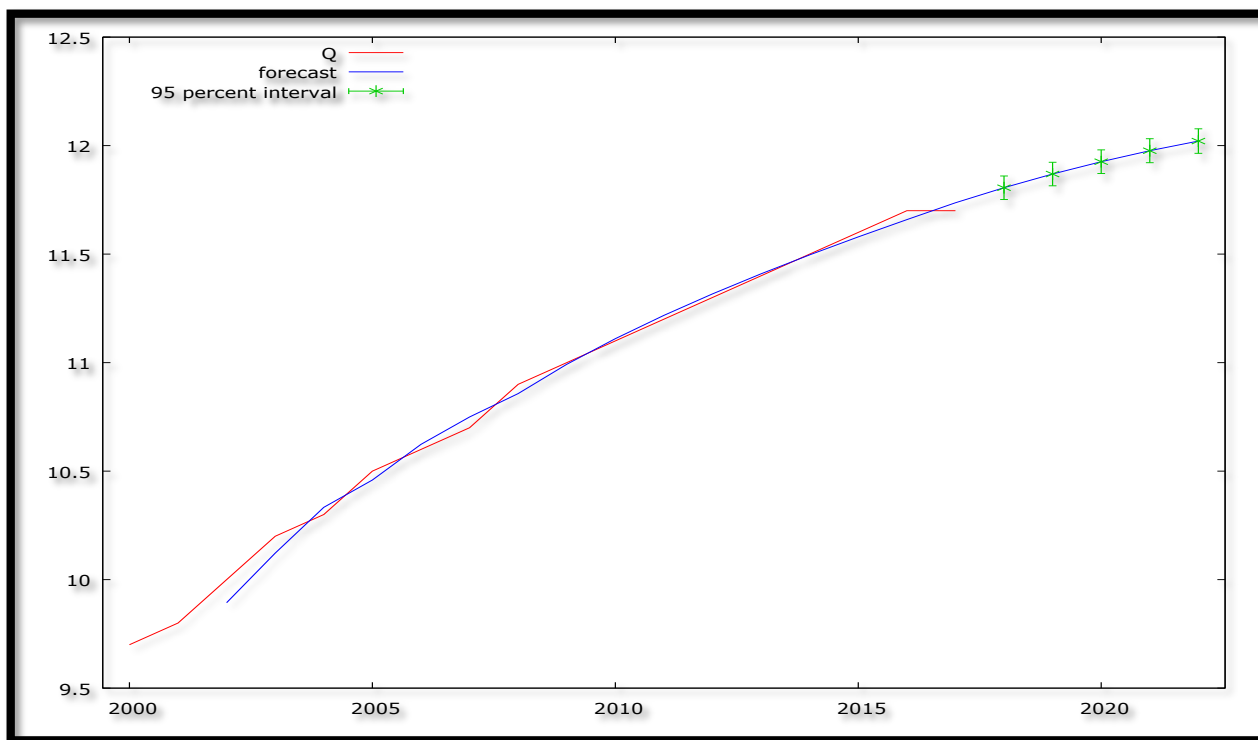


Figure 8: Forecast Graph – In & Out-of-Sample Forecasts

Figure 8 shows the in-and-out-of-sample forecasts of the Q series. The out-of-sample forecasts cover the period 2018 – 2022.

**Predicted Q – Out-of-Sample Forecasts Only**

Table 10: Predicted

Year	Predicted Q	Standard Error	Lower Limit	Upper Limit
2018	11.8	0.03	11.8	11.9
2019	11.9	0.03	11.8	11.9
2020	11.9	0.03	11.9	12.0
2021	12.0	0.03	11.9	12.0
2022	12.0	0.03	12.0	12.1

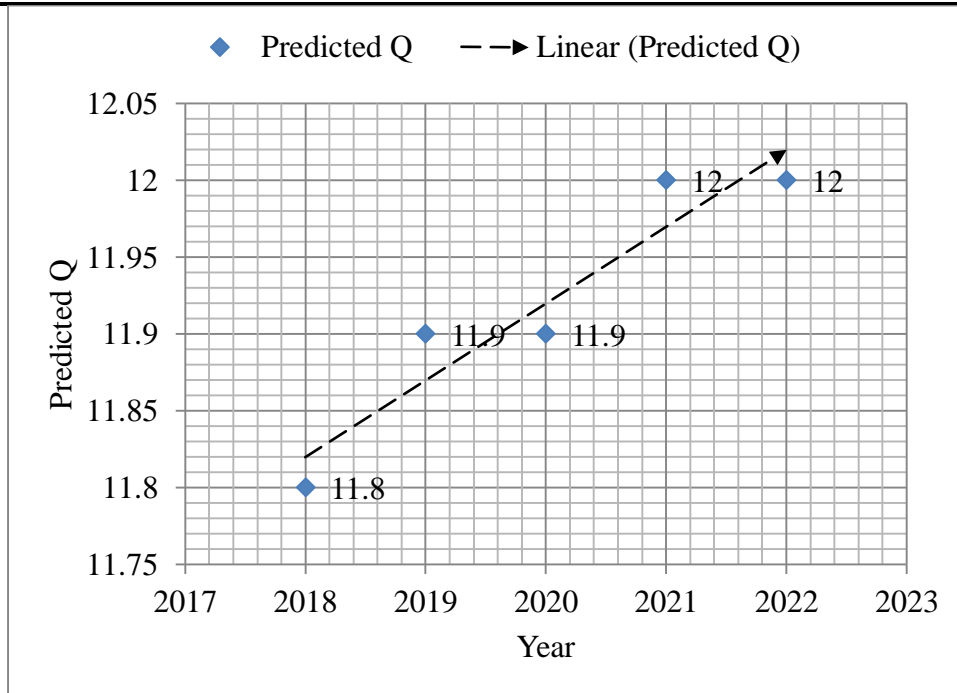


Figure 9: Graphical Analysis of Out-of-Sample Forecasts

Table 10 and figure 9 show the out-of-sample forecasts only. The number of people practicing open defecation in Tanzania is projected to increase from approximately 11.8% in 2017 to 12% of the total population by the year 2022. It is imperative to note that the country's goal of eliminating open defecation by 2021 has already failed. This resurgence in the practice of defecating in the open in Tanzania is not a desirable public health outcome; especially when considering that Tanzania is the 5<sup>th</sup> largest recipient of international aid in water, sanitation and hygiene (WHO, 2012). The results of this study are similar to Nyoni & Nyoni (2020): if policy makers in Tanzania are not careful, in the long run, open defecation levels will be out-of-hand just like what is currently happening in Madagascar and that is not a desirable health outcome. In fact, the ARIMA (0, 2, 2) model is points to serious health implications, especially with regards to various diarrhoeal diseases associated with open defecation. However, it is possible to reserve this projected trajectory, especially if the current Tanzanian government

considers the policy directions suggested below.

#### 4.3 Policy Implications:

- i. The government of Tanzania should, first of all, make toilets a status symbol, especially in rural areas, so that Tanzanians consider toilets to be "rooms of happiness". This can potentially induce behaviour change. In this regard, there is need to intensify the Community-Led Total Sanitation (CLTS) approach along with increased funding for construction of toilets in rural areas. Furthermore Jirani Sanitation Groups (JSG) ought to be supported by both government and non-governmental institutions in the country.
- ii. The government of Tanzania must create more demand for sanitation through teaching the public on the importance of investing in toilets. In this regard, there is need to promote context-specific sanitation technologies in the country.
- iii. There is need for the government of Tanzania to spur a habit of using toilets, and not defecating in the open.

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**CONCLUSION:**

The study shows that the ARIMA (0, 2, 2) model is not only stable but also the most suitable model to forecast the annual number of people practicing open defecation in Tanzania over the period 2018 – 2022. The model predicts resurgence in the annual number of people practicing open defecation in Tanzania. Hence, open defecation can be described as “persistent” in Tanzania. These findings are essential for the government of Tanzania, especially for long-term planning with regards to materializing the much needed open defecation free society and getting rid of diseases associated with pathogens of faecal origin.

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# ARIMA FORECASTING OF THE PREVALENCE OF ANEMIA IN CHILDREN IN YEMEN

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## ABSTRACT:

Using annual time series data on the prevalence of anemia in children under 5 years of age in Yemen from 1990 – 2016, the study makes predictions for the period 2017 – 2025. The study applies the Box-Jenkins ARIMA methodology. The diagnostic ADF tests show that, AY, the series under consideration is an I (2) variable. Based on the AIC, the study presents the ARIMA (1, 2, 0) model as the optimal model. The diagnostic tests further prove beyond any reasonable doubt, that the presented model is stable and its residuals are not serially correlated and are also normally distributed. The results of the study indicate that the prevalence of anemia in children in Yemen will decrease by 0.8% over the period 2017 – 2025. This implies that by 2025, the prevalence of anemia in children in Yemen would have declined to approximately 82.6% from the estimated 83.4% in 2017. However, this is still very high and unacceptable. The study basically recommends that the government of Yemen, with the help from its development partners; ought to intensify nutritional supplementation and food fortification programmers, especially in rural areas.

## INTRODUCTION:

Anemia, especially in children, is one of the most common and prevalent health concerns in the world (WHO, 2002). In fact, anemia affects one-quarter of the world's

population with a significant impact on pre-schooled aged children (6-59 months) as well as pregnant women (McLean et al., 2009). As estimated the global prevalence of anemia is 24.8%, and its prevalence in pre-school aged children and women are 47.4% and 41.8%, respectively (Khan et al., 2019). Anemia is a condition which decreases hemoglobin (Hb) concentration in blood, consequently impeding its capacity to export oxygen. If it occurs among children, it can result in adverse effects on their cognitive developments and immunization abilities against diseases (WHO, 2001; Brabin et al., 2001; McCann & Ames, 2007). These negative impacts may also continue into adulthood and cause low work productivity with effects on the economic productivity which trap the communities at risk of infections in a cycle of poverty, underdevelopment and diseases (Haas & Brownlie, 2001; bleakly, 2007). Anemia is a multi-factorial health problem in which the health factors could be nutritional (iron, folate, and vitamin B12 deficiencies), clinical (infectious diseases such as malaria, helminth infections, TB, HIV/AIDS, and general inflammatory disorders), socioeconomic factors (education levels of parents and low household income), and demographic factors (age, gender and family size) (Hashizume et al., 2003; WHO, 2008; Al-Mekhlafi et al., 2008).

In the Middle East region, the prevalence of anemia is high with approximately 63% of preschool children suffering from iron deficiency anemia (INACG,

2014). The prevalence of anemia in this region varies from 17% to more than 70% among preschool children; from 14% to 42% among adolescents, and from 11% to more than 40% among pregnant women (Bagchi, 2004). Amongst the Middle East countries, Yemen has the highest percentage of people living in poverty (Al-alimi et al., 2018); in fact, more than half of the country's population: more than 25 million people live below the poverty datum line (World Bank, 2010, World Bank, 2014). This situation has contributed to the high prevalence of many nutritional disorders, especially anemia among children (Albiti et al., 2010). Indeed, anemia in children is a serious public health problem in Yemen (Al-alimi et al., 2018). The main goal of this study is to forecast the prevalence of anemia in children under the age of 5 in Yemen over the period 2017 – 2025.

#### **LITERATURE REVIEW:**

Al-Zabedi et al. (2014) carried out a cross-sectional study in order to investigate the prevalence and risk factors of iron deficiency anemia among 187 children aged below 15 years from rural areas in Yemen. Clinical data was collected by measuring hemoglobin (Hb) level, serum iron (SI), serum ferritin (SF), and total iron binding capacity (TIBC). Furthermore, fecal samples were collected and examined for the presence of intestinal parasites. Demographic and socioeconomic data was collected by a pretested questionnaire. The study established that the overall prevalence of anemia and iron deficiency anemia was 48.7% and 34.2%, respectively with iron deficiency anemia representing approximately 70.2% of all anemia cases. Consistently and more recently, Al-alimi et al. (2018) conducted a cross-sectional study in order to determine the prevalence and risk factor of iron deficiency anemia among Yemeni medical students at

Hodeida University. Participants were subjected to different tests including complete blood counts (CBC), serum ferritin (SF), serum iron (SI), and total iron binding capacity (TIBC). Moreover, a questionnaire was designed to collect demographics, food and drink habits, and socioeconomic status. The results of the study showed that overall prevalence of anemia among Yemeni medical students was 30.4%. Both studies did not forecast the prevalence of anemia in Yemen. It is this information gap that this paper seeks to fill in literature, in Yemen. No study has predicted the prevalence of anemia in the country. This research will be the first of its kind and will go a long way in analyzing and understanding trends of childhood anemia in Yemen.

#### **METHODOLOGY:**

##### **3.1 The Box – Jenkins (1970) Methodology:**

The first step towards model selection is to difference the series in order to achieve stationary. Once this process is over, the researcher will then examine the correlogram in order to decide on the appropriate orders of the AR and MA components. It is important to highlight the fact that this procedure (of choosing the AR and MA components) is biased towards the use of personal judgement because there are no clear – cut rules on how to decide on the appropriate AR and MA components. Therefore, experience plays a pivotal role in this regard. The next step is the estimation of the tentative model, after which diagnostic testing shall follow. Diagnostic checking is usually done by generating the set of residuals and testing whether they satisfy the characteristics of a white noise process. If not, there would be need for model re – specification and repetition of the same process; this time from the second stage. The process may go on and on until an appropriate

model is identified (Nyoni, 2018c). This approach will be used to analyze, AY, the series under consideration.

**3.2 The Applied Box – Jenkins ARIMA Model Specification:**

If the sequence  $\Delta^d AY_t$  satisfies an ARMA (p, q) process; then the sequence of  $AY_t$  also satisfies the ARIMA (p, d, q) process such that:

$$\Delta^d AY_t = \sum_{i=1}^p \beta_i \Delta^d L^i AY_t + \sum_{i=1}^q \alpha_i L^i \mu_t + \mu_t \dots \dots [1]$$

where  $\Delta$  is the difference operator, vector  $\beta \in \mathbb{R}^p$  and  $\alpha \in \mathbb{R}^q$ .

**3.3 Data Collection:**

This study is based on annual observations (that is, from 1990 – 2016) on the prevalence of anemia in children under the age of 5 in Yemen [denoted as AY]. Prevalence of anemia in children under 5 years of age in Yemen, refers, to the percentage of children under the age of 5 whose hemoglobin level is less than 110 grams per liter at sea level. Out-of-sample forecasts will cover the period 2016 – 2025. All the data was gathered from the World Bank online database.

**3.4 Diagnostic Tests & Model Evaluation:**

**3.4.1 The ADF Test in Levels:**

Table 1: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
AY	-1.852024	0.3482	-3.724070	@1%	Non-stationary
			-2.986225	@5%	Non-stationary
			-2.632604	@10%	Non-stationary

Table 1 shows that AY is not stationary in levels.

**3.4.2 The ADF Test (at First Differences):**

Table 2: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
$\Delta AY$	-2.173176	0.2202	-3.724070	@1%	Non-stationary
			-2.986225	@5%	Non-stationary
			-2.632604	@10%	Non-stationary

Table 2 indicates that AY is not an I (1) variable.

**3.4.3 The ADF Test (at Second Differences):**

Table 3: with intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
$\Delta^2 AY$	-7.536430	0.0000	-7.37853	@1%	Stationary
			-2.991878	@5%	Stationary
			-2.635542	@10%	Stationary

Table 3 indicates that the series under consideration is an I (2) variable.

**3.4.4 Evaluation of ARIMA models (without a constant):**

Table 4: Evaluation of ARIMA Models (without a constant)

Model	AIC	U	ME	RMSE	MAPE
ARIMA (1, 2, 1)	-52.75106	0.56593	-0.0056838	0.07491	0.074016
ARIMA (1, 2, 0)	<b>-54.58679</b>	0.56793	-0.005679	0.07515	0.073365
ARIMA (1, 2, 2)	-52.0299	0.54996	-0.0056495	0.072993	0.070086
ARIMA (0, 2, 1)	-53.22439	0.58414	-0.0050422	0.077125	0.074976
ARIMA (0, 2, 2)	-54.028	0.55	-0.005664	0.072999	0.070204
ARIMA (2, 2, 0)	-52.84648	0.56474	-0.0056908	0.074769	0.073946
ARIMA (0, 2, 3)	-52.03089	0.54993	-0.0056406	0.072989	0.070021

A model with a lower AIC value is better than the one with a higher AIC value (Nyoni, 2018b). Similarly, the U statistic can be used to find a better model in the sense that it must lie between 0 and 1, of which the closer it is to 0, the better the forecast method (Nyoni, 2018a). In this research paper, only the AIC is used to select the optimal model. Therefore, the ARIMA (1, 2, 0) model is finally chosen.

**3.5 Residual & Stability Tests:**

**3.5.1 Correlogram of the Residuals of the ARIMA (1, 2, 0) Model:**

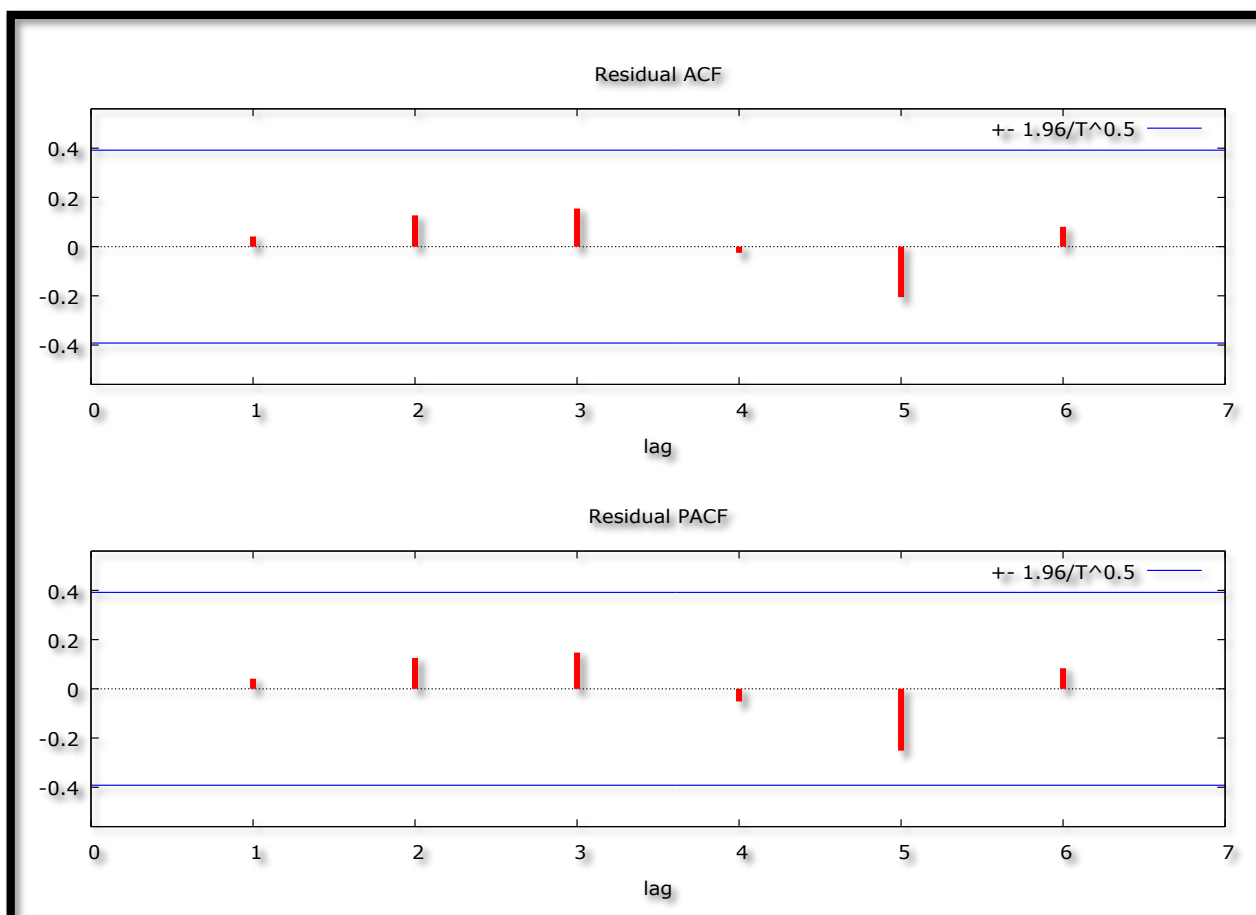


Figure 1: Correlogram of the Residuals

Figure 1 indicates that the estimated optimal ARIMA (1, 2, 0) model is adequate since ACF and PACF lags are quite short and within the bands.

**3.5.2 Stability Test of the ARIMA (1, 2, 0) Model:**

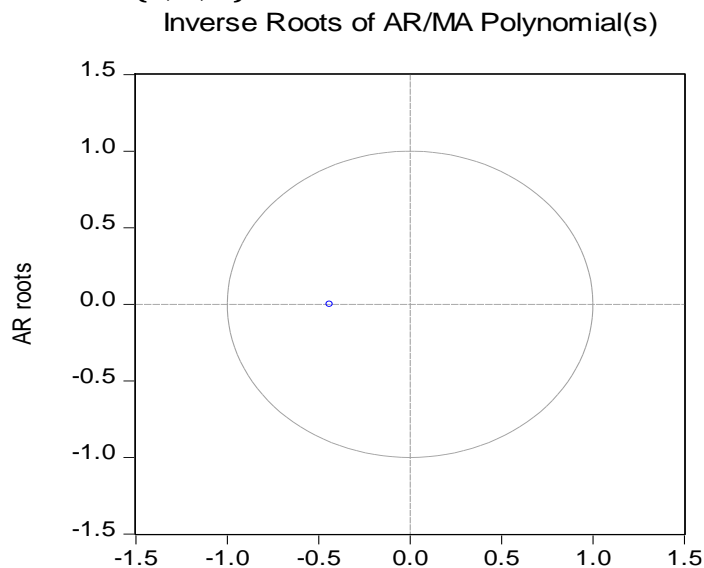


Figure 2: Inverse Roots

Since the AR root lies inside the unit circle, it implies that the estimated ARIMA process is (covariance) stationary; thus confirming that the ARIMA (1, 2, 0) model is really stable and suitable for forecasting the prevalence of anemia in children in Yemen.

**3.5.3 Normality Test of the Residuals of the ARIMA (1, 2, 0) Model:**

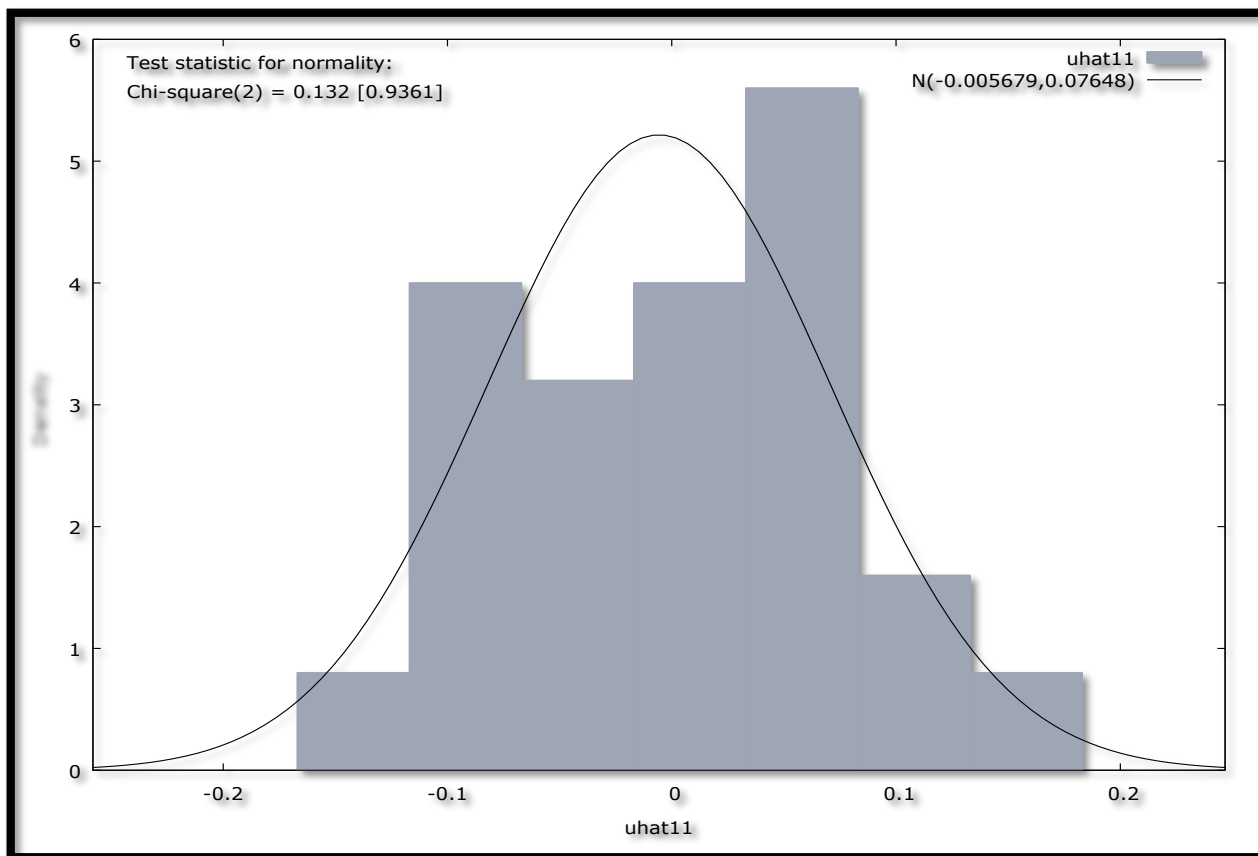


Figure 3: Normality Test

Since the probability value of the chi-square statistic is insignificant, we reject the null hypothesis and conclude that the residuals of the ARIMA (1, 2, 0) model are normally distributed.

**FINDINGS OF THE STUDY:**

**4.1 Results Presentation:**

Table 5: Main Results

<b>ARIMA (1, 2, 0) Model:</b>				
The chosen optimal model, the ARIMA (1, 2, 0) model can be expressed as follows: $\Delta^2AY_t = -0.41974\Delta^2AY_{t-1} \dots \dots \dots [2]$				
Variable	Coefficient	Standard Error	z	p-value
$\beta_1$	-0.41974	0.181124	-2.317	0.0205**

Table 5 shows the main results of the ARIMA (1, 2, 0) model.

**Forecast Graph**

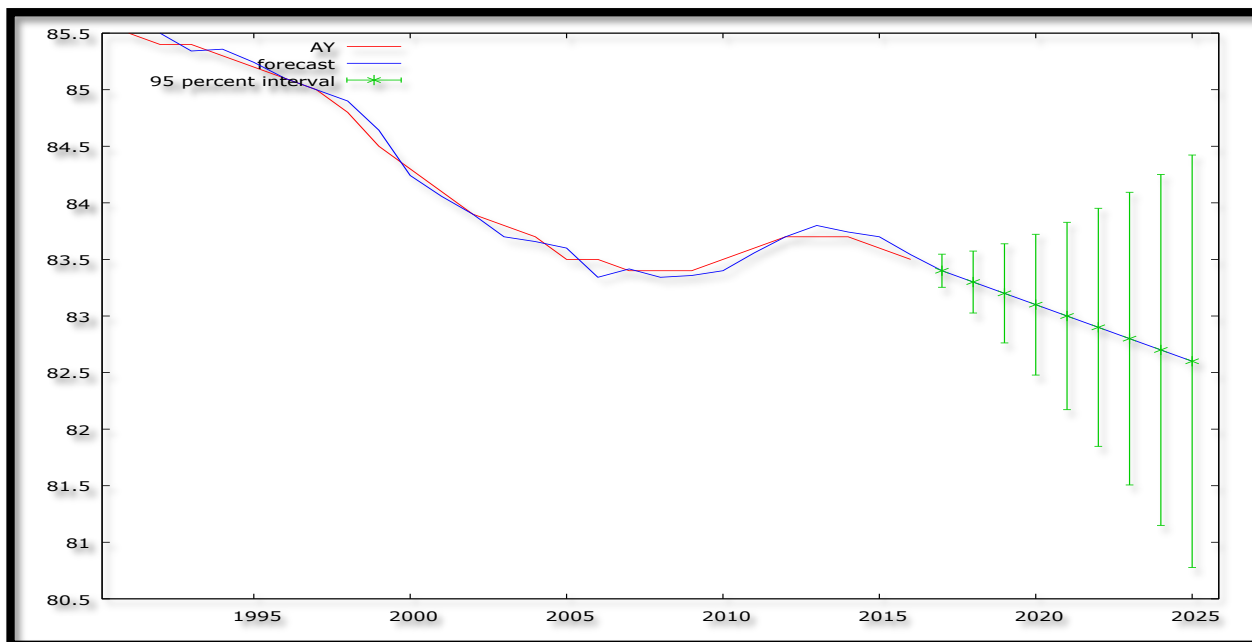


Figure 4: Forecast Graph – In & Out-of-Sample Forecasts

Figure 4 shows the in-and-out-of-sample forecasts of the AY series. The out-of-sample forecasts cover the period 2017 – 2025.

**Predicted AY- Out-of-Sample Forecasts Only**

Table 6: Forecasts of AY

Year	Forecasts	Standard Error	95% Confidence Interval
2017	83.4000	0.0746794	(83.2536, 83.5464)
2018	83.3000	0.139657	(83.0263, 83.5737)
2019	83.2000	0.223507	(82.7619, 83.6381)
2020	83.1000	0.317479	(82.4778, 83.7222)
2021	83.0000	0.422491	(82.1719, 83.8281)
2022	82.9000	0.536756	(81.8480, 83.9520)
2023	82.8000	0.659851	(81.5067, 84.0933)
2024	82.7000	0.791074	(81.1495, 84.2505)
2025	82.6000	0.929991	(80.7773, 84.4227)

Table 6 shows the out-of-sample forecasts only. The prevalence of anemia in children in Yemen is predicted to decline slightly from the estimated 83.4% in 2017 to almost 82.6% in around 2025. Anemia is still highly prevalent and considered as a serious health problem among children in Yemen, especially those who live in rural areas (Al-Zabedi et al., 2014).

#### CONCLUSION:

The study shows that the ARIMA (1, 2, 0) model is not only stable but also the most suitable model to forecast the prevalence of anemia in children in Yemen over the period 2017 – 2025. The model predicts a decrease in the prevalence of anemia in children in Yemen. Unfortunately the projected decline in anemia prevalence is still unacceptably slow and far lagging behind what is expected. This points to the longstanding argument that anemia in children in Yemen is far from being eradicated in the country. The study, however; recommends that the government of Yemen, with the help from its development partners; ought to intensify nutritional supplementation and food fortification programmes, especially in rural areas. In this regard, the government and its supporting non-governmental organizations should provide financial resources and technical support for the rural populace so that people can have income generating projects to sustain their families. There is also, the need for health education programs, especially on healthy diets; throughout the country as this will also help in the fight against anemia. The government of Yemen should also engage on early detection and treatment of TB and HIV in children through TB/HIV collaborative programmes.

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## USING ARTIFICIAL NEURAL NETWORKS FOR PREDICTING CHICKENPOX CASES AT CHITUNGWIZA URBAN DISTRICT IN ZIMBABWE

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### ABSTRACT:

Despite the fact that chickenpox is rarely a fatal disease, it is still a real public health challenge; even in this 21<sup>st</sup> century. The current study used monthly time series data on chickenpox caseloads diagnosed and managed within Chitungwiza urban district in Chitungwiza, Zimbabwe, from January 2012 to December 2019, to predict chickenpox cases over the period January 2020 to December 2021. We applied the well-known ANN (12, 12, 1) model. Residual analysis of this model indicated that the model is stable and thus suitable for forecasting chickenpox case volumes in Chitungwiza urban district over the out-of-sample period. The results of the study reveal that chickenpox cases will generally be on a downwards trajectory in Chitungwiza urban district over the out-of-sample period. This implies that even though the disease is highly contagious, its spread over the out-of-sample is likely to be reduced. The study recommends compulsory varicella-zoster vaccination of all children as well as treatment of all infected persons.

### INTRODUCTION:

Chickenpox is a highly contagious and yet rarely fatal disease varicella-zoster virus (Corberan-Vallet et al., 2018). Its main symptoms are a blister-like rash, itching, tiredness and fever (CDC, 2017). Chickenpox is widely transmitted through touching the fluids

from chickenpox blister. The varicella-zoster virus is spread either by direct contact with a person with active chickenpox or shingles, or by direct contact with clothes or other articles infected with vesicle fluid, saliva, nasal discharge, or by air borne spread of small droplets of infected mucous of fluid (Edward et al., 2014). This disease mainly affects children younger than ten years of age, although older children and adults can also get it. Most people suffer from the disease during childhood and reinfection is very strange (CDC, 2017). In non-vaccinated populations, primary infections tend to occur at a younger age (Gershon, 2008). The occurrence of chickenpox differs according to geographical zones. In temperate countries chickenpox is usually mild, self-limiting infection, affecting pre-school children (Vyse et al., 2004), however, the incidence of chickenpox in these areas is increasing in adolescents and adults (Fairley & Miller, 1996), probably due to increased world travel and economic migration of vulnerable individuals. In many tropical countries, the epidemiology is different, with approximately 60% of adults being immune (Lee, 1998).

### 1.1 OBJECTIVES OF THE STUDY:

- i. To investigate chickenpox cases in Chitungwiza urban district over the period January 2012 to December 2019.
- ii. To forecast chickenpox cases for Chitungwiza urban district over the period January 2020 to December 2021.

iii. To assess whether chickenpox cases are increasing or decreasing for Chitungwiza urban district over the out of sample period.

**RELATED STUDIES:**

In a Tanzanian study, Edward et al. (2014) applied a deterministic model to analyze chickenpox and established that the combination of vaccination and treatment is the most effective way to combat the epidemiology of varicella-zoster virus in Tanzania. Using a deterministic, age-stratified SIR (susceptible-infected-recovered) model, Zibolova et al. (2015) predicted the influence of vaccination administered in different ages on the disease occurrence in different age groups in Slovakia. The study found out that increase of vaccination coverage has a positive impact on the incidence of varicella in Slovakia. Based on ARIMA and SARIMA models, Sierra et al. (2018) forecasted the incidence rate of varicella in Bogota and found out that the SARIMA (3, 0, 1)(1, 0, 1)<sub>12</sub> model was the optimal model for forecasting the incidence of chickenpox in Bogota. Employing a Bayesian stochastic susceptible-infectious-recovered model, Corberan-Vallet et al. (2018) investigated chickenpox transmission in the Valencian community in Spain. The researchers concluded that their model was accurate in

terms of computation of forecasts and prediction intervals and can thus be used in chickenpox surveillance. No similar Zimbabwean study has been done. This paper will be the first of its kind not only Chitungwiza urban district but for the entire country at large and will go a long way in aiding chickenpox surveillance in the country.

**METHODOLOGY:**

The study employed the Artificial Neural Network (ANN) approach in modeling and forecasting monthly chickenpox cases in Chitungwiza urban district. Guided by Fischer & Gopal (1994), who argue that no strict rules exist for the determination of the ANN structure; the study applies the popular ANN (12, 12, 1) model based on the hyperbolic tangent activation function.

**3.1 Data Issues:**

This study is based on newly diagnosed monthly chickenpox cases [all age groups] (referred to as CP series in this study) at Chitungwiza urban district. The data covers the period January 2012 to December 2019 while the out-of-sample forecast covers the period January 2020 to December 2021. All the data employed in this paper was gathered from DHIS2 Information System for Chitungwiza urban district.

**FINDINGS OF THE STUDY:**

**4.1 Descriptive Statistics:**

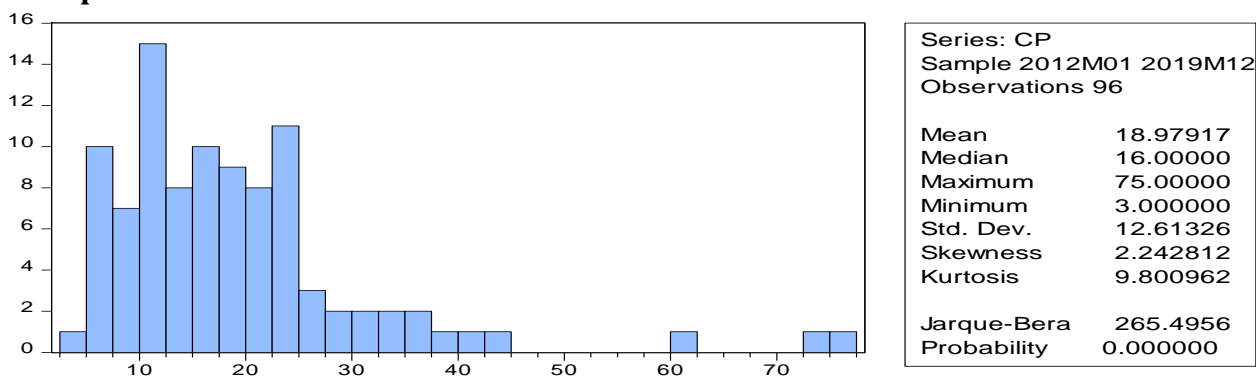


Figure 1: Descriptive statistics

**4.2 ANN Model Summary:**

Table 1: ANN model summary

Variable	CP
Observations	72 (After Adjusting Endpoints)
Neural Network Architecture:	
Input Layer Neurons	12
Hidden Layer Neurons	12
Output Layer Neurons	1
Activation Function	Hyperbolic Tangent Function
Back Propagation Learning:	
Learning Rate	0.005
Momentum	0.05
Criteria:	
Error	0.007456
MSE	2.063442
MAE	5.300921

**Residual Analysis for the Model Presented Above**

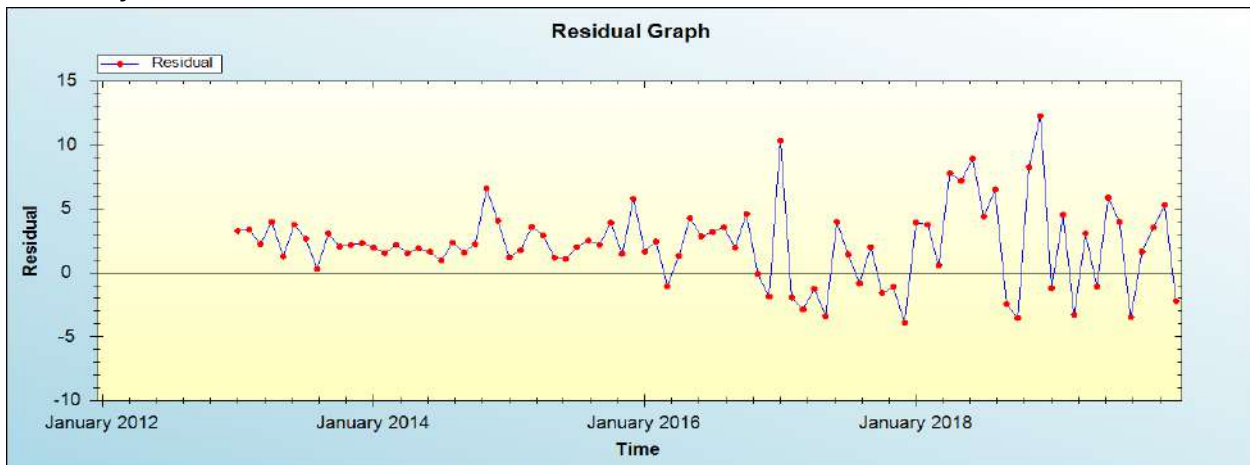


Figure 2: Residual analysis

**In-sample Forecast for CP**

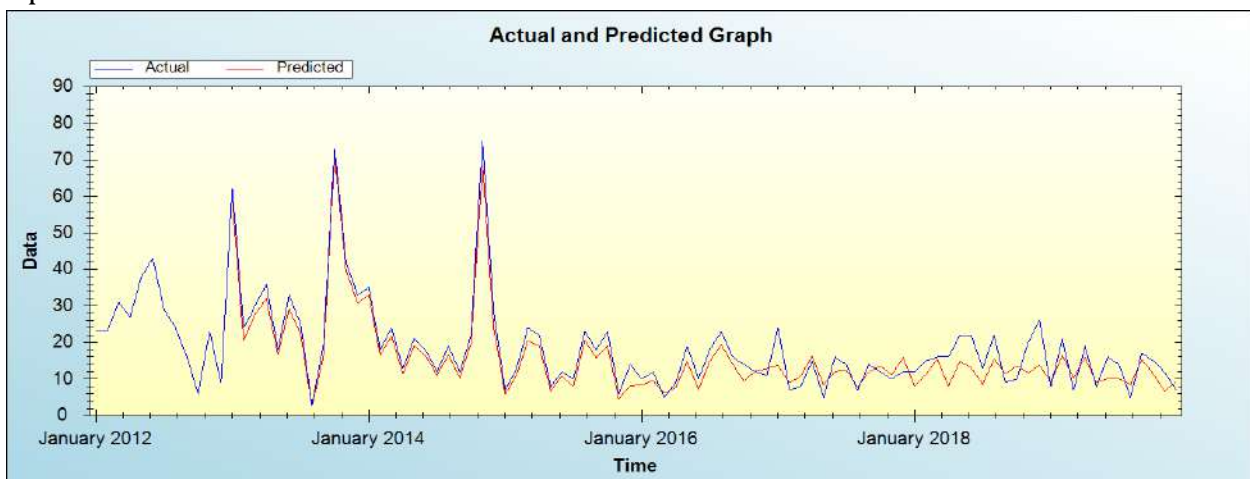


Figure 3: In-sample forecast for the CP series

Out-of-Sample Forecast for CP: Actual and Forecasted Graph

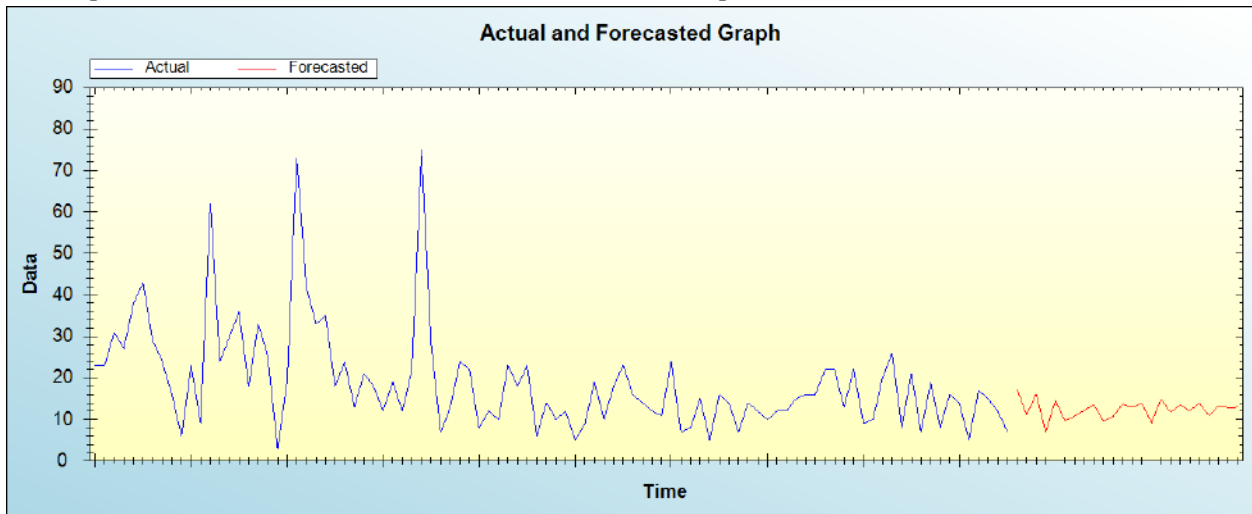


Figure 4: Out-of-sample forecast for CP: actual and forecasted graph

Out-of-Sample Forecast for CP: Forecasts only

Table 2: Tabulated out-of-sample forecasts

Month-Year	Predicted CP
January 2020	17.3706
February 2020	11.1672
March 2020	16.0502
April 2020	6.9121
May 2020	14.5700
June 2020	9.6524
July 2020	10.7893
August 2020	12.1821
September 2020	13.4779
October 2020	9.5943
November 2020	10.7157
December 2020	13.7255
January 2021	12.8820
February 2021	13.8866
March 2021	9.1502
April 2021	14.9019
May 2021	11.7413
June 2021	13.4956
July 2021	12.0141
August 2021	13.9427
September 2021	10.8851
October 2021	13.2707
November 2021	12.7511
December 2021	12.9094

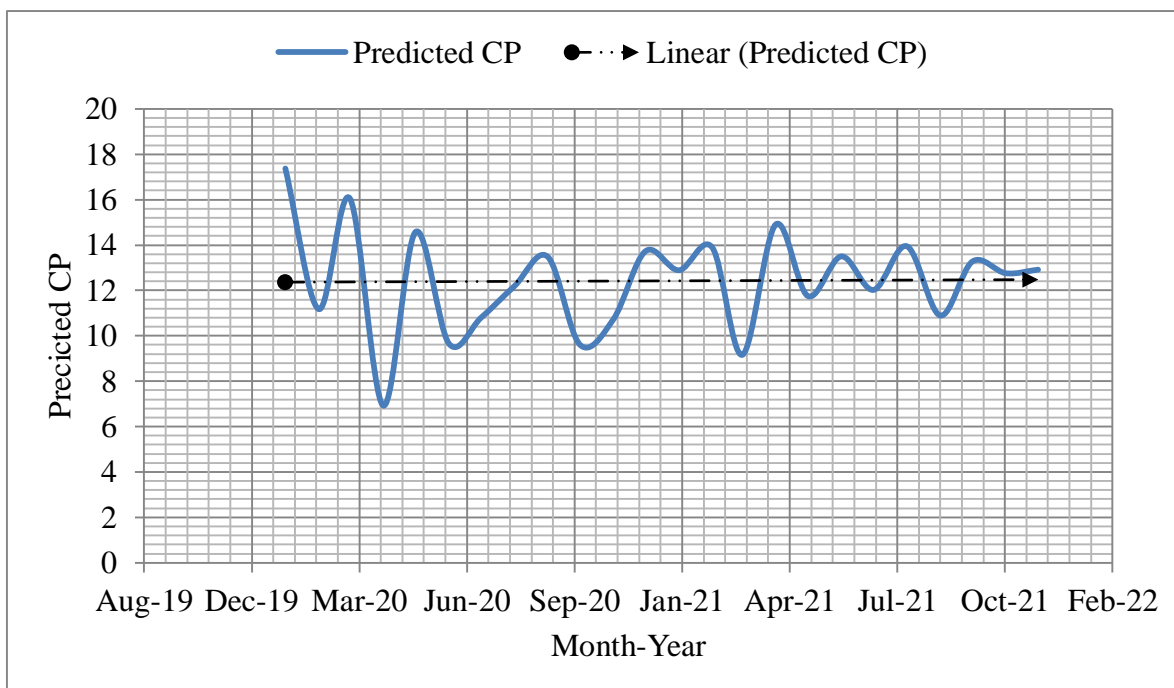


Figure 5: Graphical presentation of out-of-sample forecasts

**4.3 DISCUSSION OF THE RESULTS:**

Figure 1 shows the descriptive statistics of the series under consideration. The most important issue raised in this figure, is that over the period under study, there has been an average of 19 chickenpox patients per month in Chitungwiza urban district. Table 1 is the ANN model summary and basically shows the ANN (12, 12, 1) model, which is just based on the hyperbolic tangent function as its activation function. The “criteria” are the evaluation statistics and they all indicate the model is adequate and acceptable for predicting chickenpox cases for Chitungwiza urban district. Figure 2 shows the residuals of the model and, given that the residuals are as close to zero as possible, the model is stable and acceptable for generating forecasts for Chitungwiza urban district. Figure 3 shows the in-sample forecast of the model and it can be inferred that the model fits well with data. Figure 4, table 2 and figure 5 are out of sample forecasts. The results of the study show that

chickenpox case volumes may, in general, slightly go down over the out-of-sample period.

**5.0 CONCLUSION & RECOMMENDATIONS:**

The study shows that the ANN (12, 12, 1) model is stable and suitable for forecasting chickenpox cases in Chitungwiza urban district in Chitungwiza, Zimbabwe, over the study period. The model predicts a possible slight decline in the incidence of chickenpox in Chitungwiza urban district. The study suggests that there ought to be compulsory varicella-zoster vaccination of all children as well as treatment of all infected persons in Chitungwiza urban district in order to fight-off chickenpox.

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## POLITICAL SYSTEM AND SOVIET REPRESSIONS

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### ABSTRACT:

"Death solves all problems. He is not a man, he is no longer a problem "(Joseph Stalin). Only a quote from this one Soviet leader can show us how repressive, unjust and tyrannical the system called the Soviet Union was. It was a regime that, according to unofficial statistics (unfortunately, there are no accurate statistics, due to concealment and destruction of facts), killed three and a half million people, of which nearly one and a half million people were shot and two million people died in exile.

The political repressions have started in Russia since 1917 and in Georgia since 1921. After that the repressions have been activated and they became even stronger in the mid of 30s. These repressions have only one reason to retain the power in Soviet Union. The strength and cruelty of repressions were defined by several reasons: 1.The majority of people, who really believed in ideology and socialism were disappointed as instead of social, another violence system have been formed that was violating the rights of humans and converting them to blind executives of political system. 2. Oppositions of Stalin's ideology were elicited in Communist party. 3. Old intellectuals, who have never conciliated with Social system. Based on above mentioned reasons the strong opposition idea have been formed that became a threat to Communist party.

Ioseb Stalin and his followers had decided to start political repressions in order to retain the authority of political system. Lavrenti Beria was the main

conductor of repressions in Georgia, who first was the leader of Transcaucasia Federative Republic, later, the leader of Georgian Communist Organization and was determining every aspect by himself.

The 1930s' repressions had toughed all social classes and status, especially intellectuals had suffered. The victims of such kind of injustice became eminent people: Mikheil Javakhishvili, Evgeni Mikeladze, Vakhtang Kotetishvili, Paolo Iashvili, Titsian Tabidze and others. Most of them were imprisoned or banished for several years. Political repressions had touched Georgian Bolsheviks as well. Mikheil Kakhiani, Mamia Orakhelashvili, Levan Gogoberidze, Budu Mdivani, Mikheil Okudjava, Samson Mamulia and others were put to death.

Soviet Russia had started ruining Georgia's economic in order to avert democracy controlled aspects in the country, suppress anti-Russian and anti-social propagandas' elements, and annihilate the Georgians desire to reconstruct independence and had implemented social ideology. Russia had used Georgian Bolsheviks against their country to complete fulfilling their plans. Social ideology had used all the way and political repression had been conducted even against the people who had fought for country's independence, those who had left their homes and fought against Bolsheviks from the forests, those who were ready to rectify themselves to the country's prosperity. The Georgian people's struggle for independence had become pattern of

selflessness, morality and physical survival. Bolsheviks had annihilated not only those people who fought against them but their family members: women, elders and children as well. Russian and Georgian bolshevism had become one unit and its main goal was to depress the society, abolish free ideas and close down dignity of people.

National aspiration and morality was trampled down under the dictate ideology. Churches, as standbys of national movement, had been ruined. Government was trying to split population from the church as it was the main support for national movement. That's why they tried to inculcate odium against the churches and clergymen, and they wanted to increase skepticism and disbelief in population. They used to abolish temples and acted severely against the church services. In this way Georgians spiritual shelter was destroyed. Cultural heritage and unique Georgian fresco were destroyed by members of the Young Communist League. Cattle and tools were kept in the churches. The cultural heritage that was saved and rescued from conquerors had been purposefully ruined by Georgian and Russian Bolsheviks. The 1920s was the period when the social regime was obtained. National, moral and religious value was irrelevant for Social regime. Atheism became the main ruler of the country.

**KEYWORDS:** Mikheil Javakhishvili, Lavrenti Beria, total regime, personality cults.

#### **INTRODUCTION:**

After February, 1921, a new keen political and severe era in Georgia which is known as Social Repressions had started. Social regime was based on total regime that was destroying everything connected to the ethnic,

religious, and national aspiration. The characteristics of total regime were:

1. Clearly defined ideology that covered all life aspects. The whole society was obeying to this ideology;
2. One political party is the controller that is ruled by the leader. The leader's cult is surrounded by the supporters. The party's aim is subordination of people, especially the youths. Other parties are banned and legislation is under executive authorities;
3. Every individual person officially must obey to the country's interests. Pressure is revealed by party's or secret police's physical or psychological terror. Official ideology is trying to abolish all cultural differences and uses education, literature, art, and music as the main tool for the ideology.

#### **CONTEXT:**

The Georgian people have felt the cruelty of soviet terror from the beginning of Soviet regime. After the occupation soviet authorities had decided to leave the Eleventh red army's divisions in the occupied territories. Soviet Russia had made such kind of announcement that: "Russia's Red Army is an advanced guard of international revolutionary proletariats against the international imperialism, and its existence in Georgian territory is a friendly support" [5, 379]. Soviet Russia was justifying the Red Army's being in Georgia in this way. In reality," Russian army actually became the single executive of the country from the very beginning. The soldiers of the army were immoral, unstable, famished and undressed. All these aspects together served to increase crime and offence in the country. [7,9]. Georgia was occupied by the army. Some eye-witnesses have described several violent acts committed by the Red Army. They were mainly replaced in Georgian without any permission so as all the



expenses should have been covered by peasants. Nobody could resist as Social authorities savaged every dissentient and conducted the repressions. Just one example is enough to prove how cruel was the Soviet dictation and its ideology. "Russians have invaded Khevsureti villages and started to savage locals. Captivated injured people have been killed or beheaded immediately. They had burnt down, robbed and profaned icons and churches. "International" divisions from – Fkhitu were especially defined for their cruelty. They had robbed and burned down villages such as: Buchukuri, Ukanakho, Ubani, Akusho, Kimkhi, and Saaragvos villages as well." [9, 67].

Soviet authority had savaged the rebellions of August, 1924 insurrection and the uprising failed. This uprising was followed by a lot of blood and victims but that was the visible protest of Georgian people against the occupants. After the rebellions failure in 1924, Communist regime became even severe and the national movement had been extinguished for a long time. The authorities had started to persecute the leaders' family members. Qaqutsa Choloyashvili's family was especially sustained as his wife and two infant children had been banished for several years. His father-in-law and some other relatives had been sentenced to be shot. "Georgian nobles, who were the intellectual elite of the country, became the main threat for Bolshevik regime in Georgia." [6,169]. The participants, supporters, and suspects were shot with out of any investigations and judgments. The punishment actions had been conducted by the specially organized group of people who were known as "triads". One of the proofs of their action was severely shot people in Zestafoni train carriages. According to I. Talaxadze,( leader of Kutaisi department), five carriages were riddled by machine-gun and all the prisoners were killed. After shooting the doors of the carriages

were opened and the decedents were thrown into the hole which was prepared beforehand. "The hole was not big enough for the whole decedents and the occupants had to cover it with lots of ground in order to hide all the dead bodies. That place was poured with lime in case to prevent epidemic and the guards were put there so as the relatives could not steal the dead bodies of their closed people.[10, 3].

Nobody knows for sure how many people were killed by Soviet authorities during the repressions in 1921-1924. Sergo Orjonikidze announced in the Communist Party's plenary session in October, 1924 that: "We have conducted fusillade. Maybe it was wrong but nothing could be done now... Orjonikidze named the wrong number (980) of dead people. He as well made a slip in speaking that "he was sorry" as fusillades had been conducted in Georgia. The nobilities of owners, scholars, clergymen, and peasants were annihilated." [8,2].

The "Great Terror" of 1937-1938 is a particularly painful topic in the history of our country in the twentieth century. In Georgia, the state repressions of the 1930s affected tens of thousands of people and probably left no family where this tragic event did not leave its mark. Convicts were sentenced to death by firing squad in several cities: Tbilisi, Kutaisi, Batumi and Sokhumi.

The new wave of terror has started in the world and in Soviet Union in the mid of 30s. That was the period of mess breakdown which turned into massacres. There were lots of people with poor education, such as peasants, workmen, laborers who were accused with absurd charge and sentenced to prisons.

After several decades the procurators have declared: "According to the penal action's investigation those people were sentenced illegally and the verdict should be abolished."

It was the fear of individuals, the fear of difference and the fear of freedom that forced Soviet leaders to use the most brutal methods to somehow maintain their system. The main goal for them was to eliminate and destroy the intellectual masses that spread a different opinion in the society. Their first blow will be dealt to the most educated layer of the country, because only freedom and education are the weapons that will destroy all totalitarian systems. The Soviet leaders were well aware of this, they tried to change the consciousness of the nation, rewrite history and thus maintain power. "He who rules the past rules the future; he who rules the present rules the past" (Orwell). However, despite the intellectual stalemate, the Soviet Union still failed to compete with the capitalist world because they failed to understand that man is by nature a rational being and that freedom by nature is a right whose violation will never end well for the totalitarian. It is impossible to build a civilization on fear, hatred and cruelty, it cannot exist.

In 1937-1938 Stalin conducted the cruelest actions as according to his order lots of innocent people were sentenced immensely.

Here is an abstract from Ilamaz Mitsishvili's letter -"Executioner and Victim": "It's hard to believe that Georgia's national spiritual beauty is laid down to be shot by Stalin, but that is a fact. Based on his declarations some of our society's outstanding people had been shot. Here are some of them: Memed Abashidze, Sergi Amaglobeli, Sandro Akhmeteli, Gertsen Baazovi, Giorgi Eliava, Vakhtang Kotetishvili, Evgeni Mikeladze, David Oniani, Bidzina Ramishvili, Titsian Tabidze, Dimitri Shevardnadze, Shalva Tsintsadze, Grigol Tsereteli, Vladimer Djikia, The Okudjivas, Oraxelashvilis and others." [11, 3-4]

Moreover, some members of Political Bureau were sentenced to death without any judgment or evidence.

And the last, Stalin and Molotov signed the verdict for Mikheil Javakhishvili to be shot on September 15, 1937. It is quite possible that Molotove had never heard about Mikheil Javakhishvili, but it is hard to believe that Stalin had no idea who Mikheil Javakhishvili was. The only explanation to this fact is that Stalin was acting like any dictators, and he was establishing to slavery obeying society. He was trying to establish thralldom by repressions and obedience by annihilation of scholars. "

Here is the list of people whose names are enlisted in Stali's list to be shot. This list was displayed on [4 [http:// Stalin.memo.ru/--- Расстрельные списки](http://Stalin.memo.ru/---Расстрельные списки)].

The 1937 massacre perpetrated by Stalin throughout the entire Soviet Empire was the most ruthless and vicious act ever committed by any tyrant in human history. The accusation fabricated by Stalin and the mob around him that a large circle of "traitors and pests" were acting to overthrow the Soviet system, be shot unpunished and unjustly, or buried millions of completely innocent people in the ice of Siberia - especially among high-ranking workers A peasant who received little vote for unjust wages, unpaid labor for tax, and unjust political status.

#### **CONCLUSION:**

1. Bolshevik Russia had its own problems- if it couldn't escape from the World War I, it would lose the power. That's why, Lenin had betrayed to his ambassador who was going to attend Brest-Litovsk summit that he would rather cede the Ukraine in order to sign treaty in 1918.
2. A few in number Finland had benefited out of this problem and get away from Soviet empire. And what did we do? Our social-

democratic leader Noe Djordania had not formed the army. This is the first thing which the newly formed country's leader should have done for independence.

3. After several years, when social-democrats decided to get rid of Russia, Stalin let them act freely and then not only they but their families' members were shot. And that was Stalin's idea.
4. In February, 1921 Russia's Bolshevik government conducted vandal political action, conquered independent Georgia and established Communism regime. The Georgian's have resisted not only their enemy but he most inhumane Bolshevik total regime in mankind history.
5. After occupation and annexation Russia did not withdraw its army from Georgian territory. The army was robbing the population and in case of resistance they even used to kill them.
6. Anti-social protests have started in Svaneti, Khevsureti, Kakheti and other places, but each of them was defeated. By means of these uprisings Georgian people had shown that they were not going to give up.
7. Soviet ideological regime which was trying to ruin independent thoughts and establish the regime that has existed for seventy years changed the life of many people. People drugged with bolshevism have committed denunciation, illegal arresting, deportation, execution.
8. Georgian country was in difficult situation. On the one hand it was occupied and annexed by Soviet Russia and on the other hand the forced ideology which followers were local Georgian Bolsheviks.

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