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CONTENTS

S.NO	TITLE	AUTHOR/S	PAGES
1	A STUDY ON TRAINING NEEDS ANALYSIS OF NURSES, IN A MULTI-SPECIALITY HOSPITAL, COIMBATORE	Dr.V.Uma R. Haritha	1-5
2	IMPACT OF VISUAL ARTS IN HOSPITALITY INDUSTRY AS A MEAN OF ECONOMICS STABILITY IN NIGERIA	Dr. Michael Olusola Ogunmola Olubukola Daniel	6-11
3	SMART TRAVEL PLAN GENERATION SYSTEM USING IMAGE CLASSIFICATION APPROACH	Kavya V Hariharan Shanmugasundaram	12-17
4	THE IMPORTANCE OF LISTENING SKILLS IN TEACHING RUSSIAN LANGUAGE TO THE CADETS OF MILITARY INSTITUTE	Utenbayeva Guljazira Muxtarovna	18-21
5	IMPROVING THE SOLUTION OF NON-STANDARD PROBLEMS IN SCHOOL PHYSICS LESSONS	Raimov Gayrat Fayzullayevich	22-29
6	DRAMATIC EFFECTS IN THE SHORT STORIES OF K. RAKHMANOV	Seytbekov Adilbay Batirbekovich	30-33
7	THE INVESTIGATION OF TECHNOLOGICAL AND PHYSICO-CHEMICAL CHARACTERISTICS OF ACTIVE SUBSTANCES AND THEIR GRANULATES FOR THE DEVELOPMENT COMBINED DRUG "ANALPHENON"	Yunusova Kholida Mannanovna Ravshanova Sevara Ergashevna	34-37
8	MODERN DEVELOPMENT OF THE WORDS IN UZBEK LANGUAGE	Dilnoza Yuldasheva(PhD)	38-40
9	LINGUISTIC FEATURES OF THE SCIENTIFIC STYLISTICS OF THE ENGLISH LANGUAGE	Inomov Urol Mamaziyayev Zoxid Berdiyev Sharif	41-43
10	THE ROLE OF TEACHING PHRASAL VERBS WITH ADVERBIAL COMPONENT IN ENGLISH	Muminova Surayo Akramovna Fayzullaeva Nasiba Djurakulovna Salahitdinova Firuza Fazlitdinova	44-48
11	THE ROLE OF ADVERTISING IN ECONOMICS AND ITS PRAGMATIC ANALYSIS	Yuldasheva Saodat Xalmurzayevna, PhD Yuldashev Sherzod Zairjanovich	49-51
12	COMPARATIVE ASPECTS OF ENGLISH AND RUSSIAN PROVERBS	Rasulova Dilbar Rasulovna Oripova Sarvinoz Narzullayevna	52-54
13	DETERMINATION OF CONTACT PRESSURE IN A STAMP	Fayzimatov Shukhrat Numanovich Yusupov Sardorbek Marufovich	55-59
14	TEACHING NATIONAL CRAFTS IN SCHOOLS	Mukumova Feruza Khudoykulovna	60-61
15	THE ROLE OF TEACHERS IN THE FORMATION OF CIVIC CULTURE AND OPPORTUNITIES TO IMPROVE CIVIC CULTURE AMONG THE YOUTH	Sobirov Shakhruz Khalil ugli	62-64
16	MONETARY WELFARE PROVISION OF	Lalrinkima	65-70

	PUBLIC HOSPITALS IN MIZORAM		
17	THE ROLE OF MASS SPORTS IN THE UPBRINGING OF A HARMONIOUSLY DEVELOPED GENERATION	Askarov Mukhriddin Alisherovich Oripova Nigora Makhsutali qizi Askarov Akhliddin Alisher ugli	71-73
18	TEACHING ENGLISH LANGUAGE TO BEGINNERS	Makhmudova Zulhumor Ikromjon qizi Javohir Norkulov Sodiq o'g'li Bakhriddinova Zarnigor Bahodir qizi	74-77
19	THE ADVANTAGES OF USING INFORMATION AND COMMUNICATION TECHNOLOGIES IN TEACHING RUSSIAN AS A FOREIGN LANGUAGE TO THE CADETS OF THE NATIONAL GUARD INSTITUTE	Yoqubova Indira Rustam qizi	78-80
20	INVENTORY MANAGEMENT AND PROFITABILITY OF LISTED HOSPITALITY COMPANIES IN NIGERIA	Ibo Sunday Adekoya Akindutire Solomon Olumayokun	81-89
21	COMPATIBILITY IN THE WISDOM OF ALISHER NAVOI	Yusupova Mahliyo	90-91
22	INTERNAL AND EXTERNAL FACTORS OF DIGITAL ECONOMY DEVELOPMENT IN THE COUNTRY	Rustamov Dostonbek Jamshid o'g'li Yusupjonova Shahzoda Elmurod qizi Ametov Jonibek Yo'ldosh O'g'li	92-95
23	QUALITATIVE AND ORGANOLEPTIC PROPERTIES OF suya PRODUCED FROM SELECTED MUSCLES OF NIGERIAN LOCAL DUCKS RAISED IN DIFFERENT LOCATIONS OF EKITI STATE	Alamuoye Oluwatoyin Folake Ajibua-jesus Oluwaseun	96-102
24	EFFECT OF GOOGLE CLASSROOM ON INTEREST AND PERFORMANCE OF TRAINEE TEACHERS IN COMPUTER EDUCATION	Anekwe, Josephine Uzoamaka (Ph.D.) Amadi, Uchekukwu	103-113
25	NOCTUOID MOTHS (LEPIDOPTERA, NOCTUOIDEA) OF THE SOUTHERN PART OF KARAKALPAKSTAN	Bekchanov Khudaybergan Urinovich Bekchanova Mohira Khudaybergan qizi	114-118
26	ISSUES OF JUSTICE AND RATIONAL GOVERNANCE OF THE STATE IN THE VIEWS OF MUHAMMAD RIZA OGAHI	Ahmedova Ma'rifat Abdullaevna	119-120
27	THE CAUSAL RELATIONSHIP BETWEEN INTERNATIONAL TRADE AND ECONOMIC GROWTH; THE CASE OF 10 ECONOMICALLY STABLE AFRICAN COUNTRIES	Prof. Li Fang Lin Blessed Kwasi Adjei Bernard Kwame Matteer	121-131
28	METHODS FOR CLEANING Tp-30 TURBINE OIL FROM UNWANTED COMPONENTS	Khojiyeva Ruxsora Baxtiyorovna	132-135
29	ABOUT THE HISTORY OF LIBRARIANSHIP IN KARAKALPAKSTAN	Reymbaev Rustem Sarsenbaevich	136-140
30	THE ROLE AND PLACE OF ENGLISH IN INTERNATIONAL COMMUNICATION	Namozova Dilnoza Berdimurotovna	141-144
31	ANTI-FORENSICS: COUNTERING SENSOR NOISE CAMERA IDENTIFICATION	Nikhith Suvarna	145-151
32	FEATURES OF INVESTMENT ACTIVITY IN THE CONSTRUCTION FIELD OF UZBEKISTAN IN MODERN ECONOMIC CONDITIONS	Mirisaev Abdurakhman Abdulahatovich Masharifov Ravshan Bakhadir's son Raxmanov Muhammad Bakhtiyor's son	152-156

33	FROM THE HISTORY OF TRANSFORMATION PROCESSES OF IRRIGATION SYSTEM IN THE FERGHANA VALLEY DURING INDEPENDENT PERIOD	Rakhmonov Golib Akhmadjonovich	157-159
34	THE HISTORY OF CRIMINAL PROCEEDINGS IN UZBEKISTAN	Azizkhon Pulatov	160-164
35	ENHANCING ACCELERATED NATIONAL DEVELOPMENT THROUGH VOCATIONAL AND TECHNICAL EDUCATION IN TERTIARY INSTITUTION	Ayeni, Olapade Grace Olowe, Modupe Oluwatoyin	165-171
36	OPERATIONAL STRATEGIES AND MANAGEMENT OF KFC: AN ENQUIRY	Shah Mujahid Uddin	172-179
37	ATHLETICS AND ITS BASIC RULES	Usmanov Bahodir Khabibullayevich	180-183
38	ISSUES OF PHYSICAL AND SPIRITUAL UNITY IN DEFINING A HEALTHY LIFESTYLE	Karimov Zafar Atobaevich	184-185
39	INFORMALITY OF WORK, POVERTY AND FEMINIZATION OF WORKFORCE: IMPLICATIONS OF NEOLIBERALISM	Dr. Kapou Malakar	186-192
40	EXPERIMENTAL INVESTIGATION ON CONVENTIONAL CONCRETE BY PARTIAL REPLACEMENT OF CEMENT WITH GLASS POWDER	Gayathri R V Mahesh S M	193-197
41	CLASSIFICATION OF HEAD AND NECK CANCER TYPES USING MACHINE LEARNING ALGORITHM	Prof O. Olabode Prof A. O. Adetunmbi Folake Akinbohun Dr Ambrose Akinbohun	198-205
42	GENRE PREDICTION FOR MUSIC RECOMMENDATION USING MACHINE LEARNING	Arpit Seth	206-210
43	EFFECT OF CASH TURNOVER, RECEIVABLES TURNOVER AND INVENTORY TURNOVER ON THE LEVEL OF LIQUIDITY	Siti Sarpingah	211-220
44	A STUDY OF PRIMARY SCHOOL MERGER PROGRAMME IN ODISHA	Dr. Kishora Kumar Bedanta	221-224
45	SPECIFICITY OF USING ICT IN TECHING THE RUSSIAN LANGUAGE AND RUSSIAN LITERATURE	Annayeva Lola Rasulovna	225-227
46	THE EFFECT OF PHYSIOLOGICAL ACTIVE SUBSTANCES ON FUNGAL DISEASES OF WHEAT	Ablakulova N.A	228-231
47	NETWORK ASSAILABLE ANALYSIS THROUGH LOG RETRIEVAL AND DEPLOYING SECURITY MECHANISMS OFF PREMISES	Mr. P R Kuber Gupta	232-237
48	A STUDY OF FSN ANALYSIS FOR INVENTORY MANAGEMENT IN KORADI THERMAL POWER STATION (KTPS), MAHARASHTRA	Sonali S.Wasnik Chitra Gidwani	238-241
49	DEVELOPMENT OF TOURISM IN CENTRAL ASIA (ON THE EXAMPLE OF UZBEKISTAN AND KAZAKHSTAN)	Atadjanova Sayyora Melisovna	242-245
50	IMPLICATION IN THE ARTISTIC TEXT	Madaminova Muhabbat Sotvoldievna	246-248
51	PRE-PAID SMART WATER OVER CLOUD COMPUTING AND WIRELESS SENSOR NETWORK	Kavyashree S	249-257

52	FOUR SWITCH THREE PHASE SEPIC INVERTER WITH FRONT END BOOST CONVERTER	Raheema V Fasil T. Mohammed	258-262
53	A NEW FIFTEEN LEVEL INVERTER TOPOLOGY WITH LESSER HARMONICS AND LESSER NUMBER OF SWITCHES	Ayyappa Srinivasan M G Manickam.P Balasubramanian M	263-267
54	LINGUISTIC WORLD IMAGE IN MEDIASPACE	Teshabayeva Dilfuza Muminovna Begmatova Sokhiba Mustfoevna	268-270
55	THE CONNECTION OF LANGUAGE WITH NATIONAL MENTALITY	Mamaraimova Ugiloy Tojimurodovna	271-274
56	THE WORK «ASOSU-L-BALOG'A» BY MAKHMUD ZAMAXSHAR'I IS AS SOURCE OF PHRASEOLOGY	Nigora SULAYMONOVA	275-278
57	THE EFFECT OF VARIOUS COMPOSTS ON SOIL PROPERTIES AND COTTON YIELD	Sayimbetov Alisher Elemesova Nargiza Isataevna	279-282
58	AN EMPIRICAL ANALYSIS OF THE EFFECTS OF DEMONETIZATION ON KOLKATA	Dr. Kushal De Dr. Soheli Ghose	283-294
59	SUPPLY CHAIN AND LOGISTICS MANAGEMENT: AN ENTERPRISE APPLICATION OVERVIEW	Anuj Modgil Ankit Jaiswal Perna Keshav Singh Urvashi Baliyan Prabhas Wajpe Prof. Vidhya Srinivas	295-301
60	AN OPENCV BASED EFFICIENT FACE RECOGNIZATION APPROACH FOR AUTOMATED ATTENDANCE UPDATION	Brahmananda Reddy D P R Kuber Gupta	302-305
61	STUDY OF HEALTHY NUTRITION IN PATIENTS WITH CHRONIC HEPATITIS AND CHIRROSIS OF THE LIVER	Nodira Shanazarovna Shamuratova	306-308
62	WIRELESS INFANT MONITORING SYSTEM BASED ON VIDEO OBJECT TRACKING AND ENVIRONMENTAL SENSORS	Ms. Maitrayee Mahanta	309-312
63	INTERNETWORKING OF SOLAR ENERGY USING ARDUINO BASED TRACKING SYSTEM	Ms. Aparajita Gogoi	313-315
64	PREDICTIVE ANALYSIS FOR LEUKEMIA SURVIVAL USING AI BOTS	G. V. Vaishnavi	316-318
65	THE FEATURE OF PRAGMATICS AND THE PRAGMATIC ANALYSIS IN CONTEXT	Niyozmetova Ro'za Rejabboy qizi Jumabaeva Jamila Sharipovna Ermetova Jamila Ismoilovna	319-320
66	ABOUT SOME ISSUES OF TRAINING PROFESSIONALS FOR THE DIGITAL ECONOMY	Ilmidin Toshmatovich Yormatov Ferghana Polytechnic Institute	321-327
67	APPLICATION OF GENERALIZABILITY THEORY IN RELIABILITY ASSESSMENT OF CHEMISTRY ESSAY ACHIEVEMENT TEST	Orluwene, Goodness Wobiele Memory, Queensoap	328-339
68	THE IMPORTANCE OF TEACHING ICT SKILLS FOR ENGLISH TEACHERS	Berdiev Sukhrob Sobirovich	340-342
69	INCOMPLETE SYNTACTIC CONSTRUCTIONS IN COGNITIVE-DISCOURSIVE INFORMATION AND ISOFUNCTIONAL ASPECTS	Burieva Umida Abdumuminovna	343-346
70	POSSIBILITIES OF AESTHETIC EDUCATION THROUGH TEXT IN MOTHER TONGUE CLASSES	Mavlonova Klarakhan Makhmutovna	347-349
71	ASSONANCE IN THE CHILDREN'S LITERATURE	Sobirova Dilafroz	350-353

72	THE CONTRASTIVE ANALYSIS HYPOTHESIS: A CASE STUDY OF AN UIGHUR-UZBEK-RUSSIAN MULTILINGUAL WOMAN	Nayimova Nargiza	354-361
73	THE ROLE OF ECOTEXTS IN FORMATION OF ECOLOGICAL CONSCIOUSNESS AND ECOLOGICAL CULTURE AT PUPILS	Zamira Djurabayeva	362-364
74	SOME CONSIDERATIONS ON THE WAY TERMS ARE USED IN THE EXPRESSION OF ARTISTIC WORKS	Jamoliddinova Dilnoza Mirkhojiddinovna Alimova Namuna Numanovna	365-367
75	THE ROLE OF EQUAL CONJUNCTIONS IN THE SYNTACTIC FORMATION OF APPLIED DEVICES IN THE UZBEK LANGUAGE	Gafforov A.	368-371
76	THE ROLE OF TEACHER PERSONALITY AND METHODOLOGY IN ELT CLASSES	Parvina Begbudieva Nafisa Kubaeva	372-374
77	REFLECTION OF ISSUES OF CLASSICAL POETICS IN "ME'YOR UL-ASH'AR"	Hamroeva Orzigul Jalolovna	375-377
78	TEACHING READING TO LEARNING- DISABLED CHILDREN	Asrorov Ilg'or Fayzi oglu	378-379
79	INDIAN TRADITIONAL MEDICINE IN WESTERNS EYES	Kamath Madhusudhana	380-385
80	ARYA: A PROGENITURE INTELLIGENT ASSISTANT FOR SUPERIOR USER EXPERIENCE	Mr. Maheshwar M Ms. Maitrayee Mahanta Mr. P R Kuber Gupta	386-390
81	TUTBOT: A SPY ROBOT	Mr. Abhishek Mr. P R Kuber Gupta Mr. Brahmananda Reddy D	391-394
82	APPLYING MACHINE LEARNING MODELS IN STOCK MARKET PREDICTION	Vignesh CK	395-398
83	AN EMPRICAL STUDY ON FINANCIAL HEALTH OF ONGC	Aditya Prasad Sahoo	399-405
84	ATTITUDE, KNOWLEDGE, AND PRACTICES TO BOOST FOR SUSTAINABLE HEALTHCARE	Kamath Madhusudhana	406-408
85	TEMPLATE GENERATION THROUGH OBJECT PROCESSING WITH SIMPLE USER INTERFACE	Aravind M	409-411
86	CONVALESCENTPLASMA AS POTENTIAL THERAPY FOR RECENTLY EMERGED NOVEL CoVID-19	Dr. Vadla Vidyasagar Dr. C.Nithish	412-414
87	THE GIRL IN ROOM 105: A MURDER MYSTERY	Dr. Reshma Perveen	415-417
88	VERSATILITY IN VERSIONS OF EPIC NOVELS ABOUT "YUSUF AND ZULAYKHO" ("JOSEPH AND ZULEYKHA")	Jumaeva Dilnoza Tursunpulatovna	418-422
89	COMMUNICATIVE-ORIENTED TEACHING AT FOREIGN LANGUAGE LESSONS	Buranova Madina Uktamovna Buranova Lola Uktamovna	423-426
90	A SOLUTION FOR MEDICAL INVENTORY RESOURCES AND FINGERPRINT IDENTIFICATION	Disha A	427-429
91	SOCIAL ADJUSTMENT AMONG STUDENTS WITH PHYSICAL DISABILITIES: THE PREDICTIVE INFLUENCE OF PERSONALITY TRAITS	Njoku, Joyce Ugochi (Ph.D.) Akaninwor-David, Anna N	430-434



A STUDY ON TRAINING NEEDS ANALYSIS OF NURSES, IN A MULTI-SPECIALITY HOSPITAL, COIMBATORE

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ABSTRACT

The topic of Training Needs Analysis of Nurses (TNAN) remains underdeveloped, despite a significant degree of academic and practitioner interest,. A Key limitation is the fact that TNAN is typically job performance. Training Need Analysis (TNA) is a series of activities to identify problems or other issues in the workplace to determine the training needs. TNA is a method to determine performance gaps and what training is required to fill in these gaps. Appropriate use of TNA can prevent unnecessary spending on improper, inefficient and ill targeted training programs, and maintain more focus on the real needs. It also helps save time and increases new training programs provided by Hospital. The main objective of this study was to analyse the existing training models of nurses and find out the needs of training and suggest the suitable measure to improve the training programs of nurses in work place.

KEYWORDS: *Training Need Analysis of Nurses (TNAN), Training Need Analysis (TNA), Job Performance, Performance gap, Work Place.*

INTRODUCTION

1.1 Definition

Definition of Training Need Analysis (TNA) is the process of identifying the gap in employee training and related to training needs.

Training Need Analysis is the first stage in the process in the training process and involved a series of steps that reveal whether training will help to solve problem which has been identified. Training can be described as “the acquisition of skills, concepts or attitudes that result in improved performance within the job environment”. Training Needs Analysis looks at each side of operational area of job so that concepts and attitudes of the human elements of a system can be

effectively identified and appropriate training can be specified.

1.2 Training Needs Analysis Model

Despite the growing need for further research into TNA, there are several methods relating to current practice that can help to guide the TNA process.

- (i) **The Traditional Model** : ‘Much organizational training which is carried out today is based on a traditional mechanistic approach to adult learning brought into practice over two hundred years ago. The focus of this model is very much on job behaviour and task analysis, using quantitative data and formal interviews to gather information. However, this



approach is very comprehensive and time consuming; possibly resulting in the data collected becoming irrelevant by the time an appropriate timing strategy is developed.’ (Anderson, 1994)

- (ii) **Practical TNA Models:** From this model, an outcome for the TNA can be derived. The model can consider three different approaches to TNA including trainer centered, demand-led, and supply-led. This model does help the TNA Coordinator select the appropriate approach for the desired outcomes; it does not provide any guidance as to undertaking a TNA that is sufficiently comprehensive and effective. As a result, this may mean that the TNA is not entirely useful. However, this model is useful “in guiding further research into TNA and in helping to classify future studies”. (Chiu et al. 1999)

1.3 Training Needs Analysis of Nurses

Within the healthcare industry generally and nurses more specifically, it can be difficult to consistently conduct through TNA. For example, there are often issues such as nurse’s shortages directing the organization’s focus. Equally the need for and importance of TNA is often underestimated in many different industries. However, nursing specifically and the healthcare sector more generally, seems to be below average when it comes to developing and implementing strategies.

The Objective of the study includes,

- (i) To study the existing training programmes for the nurses in the hospital.
- (ii) To analyse the training needs of the nurses in the hospital
- (iii) To suggest the measures to improve the training needs of the nurses.

2. LITERATURE REVIEW

According to Joanna Carlisle (2010) has revealed in his study the significant degree of academic and practitioner interest, the topic of training needs Analysis of Nurses (TNAN) remains underdeveloped. A key limitation is the fact that lacks a consistent conceptual periphery and an unequivocal proactive model. The

specific contribution of the paper is in developing a logical model of TNA of nurses employed in healthcare organizations in Australia. In so doing we draw insights from a number of discrete literature bases. Thus, the paper should aid future research in the area of TNA through helping researchers to clarify the conceptual boundaries of TNAN and providing a theoretical framework that could help researchers their research efforts in the area.

According to Tan et al., (2003), Companies are making huge investment on training programs to prepare them for future needs. The researchers and practitioners have constantly emphasized on the importance of training due to its role and investment.

According to Obisi (2001), Training is a process through which the skills, talent and knowledge of an employee is enhanced and increased. He argues that training should take place only when the need and objectives for such training have been identified.

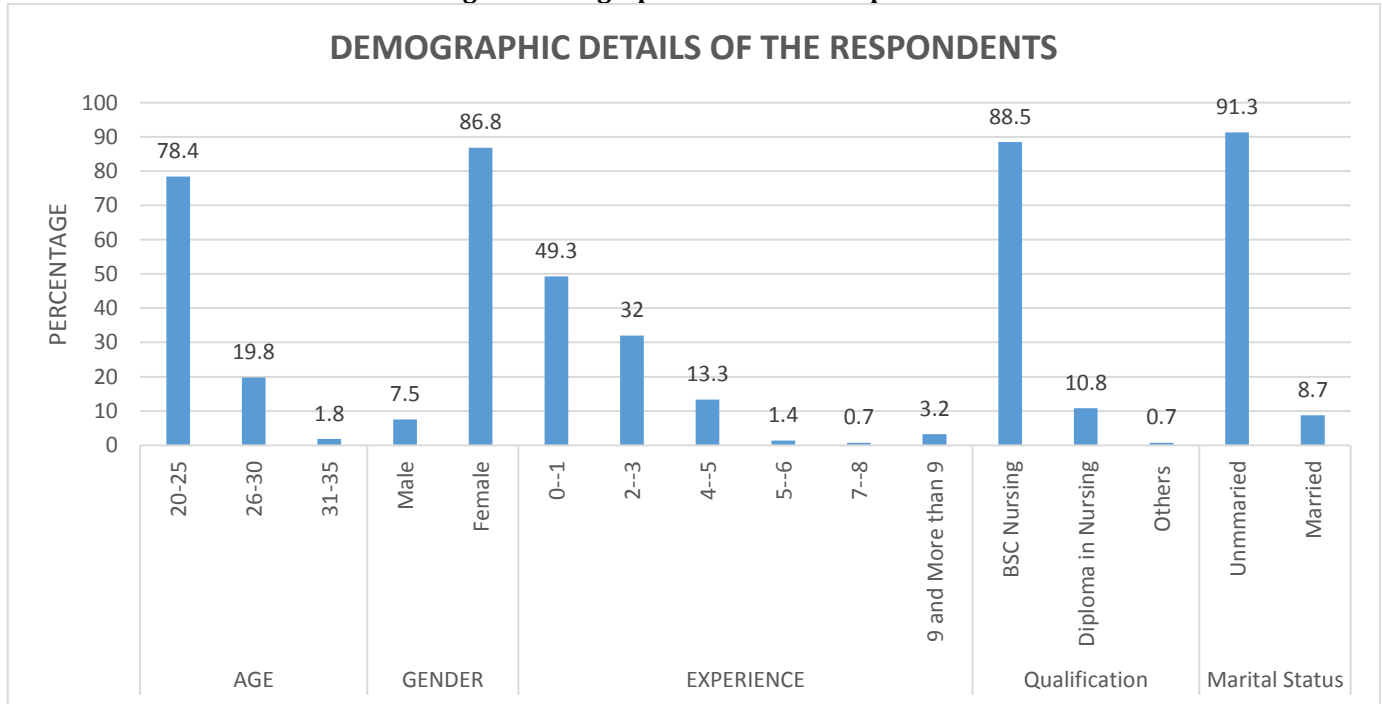
3. METHODOLOGY

This is a descriptive research that aims on the staff nurses of the selected hospital and their training needs to be analysed in their hospital. The simple random sampling is used in order to collect data. About 1000 staff nurses were present in the hospital and by considering the Morgan’s table with 95% confidence and 5% error, 278 data were collected. For this purpose, a questionnaire has been designed, making sure that research questions do justice to what researcher is trying to find and to provide the direction and shape of the research. Accordingly the survey tool is a structured questionnaire divided into 4 parts. The first part includes the demographic questions such as age, department, gender, experience, qualification, marital status. The second part is composed of 17 questions related to nursing skills. The Third part is composed of 30 NABH policies related to nurses training. The fourth part composed of training topics like soft skills, clinical skills, technology upgradation, mandatory training, specialization training.



4. ANALYSIS

Chart-1 showing the demographic data of the respondents

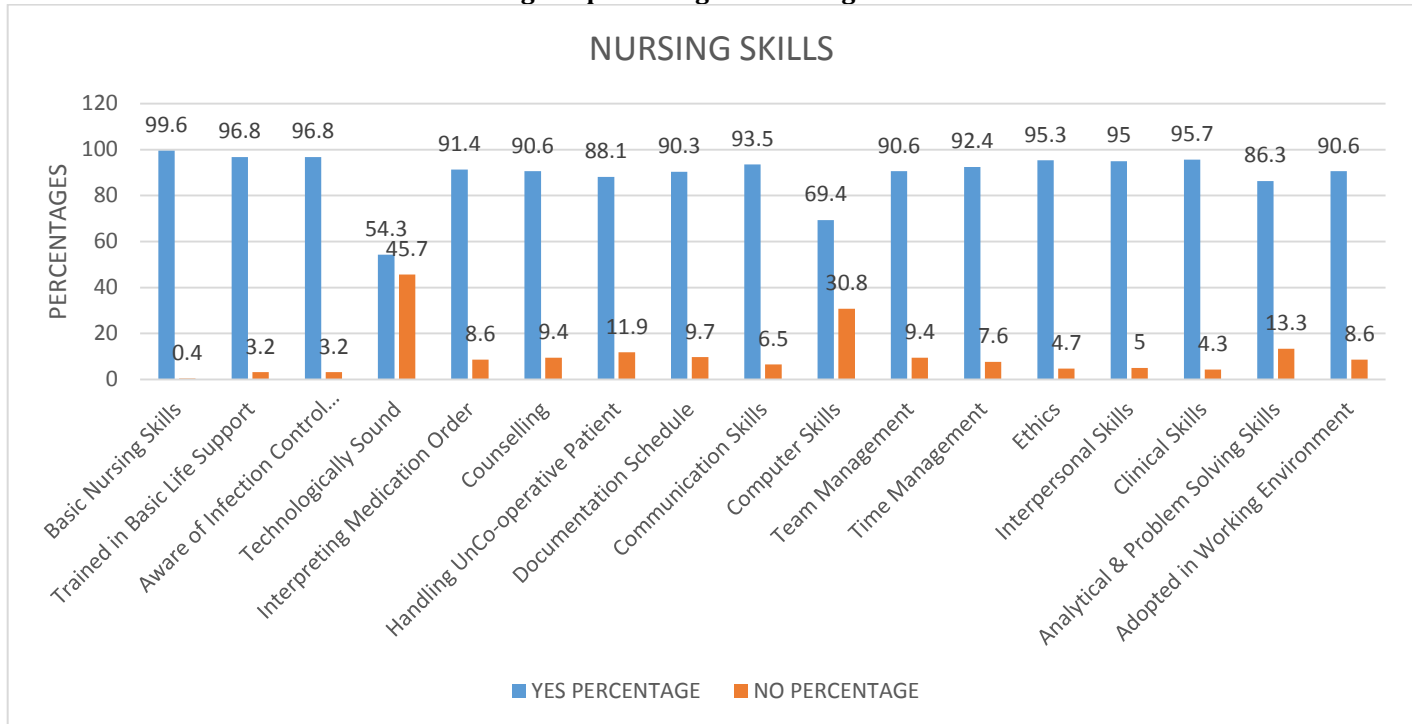


Form the above chart showing that 20-25 years age category of the staff nurses highly participated in this study. It is also evident that female staff nurses has participated more in numbers than the male. In this study, the employee who has less than 1 year of

experience has more participation. The BSC Nursing qualification was high compared to Diploma in nursing and others. The percentage of respondents, who are unmarried is high.



Chart-2 showing the percentage of Nursing Skills



From the above table show the percentage of contribution of the respondents based on their Nursing Skills as follow as 99.6% of respondents have opined that, they were well trained in basic nursing skills,

96.8% of respondents have been trained in basic life support, 96.8% of respondents aware of Infection control Practices, 30.8% respondents require Computer skills.

Table 1 showing the difference between the Experience and Nursing Training Policies

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
CodeBluePolicy	Between Groups	11.631	5	2.326	3.706	.003
	Within Groups	170.743	272	0.679		
	Total	182.374	277			

H0: There is no difference between the experience and nursing training programmes

H1: There is difference between the experience and nursing training programmes.

From the above table, the significant value is .001, which is less than .05, hence we reject H0 and accept H1. Thus we prove that there is difference between the experience of the staff nurses and the nursing training programmes.

5. MAJOR FINDINGS & RECOMMENDATIONS

- Staff nurses can be motivated to attend the training program.
- The importance of the training program can be imparted among the staff nurses.
- In-house experienced staff nurses are not showing interest in attending the training programs, as it is repeated.



- Staff nurses are unable to attend the training programs as per the schedule due to shortage of manpower in the ward side.
- The newly joined staff nurses require proper training to handle the patients.
- Rotational job training in different ward can be given for the staff nurses.

The recommendation include,

- Training programs can be made interesting by using audio video presentation.
- Awareness about the quality standards of training programs should be emphasized to all newly joined staff nurses.
- Training programme schedule should be standardized and customized according to the individual work schedule.
- It is recommended to provide biomedical equipment training program and soft skill classes to the staff nurses at least twice in a month.
- To provide On-job training to all the new join staff nurses.
- The newly appointed staff nurses should be trained to handle all kinds of disordered patients irrespective of their specialized area.

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6. CONCLUSION

It can be concluded, that Training Needs Analysis of Nurses helps the hospital, to develop the skills and knowledge of the staff nurses. It is one of the most important potential motivators which lead to both short-term and long-term benefits for staff nurses and organization. It also helps to increase appropriate new methods of training program, which would be helpful for the individual and organisational development.

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IMPACT OF VISUAL ARTS IN HOSPITALITY INDUSTRY AS A MEAN OF ECONOMICS STABILITY IN NIGERIA

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ABSTRACT

This paper looked into the impact of visual arts and urban tourism management within their environment. It discussed the role visual arts play in tourism management as well as the role of environment tourism, tourism conflicts, political environment, market Urban tourism areas as it playing vital roles in human and national development. This paper is to discuss the significant roles which visual arts play to achieve the needed development to humanity. This paper which is based on functionalist theoretical framework views art works as it playing significant roles in the society. It concluded by stating that tourism development is a means to an end rather than an end in itself and as a result, tourism development is also a question of integration, requiring and embedding within wider social and political agendas as well as economic policy of a particular country.

KEYWORDS: *Visual Arts, Urban Tourism, Management and Environment*

INTRODUCTION

Art means different things to different people. They define it based on their personal experience. Visual arts as used in this paper represent those expression from the artist which can be perceived through human optical activities such as touch, emotion and others which tend to affect aesthetic judgment Ikwuegbu (2012). Visual art fall under creative arts and can be sub- divided into fine and applied arts (or industrial arts). They include: ceramics, painting, drawing, sculpture and photographic design, textile, design, architecture and photograph. We also have theoretical areas of visual art namely: art education, art history and art appreciation and aesthetics. The key term in the definition of visual arts according to (Katz, and Phillips, 2011) is “perception” which convey in us, the ability to recognize and understand things we experience in our environment through sensory awareness, especially of sight and touch”. Visual arts are creative activities on which the human and national development stands. They are human activities aimed at

helping man face the challenges in his environment. Eze (2010) while emphasizing the view of Folarin said that, Art is an awesomely versatile site of human creative engagements. These creative activities according to (Eze 2010) “are indeed capable of inculcating values, skills, abilities and competencies that will promote the physical well being and psychological health of an individual as well as resulting in creating gainful employment and opportunities for financial rewards for the artists”. Within the context of all human endeavours, art expresses the way people reveal and share their most important values, beliefs, concerns, profound thought and emotions, (Ecoma, 2011).

Town and cities have, throughout history, been a focus of tourist activity, providing accommodation, entertainment and other facilities for visitors. For example, the early development of span tourism in the sixteenth century and the emergence of resort-based seaside tourism in the eighteenth century were both related to urban locations while the structure of the



Grand Tour was determined to a great extent by the culturally significant cities of Europe Towner, 1996).

However, it is only more recently that the important of urban tourism has come to be realized. Not only has tourism become a significant component of the economy of most large cities but also it is now widely perceived as an effective vehicle of urban development and regeneration. Since Baltimore famously revitalized its inner-harbour area in the 1970s through the development of business and leisure facilities innumerable other towns and cities have also adopted tourism development as an integral element of their socio-economic development policies Swarbrooke, (2000) to refer more specifically to ‘city tourism’. Nevertheless there is no doubt that, globally, tourism has become increasingly prevalent, albeit in a variety of form or guises (such as heritage tourism, cultural tourism or special event tourism), in urban spaces.

URBAN TOURISM: KEY THEMES AND ISSUES

Typically, the academic study of urban tourism embraces a number of core themes. These include: The demand for urban tourism- identifying the ‘urban tourist’, motivational factors; measuring demand; trends/patterns in demand; tourist-consumer behavior; modeling/forecasting demand, etc. the supply of urban tourism- primary elements, including ‘activity’ and ‘leisure’ settings; secondary elements, such as accommodation and restaurants; and additional elements including information services, car parking and so on.

Marketing goods and services in urban tourism, there by selling things within the city; re-

branding and re-imaging the city with art works spreading to all parts within the environment. Policy, planning and management issues – tourism and regeneration, organizational structures and relationships, networks, collaboration, tourism policies (attractions, events, regional focus), etc. The impacts of urban tourism- economic benefits and costs; socio-cultural development in sustainable generation, etc At a basic level urban tourism is a complex or even chaotic concept because of the diversity of contexts in which it occurs. As Shaw and William (2002), suggest, urban areas are heterogeneous, ‘distinguished as they are by size, location function and age’ and as result an attempt have been made to categorise urban tourism destinations. Judd and Fainstein (1999), for example refer to resort cities (built with tourism as the primary function), the tourist-historic city (where historic cores have become the object of tourist consumption) and converted cities (where a change of function has occurred).

A principal purpose of developing urban tourism (and indeed, all other forms of tourism) is social-economic development of the destination. In the urban context, this is frequently referred to as regeneration, reflecting the more recent focus upon the use of tourism as means of restructuring inner city or docklands areas in order to encourage wider inward investment, to stimulate economic growth, to underpin physical redevelopment and to contribute to more general place-marketing and re-imaging. A variety of strategies are typically employed, usually in combination as shown in figure 1 below:

Figure 1 Tourism strategies for urban regeneration

Events-led strategies: one off events & festivals to attract tourists
Attraction-led strategies: the development of critical mass of core visitor attractions
Business-led strategies: the development of conferences, meeting and exhibitions

Cultural strategies: promoting the popular, contemporary culture of a destination.

Leisure-based strategies: shopping, sports cinema, displaying an art works that covers areas like ceramics, sculptures, painting, graphics etc. as the attraction to tourists visiting the environment. However, all urban tourism development focuses upon the socio-cultural and economic well-being and development of local communities. Whether the promotion of a city’s historical attractions, the redevelopment of a waterfront, or staging of a mega-event such as the Olympic Games, the overall purpose is to provide income and employment opportunities, to provide facilities and

services for local people and to underpin the improvement of the physical environment since most of these program are duly represented with statues to depict heroes within the society, sculptural fountain and so on, are provided to attract the tourist. Therefore, within this universal objective, a number of sub-issues become pertinent:

Urban Tourism and Social Exclusion: New tourism-related development in town and cities are frequently socially exclusive and bring least benefit to those who need it most. Tourist areas become gentrified, providing a ‘fantasy cities’ for those who can afford it.



Contestation Space: Related to the point above and more generally, there is often a diversity of views over how urban space should be developed with the use of sculptural piece like statues to commemorate the heroes and used particularly between those who wish to institute change, such as developers and politicians, and those who seek to limit change (often local communities).

Resource Involvement: Most often community were not involve in some of the development of tourist centre in term of decorations and other related items to provide incentive or sale of Art works to the public and this may cut-off people that such developments were designed to assist.

Political Environment: Arts have been periodically but consistently subjected to political pressures. Their opposition generally comes from the conservative end of the political spectrum and is often associated with governmental actions. This was fully evident in the culture wars of the 1990s in U.S. and in the crackdown on artists and art projects in the aftermath of the events at Tiananmen Square in China. However, politically conservative leaders in many parts of the world are using populist strategies and sophisticated social media platforms to put new pressures on artists and arts institution.(The committee on Global thought,2019) The broader political environment, manifested in, for example the establishment of regional agencies committed to implementing national development policy or schemes, such as the European Capital of Culture, may drive urban tourism development towards externally imposed, rather than locally decided objectives. A Framework for managing Urban Tourism from the above discussion, two points are evident. First, urban tourism is a complex concept, manifest in practice in an enormous diversity of development perspectives, city attractions as result of creative arts, tourist behaviour and so on secondly, irrespective of this diversity, a number of issues, in particular with respect to effective and appropriate tourism development, and common to most, if not all, urban tourism contexts.

Therefore, there is need for a framework which is not only able to demonstrate the multitude of factors, influences and processes which may affect the development of urban tourism in different contexts, but which also provides a logical and systematic process to be followed in managing urban tourism development in the state of the nation as a whole. Here, the political environment which include both local and national government structure and prevailing policies as well as the economic and socio-culture environment must be

taken into account in order to identify not only appropriate management structures and roles in developing urban tourism, but also the multitude of political economic and social forces that represent either opportunities or barriers in all areas as well as in arts because deemed offensive and rightwing governments seeking control over art that may be seen as critical or provocative while it is true that all forms of art, from literary to visual and performing arts are under new socio-political pressures, to delve deeper into the way that images are politicized by interested actors across the world. . Thus, the need to viewing tourism it should not be in isolation, but as a part of holistic approach to economic and social policy-making. A framework for managing urban tourism cannot be successful enough without the use of Visual Arts as means of decoration which gives development of the aesthetics derogated.

VISUAL ARTS, MARKETING URBAN TOURISM

If tourism development has a role to play in urban renaissance in the early renaissance around 16th – 17th century, the spirit of art development to meet high standard on challenges divincence etc, move work of artist to high stages art works in the world, and the name renew was related as high standard of living in aesthetic development in both tourist and Arts that embedded in the promotion of tourist in the urban areas and such a contribution is to be optimized, then a key element in any development strategy must be marketing. Place promotion is now a well-known feature of contemporary urban life and of city marketing campaign. Page and Hall (2003) define it as the process of identifying a place as a ‘place product’ and developing and promoting it to meet the needs of identified users. Paris is thus known for its reputation as the romantic capital of Europe. As a result of marketing processes, place images have becoming closely associated with each city in the creation of perceptual global place maps. But the placement of cities within global maps is neither a new a fixed phenomenon.

In 1900, the world’s great cities were almost all in Europe and North America. Since then however, growth of cities such as London, Paris and New York has been far outstripped by those in Asia, for example, which have growth more than a hundred fold in the last century (Spearritt, 2002) Tokyo, Seoul and Beijing, among others are all now important world cities competing for global industry, business, residents – tourists. Fortunes change, however. That which attracts capital different kinds) alters over time. For



some industries, skilled and experienced (cheap) labour draws them to a place. For others, environmental resources provide raw materials that decide the attractiveness of a location. Too little is understood of the complex motivations of tourists to be able to summarize a destination's appeal similarly, but it is generally accepted that a city's image and the resulting perception of it influence visitor preferences for it (Law, 2002).

Areas of cities often discussed and in decay are transformed into places with few distinguishing features, and geography of nowhere rather than a sense of somewhere emerge. The essence of it for historical works of arts, the main artistic objective could be kept the art work "alive" by helping consumers to understand why it represents an historical breakthrough and why it is still an important work in terms of the present, considered aesthetically and otherwise. (Hye-Kyung Lee 2006) The characterless glass towers, homogenous walkways, themed shopping malls and generally monotonous urban landscapes of the international postmodern city are surely the antithesis of distinctiveness marketing.

What is the Tourism Environment?

Tourism is an environmentally dependent activity. That is, the environment is a fundamental element of the tourism product – tourists seek out attractive, different or distinctive environments which may support specific touristic activities and thus, the maintenance of a healthy, attractive environment is essential to the longer-term success of tourism. Tourism as one of the fundamental and inherent human rights is inseparable from his essence and there has been emphasis in the Holy Quran for people to enjoy it. The international documents and organizations also have recognized it as a right for human and countries need to recognize it as their own domestic laws and regulations formulated to provide its implementation (Gharibeh, 2011).

Frequently, the environment is thought of simple in terms of the physical attributes of the destination. Indeed many texts refer to physical/environmental impacts of tourism as distinct from social and cultural consequences. However, the attraction of any destination may reside in factors beyond its physical (natural or built) attributes, with tourists seeking opportunities to learn about or experience new societies or cultures. Thus, the tourism environment can be viewed as possessing social, cultural, economic, and political dimensions, besides a physical Holden (2000). In this sense tourism environment may be defined as:

That vast of factors which represent external (dis) economies of a tourism resort natural anthropological, economic, social, cultural, historical, architectural and infrastructural factors which represent a habit onto which tourism activities are grafted and which is thereby exploited and changed by the exercise of tourism business (EC, 1993). However, while this definition embraces the parameters of the tourism environment from a management point of view it is also important to consider the varying perceptions of it. In other words, although the factors included in the above definition are descriptive and tangible, the ways in which they are perceived or valued by different groups may vary significantly. In particular, there is likely to be a distinction between the ways in which local communities and tourists perceive or value the destination environment; while tourists may value highly a pristine or underdeveloped environment, local may simply view it as a legitimate resource for exploitation. In Cyprus for example most of the coast has been developed or earmarked for development on the island (Sharpley, 2001a). However, there not only exists a distinction between locals' and tourists' perceptions of environment. As Holden (2000) summarizes, tourists do not represent an homogenous group consumers; they are likely to perceive and interact with destinations environment in a multitude of different ways, depending upon their attitudes, motivations, and expectations. In other words the attitudes of the tourist to the environment will be reflected in their behavior, which in turn will determine the degree of impact upon the environment. Thus, at one extreme tourists may have a complete disregard for the environment, placing the satisfaction of personal needs above environmental concerns; at the other extreme, they may feel a strong attachment to the destination environment and will attempt to integrate themselves into it. This suggests that tourists' experience of the environment can be placed upon a continuum of perception/behavior.

TOURISM AND ENVIRONMENT CONFLICTS

Not only have the environmental consequences of tourist development- both negative and positive – been long recognized and discussed, but also they have been variously addressed in the literature. Typically, however, environment is implicitly defined as the physical, as opposed to social-cultural resource base. The focus is principally upon negative impacts, or the environmental costs of tourism development in the destination area and the analysis is usually structured around particular impacts, such as pollution or erosion



or around the constituent elements of the natural environment – land, water, air flora, and fauna – as well as the man-made environment. While such a perspective is both logical and objective, it does have a number of weaknesses. In particular it implies a causal relationship between certain forms of tourism development and their inevitable environmental consequences, and that, importantly, such consequences are considered undesirable or bad and should therefore be minimized or avoided.

In addition, not only does the tourism environment possess socio, cultural, political and economic dimensions in addition to its physical elements, but also the analysis of tourism impacts should not be divorced from these dimensions. Also, while the development of tourism undoubtedly has consequences for destination environments, impacts may be exacerbated or even caused not by tourism or tourists but by other economic or human activity. Finally, while all societies, cultures and economics are dynamic, the environmental values embedded in (sustainable) tourism planning and policies are, however, static.

MANAGING THE TOURISM-ENVIRONMENT RELATIONSHIP

It is not possible within the context of this unit to review fully the enormous variety of prevailing tourism environmental management strategies, whether at a broad policy level or with respect to specific sites and locations. Nevertheless, there exist three principal approaches to managing the environment for tourism.

Managing Physical Resources

It is important to find ways and manner of protecting or conserving the physical tourism resources base as follows:

Land Designation: The most common strategy for protecting areas of ecological, scientific, historical, and scenic or, in the present context, tourists/recreational importance is designation, whereby identified areas are designated according to necessary degree of protection. The best known form of designation, representing 57% of the world's protected area (Newsome et al, 2002), is national park status, which seeks to protect nationally important areas of ecological, educational and recreational purposes. Often however the local interest (and indeed, knowledge and experience of land management is subordinated to the national conservation/ tourism development interest in much of the developing world, for example, national park designation has significantly disadvantaged local communities (Murphree and Hulme, 1988).

Spatial Planning Strategies: A variety of methods are employed to encourage tourism development in

some areas while relieving pressure on sensitive or already degraded sites. The most popular of these is zoning, which attempts to prescribe varying levels of public use and conservation in different parts of zones of a larger area such as national park. It may be also be utilized to separate incompatible tourism uses both spatially and temporally.

Site Management Techniques: At the local, site level, various techniques are employed to either protect sensitive areas or to facilitate regeneration or restoration of damaged sites. Such techniques may include, for example, the appropriate location and signing of roads and trails, the careful positioning of visitor facilities and the enormous diversity of methods employed, from 'site-hardening' measures to the temporary denial of access, to protect or restore particular resources, such as coastal areas, mountain trails and so on.

Managing Visitors: By definition, the impact of tourism is directly related to the behavior or activities of tourists themselves. Moreover, differing attitudes and perceptions towards environment on the part of tourists are likely to be influential in determine the degree of impact experienced by any one tourism destination. It is not surprising; therefore, that effective visitor management is widely considered an integral element of environment management (Jim, 1989).

The purpose of visitor management is to match the nature, scale, timing and distribution of tourism activity to the environment within which it occurs – that is, to ensure that the capacity of the environment to absorb tourists is not exceeded – as well as attempting to encourage "appropriate" behaviour on the part of individual tourists. In a broad sense, calls for tourists to adopt 'good' behavior is a form of visitor management but the wide range of more specific techniques employed to manage visitor behavior vary from soft, low –regulator methods designed to inform or educate, such as information centers, interpretation and codes of conduct (Mason and Mow forth, 1995), through to high – regulatory methods designed to limit access. In many instances such techniques are successful; reducing the number of car park spaces has, for example been found to be effective means of limiting tourists numbers at particular natural area sites (Sharpley, 1996). However, visitor management more generally tends to be reactive 'solution' to a problem rather than an element of a wider, proactive environmental management process.

SUSTAINABLE TOURISM DEVELOPMENT

The two approaches to managing the tourism environment described above focus specifically on two separate elements of the tourism environment



relationship, namely, the physical environment and visitor behavior. Art and design has a multi-directional content for finable development ideals. For example, aesthetic sensitivity and critical thinking which the nature of art and design subjects help students grow as individuals who are environment ecosystem sensitive Sustainability of art and tourism could be seen in two directions. This reduces effect of violence by providing them with sensitivity empathy as well as helps them develop good conduct within the society and environment. Conversely, sustainable tourism destination the local community, the physical environment, the cultural environment, the tourism industry and tourists themselves- in an approach that is intended to reduce tensions and friction created by the complex interactions between them. In other words, sustainable tourism development seeks to optimize the benefits of tourism to tourists (their experiences), the industry (profits) and local people (their socio economic development) while minimizing the impacts of tourists development on the environment.

CONCLUSION

Since tourism and visual art is becoming increasingly important destinations will have to incorporate the issues onto their current managerial and marketing strategies. Tourism development is a means to an end rather than an end in itself and, as a result visual arts, tourism development is also a question of integration, requiring and embedding within wider social and political agendas as well as economic policy of a particular country.

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SMART TRAVEL PLAN GENERATION SYSTEM USING IMAGE CLASSIFICATION APPROACH

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ABSTRACT

Travelling involves exploring new and previously unseen places. Each person's interest varies from the others' interests. The current travel plan generators make users to manually select places that they want to visit, thus making them require knowledge about the place. The model proposed in this paper, classifies images using an image classification algorithm, uploaded by the user and identifies the users interest by finding the type of place that is most visited. The users' interest calculated by the classification algorithm is termed as the personal interest score. The model then calculates a route that covers places of types that the user prefers and is closest to the destination given by the user.

KEYWORDS: *Travel plan, tourism, image classification, personal interest.*

1. INTRODUCTION

Travelling is a practice followed by all, around the world. The tourism board makes billions of dollars as revenue each year[1]. However, the experience and satisfaction of travellers do not usually align with the high profits of the industry. Travellers are required to have a huge budget and a good knowledge about the places that they want to visit. Spending a lot of money only to visit a place that they did not like very much is a total waste. For people who would like to travel, there are two options available currently. One, approaching a travel agency and choosing a tour package from the ones available. Here, there is no option for the travellers to customize the plan based on their interests. To solve the problem of customization, online travel plan makers are available where it lets the travellers to choose the places which they want to visit. After selection it lists the activities that they can do in that city.

The drawback here is while it is a good solution to local travels, for longer distances, the travellers are required to know about the places themselves before they make the plan. There is no option to guide them through based on their preferences. These online plan makers often lead to

experiences which aren't satisfied due to lack of tour guidance. The paper is organized in the following way. Section 2 explains the proposed model followed by the architecture, results in subsequent sections. We have also presented the sample dataset and the next section provides the sample output.

The current travel plan generators are based on recommender systems that suggest travel plans based on the ratings and responses given by other users to the plan [3]. Some of the models only consider generating an optimal path to reach places faster as a suggested travel plan to the users [2]. The existing models also provide best routes based on factors such as hotels, transport facilities, overall experience of other travellers to select a particular route as the best route [4]. Studies have shown that using classification techniques preference of users can be identified and can be used to benefit the user in generating a personalized result [5].

2. PROPOSED MODEL

This paper proposes a model for a smart travel plan generator that would give importance to the personal preferences of users over other factors. Data representing the preferences and personal



interest of users depending on type of place. Using Image Classification algorithm, a personal interest score is calculated for each user to identify their interests. Based on this score places would be suggested when a travel plan is generated. A start and end location as input from the user will generate a travel plan that covers places that align with the users' interest by calculating a route that covers all places closer to the destination and with better ratings. Provisions to provide manual ratings about previously visited places is also accepted as input as they provide vital data about the user's personal interest. These ratings provided by the user will be

added to their personal interest score based on the type of the place.

3. PROPOSED ARCHITECTURE

The proposed architecture is presented in Figure 1. In the model, set of images with no limit for the maximum number of images that can be uploaded, is stored in the image folder upon successful uploading from the user side. The images are sent as input dataset to the image classifier neural network which calculates a personal interest score (PIS percent) that would remain a key factor in determining the kind of places that the model would suggest to the user.

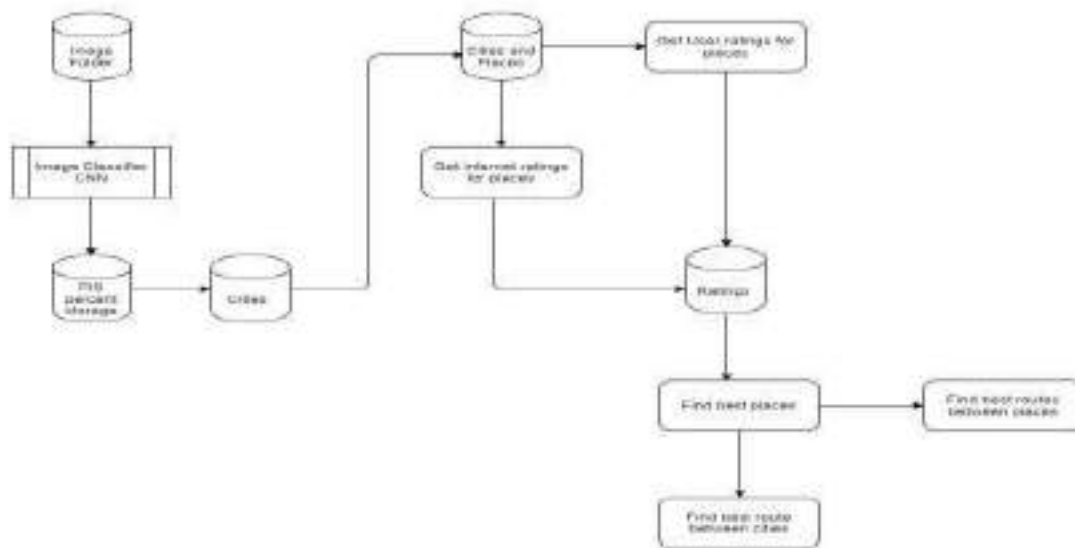


Figure 1. Proposed architecture

Individual databases are maintained for storing important data that are essential for calculating other factors such as, names of cities, places that can be visited and the ratings for each place that would help in generating a suitable plan for the user. Users can also contribute to the dataset by providing ratings for places that they have visited. These values are of prime importance while finding places that align with the user's interest. The best routes between the cities and between places to visit in a city are calculated by using the shortest path algorithm. The best route that is suggested to the user is the one that requires the least distance to be covered during the journey.

Finally, the generated travel plan is displayed to the user. By clicking on the city name, places that can be visited in that city can also be viewed. The cities and the places in each city are all aligned with the user's interest which can be verified with the PIS score calculated using the classification algorithm. Given below is the algorithm (figure 2) that shows the operational flow of the model after the calculation of the personal interest score for the user. It explains the use of various databases and the criteria which must be fulfilled to be selected as the best city to visit according to the user's interest.



```

Input: Image folder, start location st_loc and end location end_loc
Output: Travel Plan tp containing places and routes
Begin
Feed the images from image folder to train the CNN and calculate personal interest score.
for ctg in places_categories
dict d[ctg] = pis rate on 10
load the dictionary data into the PIS table.
sort cities in city_table by distance from st_loc.
for city in sorted(cities)
    if city.type_of_place != ctg[max(pis)] in PIS table
cities.pop(cities.index(city))
ratings = avg(ratings_table.user_rtn, ratings_table.internet_rtn)
for city in cities
    places = city and places table.places
    sort places by ratings
opt_places[city] = [places[-3:]]
for city in cities and places in opt_places
    find best route using Google map services and display the best routes
end
    
```

Figure 2. Algorithm of proposed model

5. EXAMPLE DATASET

A travel plan between two sample places was generated as a sample to demonstrate the working of the model and the calculation of the Personal Interest Score (PIS). A collection of images covering three types of scenery images such as Hills, Beaches, and Entertainment places such as circuses, theme parks were uploaded to provide data about the

user. The personal interest scores of the user for each type of place is calculated by the algorithm and is stored in the PIS table. The ratings are stored in the ratings table and the cities and their places are stored in their respective tables. Table 1 shows the PIS table values for the sample data. Table 2 shows the ratings that are provided for the various places.

Type of place	PIS percent
Hills	7.8
Beaches	7.7
Entertainment	4.5

Table 1. Personal Interest Score table

Place ID	Avg. internet rating on 5	User rating on 5
501	4.5	5
502	3.3	3
503	3.7	5
504	3.3	4
505	3.6	5
506	4.2	5
507	3.6	5
508	3.6	5
509	3.5	5
510	4.3	4



511	4.2	4
512	3.5	5
513	4.2	5
514	4	5
515	3.5	4.5
516	4.2	5
517	3.4	5
518	3.4	5
519	3.1	3
520	3.5	3
521	4.5	5
522	3.4	5
523	4.4	5
524	4.4	5
525	4.4	5
526	4.4	5
527	3.8	4
528	4	4
529	3	5
530	3	4

Table 2. Ratings table

Figure 3 shows the page where users can upload their gallery images to provide data to the model. These are given as input to the algorithm which then calculates the PIS percentage. Figure 4 shows the page where, the two mandatory inputs are given: the start and the end city name. The travel plan is generated as shown

in the figure 5. On clicking on any city name, the places to visit in that city is shown as in figures 6 and 7.



6. SAMPLE OUTPUT:

Choose File boly_image.jpg **UPLOAD**

Place Name: Mountain Railway

Rating: 4

Figure 3. Users upload images as input to the algorithm

Start location City: Madurai

End location City: Chennai

SUBMIT

Figure 4. Users provide start and end cities for their travel plan

Your Travel Plan

OOTY KODAIKANNAL YERCAUD YELAGIRI MUNNAR

Figure 5. Generated travel plan

Recommended places to visit

- Bear Shola Falls
- View point
- Pillar rocks
- Devil's Kitchen
- Cookers Walk

Figure 6. Detailed plan for the individual city1



Figure 7 Detailed plan for the individual city2

7. CONCLUSION AND FUTURE ENHANCEMENT

The model proposed in this paper suggests a smart travel plan generator that generates a personalized plan for the users based on their travel preferences and interests that is calculated by classifying images uploaded by the user. Future enhancements for the model can include adding a recommender system to the model that compares the various plans generated for each user of similar interest types and recommending a plan that the user would prefer the most.

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THE IMPORTANCE OF LISTENING SKILLS IN TEACHING RUSSIAN LANGUAGE TO THE CADETS OF MILITARY INSTITUTE

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ABSTRACT

Nowadays listening is an important aspect of teaching Russian as a non-native language. The main problems of listening to Russian speech by cadets of non-philological education in military universities are investigated and ways of their solution are outlined. The types of listening, efficiency and effectiveness of the process of learning to listen and take notes on various audio texts of military subjects are highlighted.

KEYWORDS: *Russian as a non-native language, listening, cadets-non-philologists, difficulties of understanding, difficulties of perception by ear, a system of exercises.*

INTRODUCTION

In Uzbekistan, significant changes have taken place in the field of education in recent years, affecting the philosophy of education, its global goals and objectives, organizational structures of the content of education, approaches to the development of educational standards and curricula, forms and methods of ensuring the quality of education, and many other aspects. President of Uzbekistan Sh. M. Mirziyoyev signed the law "On science and scientific activity", according to which one of the main directions of the sphere of science and scientific activity is to achieve the competitiveness and efficiency of the national economy through the development of science and scientific activity. [1].

The Military-technical Institute of the National guard provides a wide range of educational services. One of the important areas of educational work is the training and teaching of foreign languages to cadets, where a special place is taken by the Russian language.

The course of Russian as a non-native language has certain specifics: its own goals, content, and methods of teaching. Teaching Russian language as a non-native language in this case is characterized by the fact that cadets study at the faculty, for whom the Russian language has a practical orientation. It is important to take into account the level of training of cadets, their interests, external and internal motives, as well as the availability of appropriate training manuals

and technical tools. All this requires the development of methods that ensure successful training of cadets in the Russian language. The main idea of the methods is maximum variability with the most effective use of resources, cadets training time and teachers work. At the end of the course, cadets must be proficient in the Russian language to the extent necessary for communication in the educational, professional, social, household and socio-cultural spheres of communication, possess a system of subject knowledge, be psychologically ready for life and work in a new socio-cultural environment [4].

Teaching listening is one of the most important aspects of teaching Russian as a non-native language. Speech recognition, or listening, in terms of learning is a type of activity which is complex and demands much work for the problems in this area of language to be solved. To solve this problem, it is necessary to train cadets in listening at various stages of the course. Listening determines the further success or failure of all practical language learning, it plays an important role in the study of any foreign language, and especially in communication-oriented learning. Modern methods of teaching foreign languages emphasize the need to develop listening skills as a very important skill, without mastering of which it is impossible to communicate in the language being studied. Listening should take an important place at the initial stage of language learning



LITERATURE REVIEW

The research of I. A. Zimnaya, N. D. Galskova, and E. N. Solovova gives a detailed description of listening as a type of speech activity, specifies the psychophysiological mechanisms of listening, identifies types of listening, and systematizes exercises for teaching listening.

Most foreign methodologists distinguish three main types of communicative listening depending on the completeness and accuracy of understanding foreign language speech by ear:

1. Listening with an understanding of the main content involves processing the semantic information of the sounding text in order to separate the new from the known, the essential from the unimportant, and to fix the most important information in memory;
2. Listening with a full understanding of the content involves a complete, accurate, and rapid understanding of the speech being spoken. Perhaps as a result of automation and the perception of sound forms, recognizing its elements, synthesizing content based on them, requires a high degree of automation skills, concentration and hard work of memory.
3. Listening with selective understanding of information — the main task is to isolate the necessary or interesting information in the speech stream (arguments, details, keywords, examples, specific data). When listening with a selective understanding of the requested information, where there is no need to fully understand the text, the percentage of unfamiliar vocabulary increases from 5 to 10%.

OBJECTIVES

Listening is the goal of learning both as an end result and as an intermediate one. At the same time, listening is also a powerful tool for teaching Russian. Listening contributes to the assimilation of the lexical composition of the language and its grammatical structure. Moreover, listening makes it easier to master speaking, reading, and writing. Listening skills are the key to success in learning Russian as a non-native language. The formation of an understanding of speech by ear should take place in the natural conditions of sounding speech. Listening, as a means of learning, stimulates the educational and communicative activities of cadets. Improving the effectiveness of listening training has a significant positive impact on the effectiveness of foreign language teaching in General [5].

The issues of teaching non-philological students to study listening and taking notes when learning Russian are considered to be one of the most significant in the light of the communicative

methodology [6]. Students' listening skills are also important for everyday communication. The highest criterion of language proficiency is the effectiveness of communication in accordance with the situation and circumstances, special attention is paid to the ability of the cadet to demonstrate communicative competence. In real communication conditions, the specific weight of speech perception by ear is in the range of 40 to 50% [7]. Oral speech is a means of performing two types of activities—speaking and listening. The use of oral speech for communication implies both its generation and its understanding. The mechanisms of speaking and listening are closely related, and sometimes coincide. Learning to listen is not possible without learning to speak and learning to speak is not possible without learning to listen. At the same time, listening is the most difficult type of speech activity for training, which includes both verbal understanding, based on the cadet's speech experience, and subject understanding, based on their life experience and knowledge of the communication situation. Listening as a receptive type of speech activity is listening simultaneously with understanding the speech that is being spoken, which allows the recipient to make a certain conclusion, which is preceded by the analysis and synthesis of the meaning of multi-level units (phonemes, morphemes, words, sentences).

MEDOTOLGY

It is known that for a successful listening process, such initial abilities of cadets as memory, attention, hearing, imitation, guess, prediction are necessary. These cognitive mechanisms are the basis for the formation of skills necessary for listening: technical, language, speech, and communication.

To ensure a positive result of listening, it is necessary to organize the process of learning listening methodically, which means that the method of teaching Russian as a non-native language has the task of properly organizing and planning this process, so that the level of formed auditory skills of cadets meets the needs of their further successful inclusion in the workflow.

At present, in the current programs and standards, listening as a type of speech activity is declared as a practical goal and means of training, which involves the gradual formation of appropriate (receptive) skills and abilities in cadets. At the end of the training in the listening aspect cadets must:

- understand the main content of the text (determine the topic, the main idea of the message, the main facts reported, establish the logical and semantic structure of the statement);
- understand the relatively complete content of the text (establish the sequence, logical connection of facts, understand the



relationship of phenomena, events, actions, identify causal relationships in the message, understand all the information in pragmatic texts);

- Understand with selective extraction of information (highlight the necessary or interesting information in the speech stream).

The effectiveness and efficiency of the process of learning to listen and take notes of a monologue audio text is achieved in the presence of a number of factors, namely, an effective learning model, the quality of the auditory material and its presentation [6].

When preparing audio materials, it is necessary to know that listening difficulties may be related to: the language form of the message, the semantic content of the message, the conditions for presenting the message, and the sources of information. Following this structure, you can define a construct when testing listening as follows:

- knowledge of the sound system (phonology, accent and intonation),
- understanding of particular linguistic meanings (this includes all knowledge of grammar and vocabulary),
- understanding full linguistic meanings (knowledge of grammar and discourse, as well as understanding longer texts),
- Understanding inferred meanings (knowledge of grammar, discourse, and pragmatics, i.e. understanding implicit meanings and possible inferences) [8].

Optimal and effective ways to solve communication failures in the situation of intercultural oral communication can be found by using compensatory skills in listening. Compensatory skills allow students to understand the sounding text in conditions of limited language and speech experience. In this regard, the formation of compensatory skills among cadets of a non-linguistic specialty is extremely relevant. It is important to note that if the level of redundancy of unfamiliar vocabulary is too high and it prevents understanding of the general meaning of the utterance, no compensatory skills should be mentioned [9]. This is especially true of colloquial formulas, clichés, and idioms. The meaning of these expressions is not always determined by the meaning of the words they contain. Therefore, they should simply be well known [10].

In the process of listening, students usually strive to catch the propositional content, which leads to a lack of understanding of the implicit meaning transmitted by the speaker. When teaching listening, the main focus is also on learning to understand global and detailed information. In textbooks, there are almost no tasks for inference, understanding the intention of communicants, their social status and position. Therefore, the problem of implicitness in the context of

dialogue is of particular interest, namely, the recipient's strategies, which are aimed at decoding the surface structure of the text, its folding, compression in order to transform it into a mental representation, since the final goal for the recipient is the correct understanding of the recipient's intentions.

Based on this, we proposed to include models for understanding implicit (hidden, implicit) meanings transmitted through indirect speech acts in audio materials. Thus, from the speaker's intentions, it is possible to analyze the ways of expressing each intention and develop models of their generation that are highly reproducible and reflect certain language constructions, which makes it possible to describe and present them for educational purposes.

We should also pay attention to the selection of the text genre for listening. A text is primarily a unit of communication, so it necessarily pursues a specific communicative goal and expresses a specific communicative intention.

At the National guard Military-technical Institute teachers of Russian language use texts for conversational and natural communication purposes related to certain topics for the first year cadets, and in the second year of training – texts with military themes. The question of the genres of educational texts is very important for the effectiveness of listening tasks.

Cadets should be introduced to the genres related to their specialty, not simultaneously, but sequentially, observing the principle from easy to difficult. We can move to the next genre when the students already understand the texts of the studied genre well enough. Then, simultaneously with learning a new genre, we should also listen to the texts of previously studied genres. And only at the final stage of language course, students will be able to successfully perceive texts of any genre.

Listening also allows you to significantly replenish the lexical stock of cadets'; involuntary memorization of vocabulary is a good example for this. Analysis of the specifics of verbal memory shows that when expanding the foreign language thesaurus, cadets should rely on involuntary memorization, since it creates the best conditions for learning all the connections of a word in a complex. Involuntary memorization is the process of learning something without prior intent, as well as mastering one material with the intention of learning another. In the process of involuntary memorization, cadets learn lexical material without setting up to study it, or learn new lexical units during the performance of some other task, such as reading or listening to a text.



CONCLUSION

Based on the presented materials, we can draw the following conclusions:

- Listening is an important and fundamental aspect of language learning;
- Listening requires students to demonstrate versatile abilities;
- Listening can cause significant difficulties in its development for cadets-non-philologists, these difficulties can be associated with both initial competencies and psychophysiological features;
- To improve the effectiveness of listening, teacher should carefully approach the selection of audio materials;
- Materials should be selected in such a way that they ensure the development of compensatory skills in cadets, understanding and assimilation of implicit (hidden) meanings of speech and cover genres of everyday, cultural and professional orientation, namely the military structure;
- Listening contributes to the replenishment of cadets' lexical baggage due to involuntary memorization of lexical units and language structures.

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IMPROVING THE SOLUTION OF NON-STANDARD PROBLEMS IN SCHOOL PHYSICS LESSONS

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ABSTRACT

The article reveals methods for developing students' physical knowledge by solving non-standard problems in teaching physics and how to implement them.

KEY WORDS. *Logical thinking, creative skills, training, development, method, technique, physical activity, physical process.*

INTRODUCTION

It is planned to create conditions for the implementation of the paradigm in modern general secondary schools, which in many respects are ready for the formation of subjects, their individual characteristics and self-development in accordance with personal experience. At the same time, given the current system of school education, including the lack of attention to non-standard issues in general secondary school textbooks, we will try to propose to improve the level of knowledge of students by strengthening this method.

To do this, the formation and development of the subject of educational activity takes place in the process of its implementation: the need for this activity creates a desire to learn, and the essence of educational activity forms the ability to learn. The desire and ability to learn characterizes the topic of the learning activity.

THE MAIN RESULTS AND FINDINGS

In the process of solving problems in physics, students' logical thinking expands, their creative abilities develop. They have a broader understanding of



the essence of physical phenomena, a deeper understanding of the practical application of the laws of physics. Get acquainted with the function, structure, principles of operation of many physical measuring instruments, have the skills and abilities to work with them. The issues also instill in students diligence, courage, will and character. By analyzing the literature on many problem-solving methods and based on experience, there are general aspects of problem-solving for all sections of the physics course and specific aspects of problem-solving methods for each major topic. The following is a brief overview of the general aspects of problem-solving techniques in physics:

1. It is known that in the content of each physical problem lies a special view of the phenomena and laws of physics. Therefore, in order to solve a simple or complex problem of any branch of physics, it is necessary to study in depth the theory that applies to it. It is impossible to solve a problem without knowing the theoretical conclusions, the formulas that represent the actions.

2. There are a few solutions to the issue carefully read and understand the contents of the study. As soon as you read the terms of the problem, you should not focus on the size you are looking for and try to find it quickly. On the contrary, for example, reflect the physical phenomenon and understand this situation need to remember the underlying physical laws and formulas. If it is necessary to find a physical quantity, as well as to calculate the chain or to create an image, it is necessary to determine what quantities and conditions are given in the problem. The details of the case shall be recorded in the order given in its terms. If the quantities in the problem are given in the system of different units, they must be reduced to the SI system.

3. If there is a drawing or chain in the case, they should be carefully studied and copied correctly. If the subject matter design or not, the chain



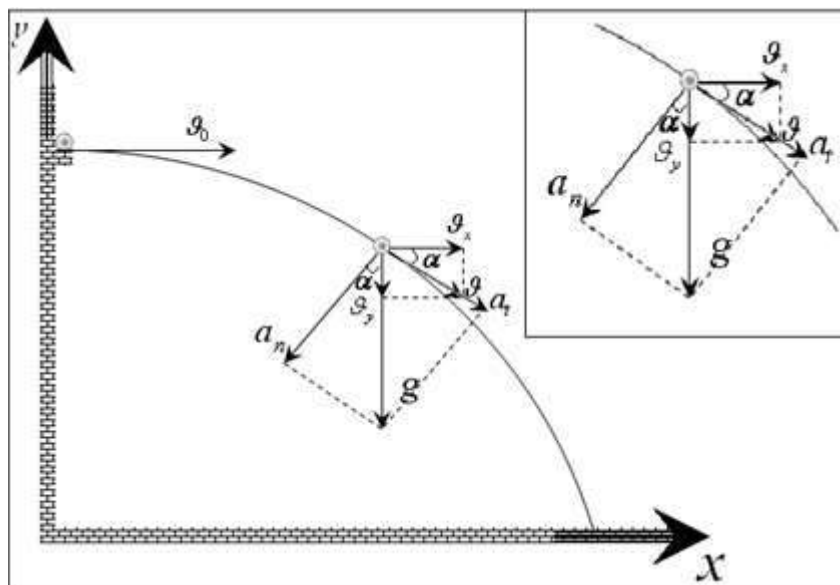
according to the physical condition of the process to envision, and reflecting the full contents of the issue should have drawn or chain.

Problem 1 (problem for 7th grade). The object was thrown from the tower in a horizontal direction at a speed of 15 m / s. Determine the radius of curvature of the trajectory of the body 2 s after the start of the motion. Ignore weather resistance.

Solution: Based on the above recommendations to the reader, we will create a problem-solving model as follows.

<p>Given :</p> <p>$v_0 = 15\text{m/s}$</p> <p>$t = 2\text{s}$</p> <hr/> <p>R=?</p>	<p>The x and y components of the instantaneous velocity of a body:</p> $\begin{cases} v_x = v_0 \\ v_y = gt \end{cases}$
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So, depending on the problem, the student will need to explain the diagram in Figure 1 below.



1- picture



The diagram describes the situation at time $t = 2s$. According to it:

$$\begin{cases} \cos \alpha = \frac{a_n}{g} \\ \cos \alpha = \frac{g_x}{g} \end{cases} \Rightarrow \frac{a_n}{g} = \frac{g_x}{g} \Rightarrow \frac{a_n}{g} = \frac{g_0}{g} \quad (1)$$

To solve the problem, you need to use the following formulas to solve the problem.

Here: a_n - acceleration of aspiration to the center $a_n = \frac{g^2}{R} \quad (2)$

g - the instantaneous speed of the object $g = \sqrt{g_x^2 + g_y^2} = \sqrt{g_0^2 + (gt)^2}$
(3)

We express (1) by (2): $\frac{\frac{g^2}{R}}{g} = \frac{g_0}{g} \Rightarrow R = \frac{g^3}{g_0 g}$

(3) considered: $R = \frac{(\sqrt{g_0^2 + (gt)^2})^3}{g_0 g}$

Calculation: $R = \frac{(\sqrt{15^2 + (9,81 \cdot 2)^2})^3}{15 \cdot 9,81} \approx 104m$

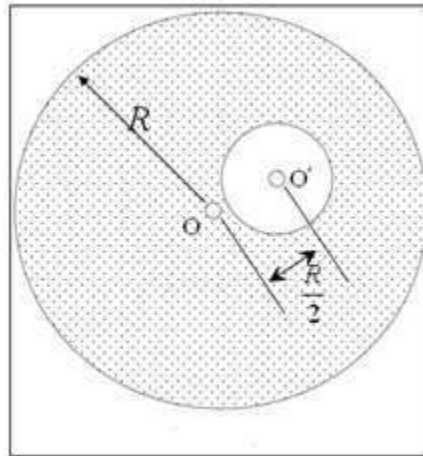


Figure 2

answer:
$$R = \frac{(\sqrt{g_0^2 + (gt)^2})^3}{g_0 g} \approx 104m$$

2 - (7-designed class issue). In a smooth horizontal plane lies a pallet of mass M . The pallet can move in this plane without friction. A body of mass m is placed on the pallet. The coefficient of friction between the pallet and the body is k . How is the power pallet horizontal direction F slides on the value of the object palette? If the length of the pallet is l , how long will it take for the body to fall off the pallet?

To solve the problem, we encourage students to solve this problem using the methods we have suggested above.

Given :	The equations of motion of a board and a body are as follows: $ma = f$ (1)
M, m	
k, l	
$F=?$	
$t=?$	$Mb = F - f$ (2)

In this case - the friction force, a and b -



accelerations.

No friction as one, then $a = b$. The acceleration and friction force of the equation of motion can be determined.

Friction force: is equal to $f = m \frac{F}{M + m}$.

In order to avoid friction and friction force $f \leq kmg$, that is $\frac{F}{M + m} \leq kg$ must satisfy the inequality.

if $F > k(M + m)g$ sliding friction occurs. In this case, equations (1) and (2) take the form From these equations we find a and b :

$$\begin{cases} a = kg \\ b = \frac{F - kmg}{M} \end{cases}$$

From this $b > a$ turns out that

The acceleration of an object relative to a board is opposite to the direction of motion.

in terms of size $\frac{F - kmg}{M} - kg$ is equal..

Time of body movement on the board: $t = \sqrt{\frac{2lM}{F - kg(M + m)}}$

Answer: $F > k(M + m)g$, $t = \sqrt{\frac{2lM}{F - kg(M + m)}}$



To achieve the goal you need to perform the following tasks:

- Analysis of educational activities, describing the purpose, composition, content, conditions of formation and development of educational subjects.
- Summarize information on the development of ideas about the role of tasks in school physics education; to determine the level of development in didactics and methods of applying non-standard physical problems in the formation of the topic of educational activities in the lower grades of school.
- The formation of criteria for assessing the quality of non-standard physics problems and the identification of their methodological capabilities are used as a means of educating the characteristics of the personality of a general secondary school student, which characterizes the subject of study.
- Preparation of a set of non-standard physics problems for general secondary school and the development of guidelines for teachers describing the methods of working with exercises of the specified genre.
- Conduct an experimental test of the effectiveness of the proposed teaching methodology.

CONCLUSION

In conclusion, it is difficult for students to have a broad understanding of physical processes in solving simple physical problems. In solving a non-standard problem, one not only understands the physical content of the problem but also helps to develop the ability to think logically.



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DRAMATIC EFFECTS IN THE SHORT STORIES OF K. RAKHMANOV

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ANNOTATION

For Karakalpak literature XX-century was the century of close interaction with world literature. This process had a huge impact on the expansion of the genre diversity of Karakalpak literature. In literature appeared a great number of new genre kinds: drama, tragedy, comedy, story, novel, ballad, tale, poem and etc.

One of new genre varieties in Karakalpak literature is origin of mixed genre-forming. i.e Works, including in it features of lyrics and drama, lyrics and epos, comedy and tragedy, lyrics and prose and etc. and Karakalpak poets, writers became successfully in using new genres.

The signs of the drama in this or that measure can be presented in epos works, but signs of the epos are not alien to the drama. Their lyrics penetration is much more productive than lyrics penetration into these genres and inside out.

This is evidenced by the fact in the Karakalpak literature today there is often processing of the epic works in drama. But it should be recognized that there is little success, because any original work is unique, especially dramatic. Based on this concept, we tried to consider the problem of the synthesis of genres by the example of works by K.Rakhmanov where interpretation of tragedy, comedy, epic is evident.

KEY WORDS: *genre; drama; epos; synthesis; tragicomedy; novel; plot; composition; conflict.*

DISCUSSION

Kenesbay Rakhmanov is one of the well-known Karakalpak playwrights and the author of many drama works. Perhaps, therefore, there are many elements of drama including dramatic effects in his prose. In the literary work, drama makes events tenser and connects the internal feelings of the characters with the outer environment arousing the readers' interest in the work.

In comparison with other genres the events in the dramatic work are more entangled and tenser, the spiritual life of the characters come under the influence of the outer world.

Therefore, the drama of the event and the character's spiritual drama come to the fore. Sometimes this phenomenon in the literary work is called dramatic effect" [1.67].

Some of the writer's prose works had been redone by him and later became popular as dramatic works. For example, on the basis of the short story "Noser" (Torrential Rain) he created the comedy

"Lakkhylyar emleukhanada" (Comedians in Hospital). As we mentioned before, in the prose works of the writer, the dramatic elements, especially, the intertwining of events and the tension of the internal feelings of characters occur more often. This strengthens his epic works' eventfulness and the attractiveness of their conflicts.

Although the comedy is mainly based on the events that took place in the hospital in the story Torrential Rain, the idea of the play differs from the story. That is to say, in the comedy Comedians in Hospital, the playwright put forward high humanistic ideas by connecting fates of several characters. Especially, it is seen in the character of Atazhan from the story and in the character of Alpamys from the play. In the short story all events develop around Atazhan, whose gullibility and humbleness cause the dramatic episodes to increase. As for Alpamys, he is absolutely different hero. He is a personage who has chosen the wrong way since his childhood, furthermore, he is ill-bred, and prone to commit



crime. In hospital, the patients who were in the same ward with him, try to educate and show him the right way.

However, their “pedagogical activity” did not bring any result. He escaped the ward after having beaten Dauen Zhilli. In this work the dramatic effects are conveyed through the image of Alpamys.

We also dwelt on the events in the hospital while describing the characters from the story *Torrential Rain*. K. Rakhmanov used this scene successfully and managed to create one more dramatically piece by developing the images of its characters. Using one scene from the story *Torrential Rain* as a basis, K. Rakhmanov reveals the images of each character not by describing them one by one, but according to the drama genre, by way of their words and level of their personal vocabulary.

Almost all the characters in the play are the ones from the story *Torrential Rain*. There is not any particular difference in their behaviors, speech and characters. However, the image of Atazhan, the main character of the story, is not represented in the play. Instead of him the image of Alpamys is introduced in the play. Although this image is used only as a secondary character, the playwright used it productively to entangle the events of the play and to gather the heroes for a certain goal.

In general, as most people agree, the play *Comedians in Hospital* is worth of its name, and one of the achievements of the comedy genre in Karakalpak dramaturgy. All the same, one can see that the events lack of wholeness to some degree, and the images are not revealed in full. In most cases there are descriptions peculiar to the genre of prose. In our opinion, it might have been due to the fact that it is based on the short story.

”If the writer creates a dramatic work on the basis of the plot, event, or material of a prose work, he cannot reach a creative success. Both in prose and poetry, the author can freely describe the activities of characters, their lives through his own thinking and feelings.

However, in dramaturgy writers do not have such an opportunity. In a play, the event, the conflict, characters, and the portrayal appear on the stage all together right before the eyes of the spectators. Even a tiny defect in one of them can harm all the details,” said a literary critic A. Nasrullaev [2, 137-138].

It is true that such drawbacks can also be found in the creative works by K. Rakhmanov. In the work of drama, words, actions and portrayals are considered as unalienable parts completing each other. Actions and appearance define the fate of the hero. Therefore, this genre requires from the author a great concentration and experience. In its turn, the novel “*Akhybet*” (*Consequence*) served as the

material for the tragicomedy “*O Dunyuagha mirat*” (*The Invitation to the Other World*).

The novel is about the events of the 80s and is regarded as one of the most unique productions in our literature. The difference of the novel from the other books of the writer is that the events are not retold by the author or by one of the main characters, but by each of the images of the book. In other words, each image’s features become known through their dialogues and monologues.

The author created truthful dialogues and monologues of each character of the novel *Consequence* in order to make each individual image look original. The language used in the novel is true to the life and close to spoken, everyday language rather than artificial, made up words. Such an achievement we can see not only in the words of the main characters mentioned above, but also in the language of the secondary, minor characters.

The image of Taspolat is a typical image of high – ranking officials of the so - called stagnation period in the society. Such disgraceful figures we can find in the image of Amirkhan in Sh. Seitov’s novel “*Zhaman Shangarakhtaghy Akhtuba*” (*Akhtuba in Zhaman Shangarakh*), in the image of the director in A. Abdiev’s novel “*Zhin Zhyppylar uyasy*” (*The Nest of Devils*). In these books, the officials appointed by the government tend to mock at women. “*The Invitation to the Other World*” is a tragicomedy consisting of two parts, five scenes, a prologue and an epilogue. A few images such as Taspolat, Ulperi, Nurpolat, Sherniyaz, Aiparsha, Auez, Mamont, Shchuka, Matmuratov, and Dauranbekov are the heroes of the play. The same characters are the main characters of the novel *Consequence*.

If we pay attention to the way of creating the images of the characters in the play, we can see that their activities, behavior, and language do not differ much from those described in the novel. The author adapted some events of the plot of the novel to the stage and improved considerably the dialogues and monologues of the characters. As a result, this production is more interesting than the comedy *Comedians in Hospital* created on the basis of the short story *Terrestrial Rain*.

As the play *The Invitation to the Other World* is a tragicomedy, we see in the images of the characters the features peculiar to these two genres.

For instance, there are many comic moments in the first and second scenes of the first part of the play. Here, the dialogues among Taspolat, Ulperi and Sherniyaz are portrayed skillfully. As the events develop, the content of the play changes and the events get entangled in sad incidents. The main cause of this, of course, is the main idea of the production i.e., the regrettable results of bad habits such as



obsession with flashy things, fraudulence, and amoral behavior and other vices.

Thus, we can consider the play *The Invitation to the Other World* one of the best productions in the Karakalpak dramaturgy in terms of content, ideological and thematic meaning and the skilful creation of images.

The novel “*Tunghysh mukhabbat*” (First Love) by K. Rakhmanov was one of the largest creations in our national literature in the period of independence. The events in the book are depicted in direct connection with the main hero Shamurat. Because with the help of his monologues the author creates a complete image and portrays the images of other characters on the basis of Shamurat’s views. In other words, the novel is told completely through Shamurat’s narrations.

Famous Kazakh literary critic B. Wakhatov once wrote, “The real artistry can be shown by demonstrating man’s spiritual state and behavior. However, that character and behavior should change and develop like a live organism” [3, 62].

Similarly, the image of Shamurat is the image which develops from the beginning to the end of the novel. If at the beginning of the novel we see the image of a simple adolescent, at the end of the book we can see a total turn in the image, absolute change in his conscience.

In the monologues of this image, which was created as the narrator of the events, his struggles in his life, the hardest moments, the new feelings born in his internal world are revealed. Describing the latest results of the most complex events experienced by the other characters, the author was able to convey each character’s intended idea. Here, the skill of the author allowed him to unify his own words with that of the character, and depict what he could not convey in his own words with the help of the character’s words.

In the novel under discussion, dialogues also play a certain part in revealing the mutual relations, features of characters, spiritual worlds of the heroes, and, in general, the content of the book. Along with it, each character becomes a whole image with its original way of speech.

For example, in the dialogues between Shamurat and his father, an old man Baimurat, along with their own relations the other characters are also discussed. In such cases, the communications between the characters develop their own images while disclosing the traits of the other characters.

Take for instance this dialogue, “Shamurat, stop beating about the bush,” said my father calling me to order. – I have almost spoken to everybody. It goes without saying when our community leader Babakeng has given us his permission. No one can disobey him. I’ve also got the key. Now go and open the big padlock of the Aziyra’s house. Gather your

friends. Sweep and tidy up the rooms. No one has lived in that house ... God knows, maybe snakes are breeding there.

- Snakes!? Then I won’t even go there. I’m very afraid of snakes, shrieked I.

Daddy smiled.

- If Aitmurat goes there, all snakes will run away. Maybe even a tiger gets scared of his appearance” [4, 19].

This is a dialogue between Shamurat and an old man Baimurat. In it not only the everyday problems are discussed but also the perseverance, egoism and hot temperedness peculiar to the image of Aitmurat.

As for the image of Nazlybiyke, we can see that she is a lot more patient than Aitmurat, always acts cautiously and never says anything without being sure of her words. She knows that Aitmurat has left her forever, but, all the same, she stays with her mother-in-law and father-in-law, and continues to fulfill her duty as the daughter-in-law. She wants to live surrendering to her fate without paying any attention the gossips going around. Unfortunately, Nazlybiyke cannot afford to tolerate all the hardships of life. As a result, after the unpleasant incidents with her brother-in-law Shamurat, she also has to go far away.

Since the events in the novel take such a strange turn, Nazlybiyke’s image might seem weak. However, she finds power in herself to change her fate for the better and to start a new life.

In general, the characters in the novel differ significantly from each other; in creating them the author tried his best so that the activities and words of one character would not be repeated by another. Although most images are of general humanistic character, their outlook and psychology are not like each other. In spite of the fact that the writer created some disgusting images causing hatred in the readers, he managed to show the difference in their characters.

People and personages of different type are depicted in the novel. Such a good many images serve to completely reveal the eventful period described in it. The novel’s richness in events, images and versatility, gives it an epic character.

“In Epic work, one of the main tasks is portraying the masses, showing their character”, said Academician M. Nurmukhametov [4, 144]. Exactly such descriptions of the masses can be found in the novel. Take for example, the wedding party of Baimurat’s son Aitmurat, the scenes from the funeral of the oldest person of the community Babaniyaz.

It should be pointed out that in K. Rakhmanov’s prose works, the feeling of the spirit of the time, closeness to the real life are the main advantages. Such a characteristic peculiarity



strengthens the realistic spirit of the events and images depicted in his stories and novels, and their connection with people's life.

“Here, in connection with this the personal features of each writer come to light. Therefore, it is impossible to conclude and say that one can write about such things and cannot write about other things... We have decided to assert in this chapter of our work that the main principle of the belles-lettres is to instill confidence in people by truthfully describing the social life or the circumstances. [5, 21].

Well then the object of research of the literary work is the life in general, nature and social events. However, in the center of the research is man, his life, actions, internal feelings, struggles, love and problems. Therefore, we can conclude that the main subject of the literary work is man.

The writer skillfully used various methods of creating external portraits, dialogues, internal monologues. The writer used skillfully various, which had already been tried in the world literature, to describe his images completely and deeply in accordance with their characters. The use of these methods makes the heroes' characters more natural and lifelike.

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THE INVESTIGATION OF TECHNOLOGICAL AND PHYSICO-CHEMICAL CHARACTERISTICS OF ACTIVE SUBSTANCES AND THEIR GRANULATES FOR THE DEVELOPMENT COMBINED DRUG “ANALPHENON”

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ABSTRACT

In order to theoretically substantiate the composition and technology of “Analphenon” capsules, we have studied the basic physicochemical and technological properties of samples of substance and granulates. These properties are interrelated and in a certain way can affect the process of obtaining high-quality capsules with the necessary therapeutic effect. Substance — powder and masses for encapsulation — was subjected to physico-chemical and pharmacotechnological research. The results will serve as the basis for our further research on the development of capsule technology “Analphenon” a.

KEY WORDS: *capsule, technological properties, fractional composition.*

INTRODUCTION

The dosage form of the drug is no less important than the choice of the drug itself, which is part of successful therapy [2]. Today, the capsule is one of the most common forms of solid medicines after tablets. The solid (two-section, detachable) capsule has always represented modernity and innovation, despite its widespread use in medicine and pharmaceuticals at the end of the 19th century. It has stood the test of time, because it has constantly changed and improved in accordance with the needs of consumers: increasing the speed of filling and automation of production, increasing quality requirements and new types of formulations [4,5,6].

Pharmaceutical factors determine the quality, bioavailability, therapeutic efficacy and safety of drugs. One of them is the production process for the production of dosage forms, which is of particular importance and significance in the development of

new drugs and the improvement of compositions and technology [3]. The study of pharmaceutical factors is of practical importance and remains promising. The quality of the capsules substantially depends on a number of technological factors - fractional composition, particle shapes of the pressed material, residual moisture and pressing pressure, which have a significant impact on the technological parameters of granules and the quality indicators of capsules [1,7].

Given the above, an urgent task is to study the technological characteristics of the substance and granulate in order to scientifically-theoretical justify the technology of the capsule.

MATERIALS AND METHODS

The following raw materials were used in the preparation of this medicine: substance of metamizole sodium, series 0070215, manufactured by Hebei



Jiheng (Group) Pharmaceutical Co., Ltd (China); substance drotaverine hydrochloride series 14009246 manufactured by “Xian Accenture Biological Technology Co., Ltd” (China); substance diphenhydramine hydrochloride series 150216 manufactured by Xian Accenture Biological Technology Co., Ltd (China); Potato Starch - (BP, Eurph, USP); Calcium stearate - TU 6-09-4233-76.

RESULTS AND DISCUSSION

Study of the structural and technological properties of the substances "Analfenon".

The study of the size, shape and surface relief of particles and granules of medicinal substances was carried out using an MBI-15 microscope, enlarged 400 times, which allows to characterize the shape and surface of the particles, as well as the average linear size of the dominant fractions.

To select the optimal composition and develop rational capsule technology, it is necessary to have complete information about the physic-

chemical, microscopic, and technological properties of drugs. In order to select the optimal technology for producing capsules, at the first stage, the technological characteristics of the substances metamizole sodium, drotaverine hydrochloride, and diphenhydramine hydrochloride were studied. From the results presented in Table 1, it is seen that the particles of the substance metamizole sodium have the form of powders in the form of prismatic and lamellar, and the particles of the substance drotaverine hydrochloride are mainly cubic and plate crystals, so that the particles of the powder drotaverine hydrochloride are significantly larger than the particles of metamizole sodium. Diphenhydramine hydrochloride mainly consists of crystals in the form of sticks and their fragments. The values of the technological characteristics of these active substances differ significantly. So, metamizole sodium powder, in comparison with other substances, has a low flowability, high bulk density and less compaction.

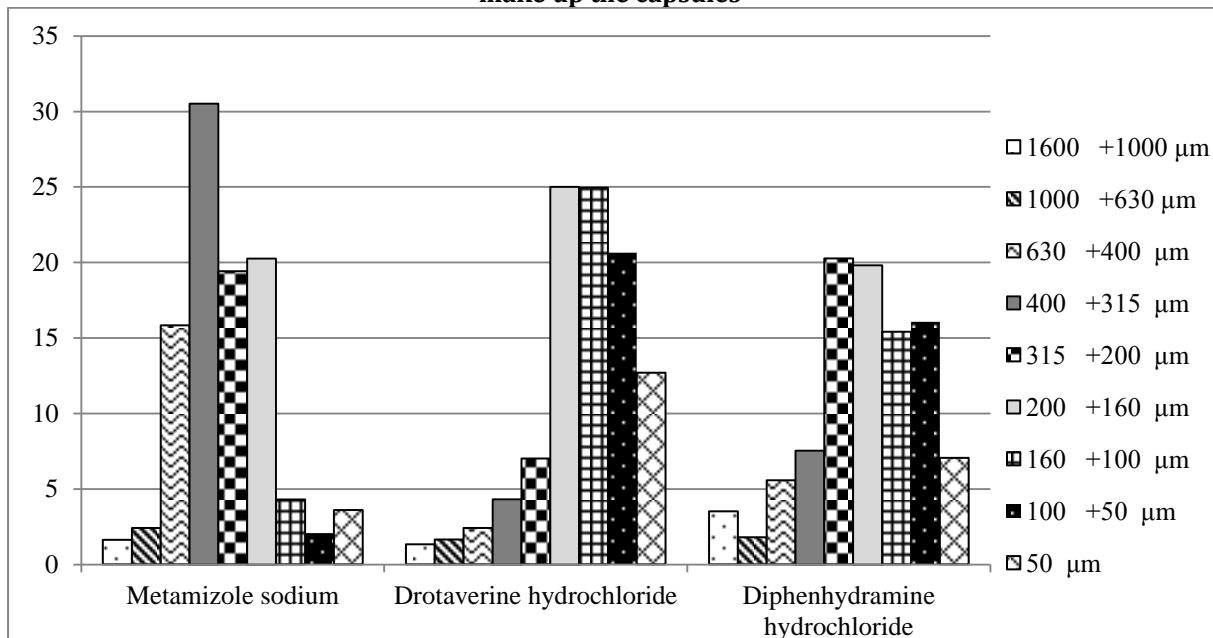
Table 1

The results of determining the microscopic and technological properties of the substances that make up the capsules

Properties	Substance		
	<i>Metamizole sodium</i>	<i>Drotaverine hydrochloride</i>	<i>Diphenhydramine hydrochloride</i>
Description and shape of powder particles	white prismatic and lamellar powder	yellow or light yellow cubic and plate crystals	white or colorless crystal wand
Flowability, 10⁻³ kg/s	1,15	1,48	1,36
Angle of repose, degrees	54,7±2,3	32,0 ± 2,0	42,5 ± 2,5
Bulk density, g/cm³	0,865 ± 0,033	0,316±0,035	0,501 ± 0,025
Compressibility factor	1,76	1,93	1,89
Porosity, %	75,29	70,68	67,81
Moisture content, %	4,36±0,02	0,55±0,05	2,67 ± 0,03

The fractional composition of active substances was studied according to the GF XI method by sieving through a set of sieves with openings of 1000, 630, 400, 315, 200, 160, 100 and 50 μm (Fig. 1). As can be seen from the data presented, a predominantly large amount of

metamizole sodium substances (86.01%) is represented by a particle size of -630 + 160 μm, for which the average particle size is 395 μm.

**Figure 1****The results of determining the microscopic and technological properties of the substances that make up the capsules**

The results of studies conducted in similar fractional ranges showed that the largest amount of metamizole sodium (82.01%) is in the range of 630 + 200 µm, for which the average particle size is 395 µm, for substances drotaverine hydrochloride (83.3%) in the range of -200 + 50 µm, in which the average particle size is 125 µm and for diphenhydramine hydrochloride the largest number of particles (71.55%) between fractions is -315 + 50 µm, for which the average particle size is 182.5 µm.

According to the research results, the arithmetic mean values of the mass-average particle sizes were determined, which for sodium metamizole are 395 microns, drotaverine hydrochloride 125 microns and diphenhydramine hydrochloride 182.5 microns. Comparison of the obtained results with particle sizes showed that each of the four active substances exhibits a tendency to strong adhesion, as a result of which conglomerates are formed.

The results of studying the microscopic and technological properties of the substances metamizole sodium, drotaverine hydrochloride and diphenhydramine hydrochloride indicate the impossibility of obtaining capsules by the direct encapsulation of powders, since the unsatisfactory technological properties of the above active substances do not allow for the normal encapsulation of capsules that meet the requirements of the standards.

The study of the technological characteristics of the granulates of the combined preparation "Analfenon".

To obtain high-quality capsules, it was necessary to change the technological properties of the active substances that make up their composition in a positive direction. In practice, this is achieved by the use of auxiliary substances belonging to various groups, as well as the use of special technological operations leading to improved properties of the pressed mass.

At the next stage of the study, Analfenon granulate was obtained using the traditional technology of wet granulation by forcing a moistened mixture. As a granulating agent used a 2% paste of potato starch. Each component of the proposed combination means is weighed on an electronic balance. Taking into account the crystal structure, a solution of diphenhydramine hydrochloride in water was used. This ensures uniform distribution of the active substance in the drug. Diphenhydramine is dissolved in water in a ratio of 3: 5. Metamizole sodium, drotaverine hydrochloride, potato starch are mixed with a solution of diphenhydramine and granulated with a 2% potato starch paste. The mixture is dried in an oven for 15-20 minutes. Then the dried granules are passed through a sieve to obtain granules with uniform sizes. Then the granules are dusted with a powder of potato starch and calcium stearate.



The technological characteristics of the shown in Table 2. obtained granulate samples were satisfactory, they are

Table 2
Technological characteristics of granules obtained by wet granulation

Indicator	The value of indicators
Appearance	Granules yellow or yellow with a slightly greenish tint
Fractional composition, %	+2500 μm - 0,63
	-2500 +2000 μm - 16,81
	-2000 +1000 μm - 23,67
	-1000 +500 μm - 34,18
	-500 +250 μm - 18,11
	-250 μm - 6,60
Flowability, g / s	4,20 \pm 0,13
Natural angle repose, degrees	28,0 \pm 2,0
Bulk density, g/cm³	0,547 \pm 0,021
Compactibility	0,34 \pm 0,01
Moisture content, %	0,86 \pm 0,04

It is noted that with insufficient wetting of the mixture, the granulation process does not occur completely, a large amount of non-granulated material remains. In case of excessive moisture, granular enlargement and lump formation are observed. It has been experimentally established that the formation of granules is facilitated by the introduction of a granulating liquid in which drug substances are soluble. This leads to the adhesion of particles to each other due to the formation of liquid and then solid-phase bridges.

CONCLUSION

The method and mode of granulation "Analfenon" were selected, the effect of fractional composition, relative humidity and pressing pressure on the quality indicators of capsules "Analfenon" was studied. It was revealed that the fractional composition and technological characteristics of the granulate showed satisfactory results. The technology for producing granules with a positive result has been tested in a production environment.

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MODERN DEVELOPMENT OF THE WORDS IN UZBEK LANGUAGE

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ANNOTATION

As a result of the economic, political, and cultural ties between people, elements of a linguistic structure go into the same language, grammatical, and phonetic units, thus adding to its own element. Words that have passed to the modern language of the Uzbek language, follow all the rules of the Uzbek language, and create new words by adding affixes, sorted by consensus categories, and have their own peculiarities. It should be ensured that the dictionary unit that is included in the modern layer must meet one basic requirement, and that the new term does not have to be a feature of novelty or old paint. This article emphasizes the complexity of the modern terminology from the point of view of activity, the fact that their active use can only be statistically determined, and the vocabulary adds new words in the developmental phase of the language.

KEYWORDS: *method, grammatical elements, glossary, dictionary content, immanent development, assertion, deposits, abbreviations*

СОВРЕМЕННОЕ РАЗВИТИЕ СЛОВ В УЗБЕКСКОМ ЯЗЫКЕ

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Аннотация

В результате экономических, политических и культурных связей между народами элементы языковой структуры переходят в одни и те же языковые, грамматические и фонетические единицы, добавляя тем самым свой собственный элемент. Слова, которые перешли на современный язык узбекского языка, следуют всем правилам узбекского языка и создают новые слова путем добавления аффиксов, отсортированных по категориям консенсуса, и имеют свои особенности. Может быть следует убедиться, что словарный модуль, включенный в современный слой, должен соответствовать одному основному требованию и что новый термин не должен быть признаком новизны или старой краски. Эта статья подчеркивает сложность современной терминологии с точки зрения деятельности, тот факт, что их активное использование может быть определено только статистически, и словарный запас, который добавляет терминовую базу в фазе развития языка.

Ключевые слова: *метод, грамматические элементы, глоссарий, содержание словаря, имманентное развитие, утверждение, депозиты, сокращения*



DISCUSSION

Observations show that during the nineteenth and twentieth centuries, most of the words derived from Western European languages were introduced through the Russian language at the request of the period, but by the present time, the assimilated words are directly entering to the Uzbek language correctly. A number of words that have come from the Russian language to this day have left the modern layer of the Uzbek language, unable to express the emerging and emerging concepts, and have taken their place in our language. The prospect is releasing words that are more solid. Among them, many Arabic words that remain weak in the lexical layer of the Uzbek language, mainly words that express concepts such as religion, religious law, have been actively used in the language in recent years.

Language is created by people, the processing of the common language, the selection of the best elements in it, the services of great masters of words, writers and linguists on the basis of very simple and concise expression of thoughts and feelings are incomparable. The methods and techniques of artistic re-use of the vernacular have changed, improved and refined in different periods. It is well known that Mahmud Qashqari's "Devoni lug'otit turk" is an example of such processing.

Literary language is a system of complex styles consisting of literary and artistic, socio-publicist, scientific production, technical, documentary, and so on. Alisher Navai, in his *Muhokamatul Lughatyn*, gave scientific views on language, as well as practical demonstrations of his theoretical views on language in these areas. The lexicon of any language is enriched not only at the expense of the national language resources, but also by borrowing words from other languages.

In historical periods, peoples interact in different ways, and depending on the nature of social conditions and relationships, there is no doubt that from one language to another more or less words, even some grammatical elements. It also changes in part as a result of certain interactions with other languages.

It is known that lexical units are divided into limited and unrestricted layers in terms of their use in different languages, and the unlimited layer of application forms lexical units that are common to all Uzbek speakers. The lexical units in this layer are used in the speech of everyone who speaks Uzbek, regardless of place of residence, profession, cultural level, gender, age and other characteristics, and are understandable to them. Such lexical units name objects, symbols, etc. that are necessary in everyday life, and express emotions.

One way to study vocabulary as a system is to analyze words by grouping them according to what

language they actually belong to. These groups of words are usually called lexical layers. Words in a language lexicon belong to two genetic sources: a) words that are in the same language: b) words that have entered the language from other languages. On this basis, the lexical layer of the language is divided into two:

1. Own layer.
2. Assimilated (assimilated) layer.

A layer is a set of lexicons that are mainly in that language and are made on the basis of them, as well as lexemes of other languages with their own affixes. In a number of works in the field of lexicology, the concepts and terms of layer, lexical layer are widely used. In order to know the level of study of the Uzbek lexicon of its own layer and the mastered layer, I found it appropriate to cite the comments of a number of Uzbek linguists.

F.Abdullayev uses the phrase "etymologically our own words" to distinguish the lexicon of his class from the words that have been mastered. He also uses the phrase "original Uzbek words." In determining its own and the acquired layer, it refers to the etymological language to which it belongs. Fakhri Kemal used a number of terms to distinguish his layer from the words he mastered. He sometimes used the common "Turkish lexicon". At the same time, he explained his layer under the heading "Turkish words".

Fakhri Kemal's views on his own and the acquired layers are expressed in the following lines: "The main part of the vocabulary of the languages of the Turkic peoples living in Central Asia and Kazakhstan are common to Turkic languages and the original Turkic words used for centuries. These words are the basis for enriching the vocabulary by creating new words and phrases from these languages".

Sh. For the first time in his research, Shoabdurahmanov delimits and defines the layer of self and assimilation layer, all-Turkic, Uzbek words.

Professor S. Usmanov makes a number of comments about lexical layers. He writes, "The lexical structure of the modern Uzbek literary language is mainly based on five sources:

- 1) all-Turkic words;
- 2) Uzbek words;
- 3) Tadjik-Persian words;
- 4) Arabic words;
- 5) Russian and international words.

S. Usmanov was the first to describe the unique words of the Uzbek language under the heading "Uzbek words".

Professor A. Hodjiyev explains his layer as follows: "his layer includes words that belong to the Uzbek language, as well as words that are common to Turkic languages. The Uzbek dictionary contains a



large number of words that are common to Turkic languages. The main lexical part of the Uzbek language, which is directly its own, consists of artificial words formed on the basis of its internal capabilities, its own rules in the process of development of the language.

The vocabulary of any language is constantly evolving and changing, and such changes do not happen quickly and decisively. The limited or unrestricted use of words in a dictionary is based not on the position of individuals in speech (individual speech), but on their position in the general language. The introduction of words and phrases into the modern layer does not take into account the fact that they are more or less used in speech. Of course, the words and phrases that are often used in speech usually belong to the modern layer. The modern layer also includes words and phrases that are rarely used in speech.

Words and phrases that are included in the modern layer do not have to be familiar to all members of the language, nor do they have to be used in everyone's speech. The terminology of each industry is usually known only to a representative of that industry, and many terms are unfamiliar to others, and there is no need to know these terms. Not all such terms are used in general. Terms from other languages can be added to the modern layer, regardless of whether they are used.

The development of the lexical meaning of words should also be taken into account when talking about the vocabulary of any language. It is not always easy to distinguish between the words of the Uzbek language and the words of the Uzbek language. It also depends on the specific internal features of the language. The immanent development of any language is that it is selected and used only when necessary, based on the existing conditions in the language in which it is constructed. A word chosen from another language is an integral part of its immanent development, and the language it learns becomes somewhat more active.

Observations show that in recent years, many foreign words have been used in Uzbek to express new meanings and concepts in periodicals. It should be noted that so far they have not mastered the conclusion of a few words, so their spelling is not the same. For example, it is sometimes used with a full stop (abbreviations), just as it is given in a foreign language. Their spelling is a separate topic.

The main reason for the emergence of assimilated words in the Uzbek language is their extremist nature, which is recognized as a linguistic unit. In general, it takes some time for the acquired words to take a firm place in the Uzbek dictionary. Therefore, they are first expressed in newspapers and magazines through certain concepts. For example:

Accentuation – the adaptation of firms to new conditions and various other activities in a market economy.

Deposits – deposits in banks and savings (there are several types). Words like these need to be studied separately.

In conclusion, the written and oral language of the Uzbek language is now more or less the language of foreign languages, in particular, with the growing prestige of Uzbekistan in the world, almost all languages of the world. From this point of view, it is important to us not only the issue of external influence, but also the extent to which the impact is reflected in the Uzbek language. This is due to the further development of the Uzbek language. Here, in turn, we must decide what to accept and what not to accept.

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LINGUISTIC FEATURES OF THE SCIENTIFIC STYLISTICS OF THE ENGLISH LANGUAGE

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SUMMARY

The style-forming factors of the scientific literature are the need for a logical sequence of presentation of complex material, a great tradition, therefore, the syntactic structure should be complete, harmonious and, if possible, stereotyped. In this regard, a characteristic feature of mathematical articles in English is the complex syntax, the implementation of which are common sentences with various types of composing and subordinate relationships between them. However, recently in the English scientific style there has been a trend towards simplification.

KEYWORDS: *scientific style, text analysis, grammatical assimilation, terminology*

DISCUSSION

Depending on the form of communication, genres differ in topics and structural features, the predominance of certain types of speech, the order of their sequence. The paper analyzes the lingua-stylistic features of a scientific text by the example of English dissertations for a master's degree. The scientific text occupies a special place in social communication. Scientific knowledge is the basis of scientific speech, which is fixed in the form of a text. Knowledge is a set of information, and not random facts, which are combined in the process of cognition into a certain harmonious system. The cognitive science, which has its own differential characteristics, is engaged in the interpretation of the cognitive process. The processes of globalization, democratization of public life, openness and accessibility of the latest achievements of world science allow a huge number of people to receive and exchange scientific and technical information. Scientific texts are created with the aim of forming a certain system of reflection of the reality of the description of an object, phenomenon, knowledge system, proof of the existence of

something: an object, the connection between objects or the absence of this connection.

The scientific text as a whole is the result of a scientific study with the characteristic features of oral and written communication. The problem of studying scientific texts occupied various scholars. Despite the large number of works devoted to this topic, the following definition of a scientific text stands out: "A scientific text is a unity of content, form and means of expression. The scientific text refers to the functional style of speech of a literary language, which has a number of features: preliminary reflection on the statement, monological character, strict selection of language tools, gravitation towards normalized speech." The style of the scientific text is very similar to the artistic style of speech. In the Alexandrian period, the artistic style separated from the scientific one, and it was then that the scientific terminology began to form in the Greek language.

Incomplete grammatical assimilation of book words is expressed, for example, in maintaining the plural form adopted in the language from which the word is borrowed. The following examples show



Latin scientific borrowings in English: automaton - automata, phenomenon - phenomena. Book words occupy a significant part of the lexical composition of English-language mathematical articles and are international for most languages: theorem, axiom, lemma, analysis, synthesis, statistics, combinatorics, geometrical, stereometry, endomorphism, parallelogram, parallelepiped, parabolical, extrapolate, factorial, gradient, homomorphism.

Another characteristic feature of the scientific style is the formation of neologisms. Under neologisms, following Halperin I.R. understood as "any new vocabulary and phraseological units that appeared in the language at this stage of its development and mean new concepts that arose as a result of the development of science and technology, new living conditions, socio-political changes." New concepts appearing as a result of research lead to the formation of new words for their designation, therefore it is scientific prose that is most conducive to the creation of neologisms. So, in the texts of mathematical articles, they include the following vocabulary that is not recorded in English dictionaries: poset - partially ordered set, half-life - period of semi decay.

Undoubtedly, the most striking feature of scientific texts at the lexical level is the use of scientific terminology. V. N. Komissarov defines the terms as "words and phrases denoting specific objects and concepts that are operated by specialists in a particular field of science or technology." Signs of the term are its objectivity, accuracy, as well as monosemantics, i.e. independence of context. English-language mathematical articles exhibit dense terminological saturation: function, theory, equation, segment, solution, graph, period, series, sequence, set, fraction, divergence, proof, theorem, endomorphism, factorial, matrix. It should be noted that, as in any other style, most of the vocabulary of the scientific literature is generally neutral words. Since the scientific style serves to transmit cognitive information, the numerous language tools used in scientific texts provide their objectivity. The need to transmit reliable information at the text level is expressed in its atemporality. So, in articles of a mathematical orientation, the absolute present prevails (Present Simple).

The main style features can be "distributed" by language levels into lexical (1), grammatical (2) and syntactic (3).

1. The first lexical feature of the scientific style can be described as the abstract-generalized character of the presentation, which is realized, first of all, in the widespread use of abstract vocabulary (in the examples we emphasized AM): "... in general the literature on adopted children shows overall that these youth are at greater risk for poor developmental

outcomes when compared to their non-adopted peers of the same age (" ... in general, information about adopted children shows that these young people are at greater risk of adverse consequences of the development of the organism compared to their "non-adopted" peers "); "... Finally, in addition to all of the changes that come with adolescence, those children who are adopted, both internationally and domestically, have to incorporate their adoption into their self-conceptions of themselves."

The lexical feature is the emphasized accuracy of the statement, which is achieved by the use of terms (emphasized in the examples by A.M.): "... The term asset refers to the ability of a trait to provide access to positive outcomes; ... Peer victimization (ie, repeated acts of physical and relational aggression from peers); gratitude (a temporary cognitive and affective state resulting from experiencing positive events); dual-factor model of mental health (a conceptual model in which traditional indicators of poor mental health (eg, anxiety or depression) are considered alongside indicators of positive psychological outcomes, such as life satisfaction) ... "(" ... The term "asset" is understood as the ability of one or another sign of providing a positive result; victimization of peers (for example, repeated acts of physical and relational aggression by peers); gratitude (temporary cognitive and affective state as a result of positive events); two-factor model of mental health (a conceptual model in which there are traditional indicators mental health problems (e.g., anxiety or depression) are considered together with the positive performance of the psychological plan, such as life satisfaction) ...

2. The first grammatical feature includes the predominance of nouns in the text (emphasized in the examples by A.M.): "... the current study examined positive experiences (i.e., gratitude, life satisfaction, and hope) as well as character strengths (i.e., social competence, self-regulation, responsibility, and empathy), and grouped them together according to whether they are psychological states or psychological traits. A psychological state is a temporary experience that results from a stimulus or biological event, whereas a psychological trait is stable over time ... "; "... The purpose of the present study is the examining of the relationship between alliance and outcome of couple therapy" ("... this study examined positive experiences (for example, gratitude, life satisfaction), as well as characteristic strengths (for example, social competencies of self-regulation, responsibility and empathy) and grouped them depending on their psychological states or psychological traits, while the psychological state is a temporary experience, the results of a stimulus or a biological event, the psychological sign is stability over time ... ").



The second grammatical feature is the use of verbs in personal forms (in the examples we emphasized A.M.): "... This concept, dubbed the "Dual Factor Model" of mental health, has offered a perspective that may facilitate the incorporation of positive psycho- logical research into mental health practice. This model appears particularly relevant to the school setting as students who experience complete mental health tend to experience greater academic success than students who are simply free from symptoms of psychological problems (Suldo & Shaffer, 2008). Positive experience has been most commonly operationalized as including the indicators of subjective well-being "(" ... This concept, dubbed the "double coefficient" - the mental health model, suggested the prospect of incorporating positive psychological research into mental health practice. This model was particularly relevant in the context of schools and students who, as a rule, achieve greater success than students who are not free from the manifestation of psychological problems ... ").

The syntactic characteristics of a scientific text include the consistent construction of facts related to each other, which is achieved thanks to the first syntactic feature - the use of complex forms of conjunctions and adverbs, introductory words (in the examples, we emphasized AM): "... Furthermore, aggressive and withdrawn behaviors are more common in rejected children, while compliance and social behavior is more common in socially accepted children. And the consideration of social problems and associated negative outcomes is important, the third pillar of positive psychology emphasizes that the development of positive social circumstances is equally important. For example, healthy development operationalized as social competence, life satisfaction ... "(" ... In addition, aggressive behavior is more common among rejected children, and the consideration of social problems and negative consequences is very important. The third area of positive psychology emphasizes that the development of positive social conditions is important For example, healthy development is defined as social competence, satisfaction with life ... ").

Such style-forming factors of a scientific text as sequence and coherence are closely related to the logical presentation. So, English-language mathematical articles contain a large number of means of formal and semantic cohesion. You can even talk about the redundancy of these funds. A significant part of them is made up of unions and adverbs that perform the functions of connecting elements of speech, such as: according to, also, again, instead of, in consequence of, as a result, in connection with, thanks to, by means of, however, now, thus, alternatively, on the other hand, etc.

Thus, the scientific functional style in the English language has a number of linguistic and stylistic features, most of which are characteristic of the corresponding Russian style. However, the English scientific texts to a greater extent tend to be compressed and simplify the presentation.

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THE ROLE OF TEACHING PHRASAL VERBS WITH ADVERBIAL COMPONENT IN ENGLISH

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ABSTRACT

In this article is illustrated all sides of teaching phrasal verbs and teaching them with adverbial components. It is discussed to show and explain all teaching technologies and their opportunities in teaching English language during the English classes. In addition to it identifies opportunities of technologies for giving the best knowledge to new generations during the English lesson. Nowadays students of current era are more energetic and intellectual, so there should be taught by using technologies and also in traditional style to obtain appropriate knowledge as soon as possible. Thus, using pair and group work in the classroom is more interactive for learners that will be close relationship among teacher and students. However, the article analyzes more effective ways of teaching process during the lesson by using phraseological units with the help of technology. One of them is CLIL method that connects activity with National Programmer of Personnel Training. It is at the same time it is able to connect it to other sciences as biology, mathematic, chemistry and etc. Using all these methods of language learning can provide teachers and learners with modern activity and well-being of language acting.

KEY WORDS: *authentic materials, technology, techniques, explicit vocabulary,*

INTRODUCTION

The role and influence of English in today are gaining a higher speed in the world as well as in Uzbekistan. The main factors for this phenomenon include expanding communication with the world after gaining the independence and increasing speed and scope of information exchange in the global village. The dominant position in the internet space by the language of the published content is firmly held by English, which is a strong motivation to learn English for those who wish to promote their global competences. As it was mentioned since the declaration of independence the importance of the English language has been increasing in all aspects of Uzbek people's life. Currently, in the Republic of Uzbekistan great attention is given to the radical reorganization of the educational system that will give an opportunity to raise it to the level of modern standards. In order to realize the aims and tasks put

forward by the Law of the Republic of Uzbekistan "On Education" and the "National Programmer of Personnel Training" the complex system of reorganizing the structure and the content of personnel training, proceeding from perspectives of the social, economic development of the society, contemporary achievements of science, culture, technique and technology are being created in the country. Besides on December the first President of the Republic of Uzbekistan Islam Karimov signed a decree "On measures to further improve foreign language learning system". With the spread and development of English around the world, English is used as a second language in the Republic of Uzbekistan. It enjoys a high prestige in the country. At present the role and status of English in Uzbekistan is higher than ever as evidenced by its position as a key subject of medium of instruction, curriculum. As the number of English learners is



increasing different teaching methods have been implemented to test the effectiveness of the teaching process. Use of authentic materials in the form of films, radio, TV has been there for a long time. It is true that these technologies have proved successful in replacing the traditional teaching. The new era assigns new challenges and duties on the modern teacher. The tradition of English teaching has been drastically changed with the remarkable entry of technology. Technology provides so many options as making teaching interesting and also making teaching more productive in terms of improvements. Technology is one of the most significant drivers of both social and linguistic change. Technology lies at the heart of the globalization process; affecting education work and culture. The use of English language has increased rapidly after 1960. At present the role and status of English is that it is the language of social context, political, sociocultural, business, education, industries, media, library, communication across borders, and key subject in curriculum and language of imparting education". It is also a crucial determinant for university entrance and processing well paid jobs in the commercial sector. Since there are more and more English learners in a different teaching method have been implemented to test the effectiveness of the teaching process. One method involves multimedia in ELT in order to create English contexts. This helps students to get involved and learn according to their interests, it has been tested effectively and is widely accepted for teaching English in modern world. Technology is utilized for the upliftment of modern styles; it satisfies both visual and auditory senses of the students. With the spread and development of English around the world, English has been learned and used by more and more speakers. According to David Graddol 'it is the language at the leading edge of scientific and technological development, new thinking in economies and management, new literatures and entertainment genre. In language teaching and learning, we have a lot to choose from the world of technology: Radio, TV, CD Rom, Computers, C.A.L.L., the Internet, Electronic Dictionary, Email, Blogs and Audio Cassettes, Power Point, Videos, DVD's or VCD's, Electronic boards, mobile phones, various cards and etc. The last two decades have witnessed a revolution due to onset of technology, and has changed the dynamics of various industries, and has also influenced the industries and the way people interact and work in the society. This rapid rising and development of information technology has offered a better pattern to explore the new teaching model. As a result, technology plays a very important role in English teaching. Using multimedia to create a context to teach English has its unique advantages. This paper tries to analyze the necessity

of multimedia technology to language teaching and also brings out the problems faced by using these technologies. It also aims to make English teachers aware of the strategies to use it in an effective manner. So we are able to use all our opportunities by using new methods of techniques, it helps pupils to understand the foreign language clearly and easier. In my job I would like to show and explain all teaching technologies and their opportunities in teaching English language during the lessons. Example: with the help of computer and speakers, projector, audio, video and cards will be easy playing games, do various activities and non-traditional lessons. We have all opportunities of technologies for giving the best knowledge to our generations during the English lesson. Nowadays our pupils are more energy and smart, they try to take all your knowledge as possible as they can. So and we have to use all our opportunities to give them good knowledge. They should know English very well and add their opportunities in the future. Let's do it together!

THE MAIN PART

The first time I ever taught phrasal verbs was a disaster. I remember standing in front of a roomful of students from my Intermediate English Class, preparing for the lesson on "Phrasal Verbs in the Workplace". After a couple introductory exercises to start off the class, we turned our attention to the phrasal verb exercise. I began by identifying individual phrasal verbs from the vocabulary list and proceeded to offer definitions for the students. For many of the words (e.g. call back, clean up, fill out, hand out, turn down, put away, and throw away), I drew diagrams on the board to illustrate their respective meanings. I thought the presentation was straightforward and coherent. Yet as the students started chiming in with their questions, it quickly became clear that the subject matter was far more complicated than I had previously anticipated. My 15 minute presentation quickly turned into 20 then 30, as students continued to question the varied meanings and usage of the new verb forms. I explained the verb and particle meanings; I tried to distinguish between different senses, but despite the illustrations and the graphic organizers I used, the students still seemed confused. And based on exercises and comprehension checks later that night, I realized that much of what we worked on didn't stick. Many of the students left the class more confused than before. It seemed that, despite my efforts to clarify, phrasal verbs are simply too hard to teach effectively. As teachers, perhaps some of you can relate to my experience and frustration in the classroom. Maybe you have attempted to teach phrasal verbs to your students or offer some sort of cohesive explanation to them. Perhaps after trying to demystify the constructions,



you gave up on these idiomatic forms, as students repeatedly avoid and misuse them. As teachers, we want to be able to distill and explain difficult concepts for our students. We live for the moments where it all clicks for our students. Yet the moment of realization never seems to come with phrasal verbs. Instead, it seems like nothing but a litany of endless memorization, as students struggle with one phrasal verb after another.

My teaching experience catalyzed a personal investigation into theories and approaches to teaching idiomatic expressions like phrasal verbs. I was convinced that there must be some way to present these concepts in a way that English language learners could understand, apart from word lists and rote memorization. Eventually, after researching and comparing many different strategies, I discovered a growing body of research in cognitive linguistics, where researchers are finding systematic ways to organize and teach these

Constructions Over the last forty years, there has been a tremendous amount of research in cognitive linguistics aimed at analyzing idiomatic forms like phrasal verbs. Yet despite the breakthroughs in research, these new theories have failed to penetrate our pedagogical practices. To this day, there has been no significant change in teaching approaches to idiomatic expressions like phrasal verbs.

As such, this handbook serves as a bridge between the theory and practice, as it introduces the predominant theories in cognitive linguistics and sheds light on some pedagogical implications for teachers. In the following pages, we will overview traditional approaches to phrasal verbs and highlight the weaknesses of those views, specifically with a pedagogical focus. Then, by exploring research findings from cognitive linguistics, we will unpack a new way of approaching phrasal verbs, with what will be termed the cognitive approach.

There are far more extensive studies and materials written on cognitive linguistics, and it is not the purpose of this handbook to substitute for those resources. The following is merely an introduction to the theories and stepping stone for teachers to understand a new approach to teaching these constructions. This is a distillation of these concepts for teachers and opens the door for more practical and informed ways of teaching difficult language structures. One of the most frequent multi-word units in English is the phrasal verb. As Gardner and Davies note, phrasal verbs are “very common and highly productive in the English language as a whole with a small percentage of them making up over half the phrasal verbs in the whole language. They also estimate that “learners will encounter, on average, one [phrasal verb construction] in every 150 words of

English they are exposed to. And that ratio simply increases with conversational genres and registers. As language learners seek to become competent in spoken English, phrasal verbs are an essential construction to master (Celle-Murcia and Larsen-Freeman. Yet with the rise of communicative language teaching, and as task-based approaches currently dominate English language pedagogy, the importance of explicit phrasal verb teaching -- and vocabulary teaching in general -- is sometimes overlooked. While teachers rightly focus on communicative competence and interactions between language learners in a variety of authentic language contexts, this focus can lead to some oversight. Many language teachers tend to look down on explicit instructional models and any form of direct vocabulary teaching in general, as they believe it takes away from the communicative contexts or task-based exercises. This is what Boers and Lind Stromberg note when they state the following: Theorists of [language] pedagogy, particularly in English-speaking countries, have long tended to favor approaches that in one way or another discount the importance of teaching vocabulary, with many stoutly persisting in their methodological allegiances in the face of mounting evidence that vocabulary is a crucial factor in ability to read and understand challenging texts While there is nothing wrong with communicative or task-based approaches, proponents of these approaches can tend to overlook the critical role that vocabulary – and explicit vocabulary instruction -- plays in the acquisition of language. Instead of simply being additive to language learning, explicit vocabulary teaching is central to the development of language competence. With the development of large-scale corpora, linguists have been able to uncover language patterns previously unnoticed, revealing the ubiquity of multi-word units and vocabulary collocations in English. These findings reveal that, instead of consisting strictly of lexis and syntax, language tends to be comprised of multi-word constructions and word collocations like phrasal verbs.

Theoretical part

Boers and Lind Stromberg note that these recent corpus findings have greatly influenced theories in English language teaching, and many theorists have come to the conclusion that “successful L2 learning is to a very great extent a matter of understanding and remembering collocational tendencies and prefabricated multi-word expressions and that learners ought to be helped to acquire them in large numbers”. Thus, when it comes to developing a communicative competence of the language, multi-word vocabulary units are central for language learners to master. A large number of language



teaching theorists are now accepting this new understanding of vocabulary as being of high importance in developing proficiency in English. The assumption of this handbook is that explicit vocabulary teaching is beneficial, not only in the traditional understanding of teaching single words, but also -- and perhaps even more importantly -- in teaching multi-word units. Central to these multi-word constructions is the phrasal verb, a form ubiquitous in the English language. Thus, it is the belief of the following book that learning phrasal verbs is a productive endeavor for any language learner, as it will directly contribute to their communicative competence in English. As such, the teaching of phrasal verbs must be prioritized by English language teachers for their students' language development. A critical part of language instruction understands the key issues for students and the best practices for teachers to present those concepts. This handbook seeks to present those best practices. In the following pages, we will review and distill the most recent research in linguistics and language teaching and apply these theories to teaching applications regarding phrasal verbs.

Phrasal verbs -- *such as take up, go on, get over, and get along with* -- are also referred to as multi-word verb constructions. A phrasal verb contains multiple parts of speech (a verb and either a preposition or an adverb), forming three possible syntactical combinations:

1. *Verb + preposition (e.g. take over, fill up)*
2. *Verb + adverb (e.g. take away, give back)*
3. *Verb + adverb + preposition (e.g. come up with, get out of)*

One of the most important things to understand about phrasal verbs is that they are an independent construction, and the constituents that make them up function differently inside the phrasal verb than they normally do on their own. Take a preposition, for example. A preposition is defined by its function as the head of a prepositional phrase: a preposition + noun phrase (e.g. My fiancé is cooking dinner in the kitchen).

The preposition in takes the noun phrases the kitchen and forms a prepositional phrase, adding locational context to the sentence. Prepositions can be defined as words that function forming prepositional phrases, and they form a closed class of words that fit this category. When a preposition is combined with a verb to form a phrasal verb, it changes its function: It no longer operates as the head of a prepositional phrase; it is defined in terms of its function within a phrasal verb. When a preposition functions in this new role, we refer to it, not as a preposition, but as a particle, because it is functioning primarily as part of the phrasal verb. Thus, if we take a preposition like in and combine it with a verb to form a phrasal verb

(e.g. fill in as in we needed to fill in the intern on our company policies), the preposition is referred to as a particle. The same is true of adverbs, too. Adverbs also form a class of words, similar to prepositions, in that their function is to add contextual information, too. They differ from prepositions because they are not able to take noun phrases to form larger phrases. For instance, we could not say "I am going away this city" because the adverb away cannot take a noun phrase like this city and form a larger constituent. Instead, we could say "I am going away from this city," because the adverb is able to modify a prepositional phrase, not a noun phrase. When an adverb is combined with a verb to form a phrasal verb, it also changes its function: it no longer functions in a typical adverbial function but as part of the phrasal verb. Thus, like a preposition, when it functions inside a phrasal verb (e.g. take away), it is referred to as a particle. This can be confusing for both English teachers and students, as phrasal verbs are often defined as verb + preposition constructions. While this is the typical structure of a phrasal verb, its simplicity is problematic in two ways. First, while the majority of phrasal verbs are the combination of a verb and a preposition, a few phrasal verbs use adverbs instead of prepositions. Secondly, when prepositions or adverbs function in a new role inside a phrasal verb, they lose their original function. It would be inherently misguided then to refer to them as prepositions and adverbs because they are not functioning as such. They are functioning as part of a phrasal verb, so they are referred to as particles. In the rest of this handbook, we will refer to words according to their function. When prepositions and adverbs are functioning independently as prepositions and adverbs, I will refer to them as such. Yet when they are functioning as part of a phrasal verb, I will refer to them as particles. As such, I will refer to phrasal verbs as verb + particle constructions. This is a comprehensive term that will refer to any of the above three syntactical structures. The meanings of phrasal verbs cannot always be derived from the individual meanings of the verb and the particle they are composed of. Their meanings range from transparent or literal (where their meanings can be easily derived) to idiomatic, where there seems to be very little connection to the meanings of the verb and the particle. Consider the following examples of literal (transparent) phrasal verbs:

1. They need to stand up so we can see them.
2. Then let's fill up the water tanks
3. Toxic chemical leaked out of a storage tank and into the ground water In these examples, the phrasal verbs are used literally.

Teaching phrasal verbs with adverbial component in English lessons



For instance, fill up literally refers to water being poured into a tank, and as more water goes in, the level rises (goes up). These are the easiest phrasal verbs for English language learners to learn, as their meanings are transparent and easily derived from the meanings of the verb and particle. However, take a look at the same phrasal verbs used idiomatically:

1. It is unlikely to stand up to valid scientific scrutiny
2. I was happy having her voice fill up the house
3. The story leaked out early in the day in the second set of examples, the meanings of the phrasal verbs are very different from their literal meanings. The meaning of stand up is to confront, run up means to reverberate throughout a building means to secretly share information. These meanings differ greatly from the meanings of their verb and particle constituents, and on first look, it may be difficult to see how their meanings are related to the original, transparent meanings. As the previous section demonstrates, the meanings of phrasal verbs are not always transparent, making them difficult to learn for ELLs. Their meanings have often been regarded as arbitrary, random, and unpredictable. As such, phrasal verbs are typically classified as a type of idiomatic expression, with ranging degrees of idiomaticity. In addition to their seemingly arbitrary meanings, phrasal verbs are also highly polysemous, meaning the same phrasal verb might have multiple, distinct meanings. Consider the following example of the phrasal verb pick up: 1. He leads a group to a city park to pick up trash (to lift or take off the ground).

Cell phone towers are able to pick up a caller's location on a 911 call. (to detect) He was trying to get a cab to go pick up his daughter (to take in a car) 4. Republicans failed to pick up a single seat in the chamber (to take, to win) 5. Momentum is starting to pick up (to increase) 6. You need to pick up where you left off (to resume) 7. Showing them pictures can help them to pick up the language (to learn, acquire) Example sentence 1 shows a literal, transparent meaning of pick up, yet the other sentences demonstrate an array of idiomatic meanings ranging from learning a language to detecting a location to increasing momentum. This is not an isolated phenomenon with pick up, for Gardner and Davies (2007) found an average of 5.6 distinct meanings for each of the 100 most frequent phrasal verbs in English and over 20 distinct meanings just for the phrase go on. This significantly adds to the complexity of learning phrasal verbs. While memorizing 100 verb-particle combinations might be feasible for a student, individually memorizing the distinct sense and context of each of the polysemous meanings is virtually impossible. The question we want to explore in the next sections is what makes one phrasal verb literal and transparent and another one idiomatic. For a verb like pick up, how are all its

meanings related? Is there a meaningful connection between the different senses, or are the differences arbitrary? How do phrasal verbs move from literal to idiomatic meanings? Can we predict their meanings or figure out how the idiomatic meanings are formed? These are the questions we will seek to answer as we continue to explore the meanings of these expressions. The question for teachers of English is whether there is any systematic structure or organizational system governing the meanings of these phrasal verbs. Traditional approaches to phrasal verbs have not been able to identify any coherent system or structure and have therefore classified them as idiomatic. However, recent research developments in cognitive linguistics have revealed semantic patterns that were previously undetected.

CONCLUSION

These semantic patterns stem from the ways native speakers understand and refer to the world around them. In short, the patterns of meanings are cognitively motivated; that is, meaning resides in the cognitive framework of native speakers, not just in the surface language features. These motivations are implicitly embedded within the cognitive structures of native speakers, and native English speakers are generally not explicitly aware of the ways their language (including phrasal verbs) flows from these conceptual structures. These motivations are not transparent to speakers of other languages learning English (since they do not have direct access to the same conceptual frameworks), making the meanings of phrasal verbs appear completely arbitrary and random. Despite the fact that ELLs are generally unaware of the conceptual motivations for English phrasal verb meanings, teachers are able to tap into these conceptual frameworks and explicitly teach them to students. Numerous studies have revealed the positive benefits on students' understanding and retention of phrasal verb meanings when these frameworks are explicitly taught when thinking about teaching phrasal verbs.

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THE ROLE OF ADVERTISING IN ECONOMICS AND ITS PRAGMATIC ANALYSIS

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ABSTRACTION

The article refers to the role of advertising in economics and its pragmatic analysis, the recent advertisements have shown how effective they are to influence society through the many ways of advertising their product.

KEY WORDS: *advertising, promotion, business, product, marketing, language units.*

DISCUSSION

When one starts a business or is running a business, one needs to make people aware of the fact. Promotion is important for any type of business to let others know about the business. Any type of business, whether it is run online or offline requires customers so that it can experience a good business turnaround. However, the only means of reaching customers is advertising. This is why advertising is important for a business. Once a business advertises about its products and services, it is able to run in a competitive environment. Advertising is important for every aspect of an economics and a business.

It plays an imperative role for both manufacturers and consumers. Advertising is important for the business on the whole as it lets the business gain more customers, thereby increasing business turnaround. Advertising can be achieved using various media like television, newspapers, radio, banners, pamphlets, websites etc. Each advertising media has its own pros and cons and one must evaluate all of them before selecting a particular media. The main thing that needs to be considered is that the advertising medium selected must be able to reach a large number of customers. Generally, businesses hire the services of an advertising agency to promote their products and services.

The advertising agency selected by the business owner can handle the entire advertisement campaign and all aspects of the companies Marketing. This way the businessmen can focus on other aspects of the business and need not worry about how to

attract more customers. The advertising agency handles the entire process of promoting a product or service by breaking it down into stages and then working on each stage. These stages are described below:

Market analysis- The advertising agency first studies the market to know the target audience and the needs of the target audience. The Small Business Marketing Consultant at the advertising agency also studies the competition present in the market to know how the advertising campaign will do in the market. This is done to know whether the product or service will be able to stand in the competition or not.

Selecting the advertising media- Once the advertising agency has decided to go ahead with the advertising campaign, it starts to select the advertising media. The Small Business Marketing Consultant at the agency studies the benefits and drawbacks of all the available media like television, radio, newspaper, internet etc. On the basis of their comparison, the consultants select the media which they feel will do justice to the advertising campaign. **Cost-benefit analysis-** The Small Business Marketing Consultant at the advertising agency then performs a cost benefit analysis. This analysis is performed for two reasons.

The first is to decide whether the advertising campaign will benefit the business in the sense will advertising help to earn good business turnaround. If yes, then advertising agency starts with an advertising campaign. The other reason why a cost benefit analysis is done is to check whether the cost of



promoting a product or service using a particular advertising media justifies the benefits it reaps. This is done to make sure that advertising using a particular media benefits the business by helping it get more customers and thus high business turnaround.

Creating the actual advertisement- Once all aspects are looked into, the Small Business Marketing Consultant at the advertising agency proceeds with the creation of the advertisement. For this, the consultant may take the help of experts at the advertising agency or he may seek the help of professionals from outside. In either case, the end result is the creation of an attractive and appealing advertisement by the advertising agency.

The advertising agency charges for the completion of the advertising campaign. So, it must be ensured that a business man goes in for an advertising agency that completes the work in the specified budget. Also the advertising agency must make sure that it does not exceed the budget because if it does so, the cost will out-shadow the benefits of the advertising campaign. This will not help the business in any manner. The advertising agency must also be clear about the goals and objectives which the business wants to achieve using the advertisement. When promoting the products and services, the advertising agency must also make sure that the right message gets across to the right people at the right time.

If the advertising agency fails to provide the advertisement at the right time, the consumers may shift to another product or service. Nowadays, advertising has penetrated every corner our life pervasively. However, its language is the main carrier of advertising message. Advertising may take many forms, but language is of crucial importance. Advertising language is a style of immediate impact and rapid persuasiveness. In order to "attract attention, arouse interest, stimulate desire, create conviction and get action", it is necessary for the advertisers to catch the audience's attention. The language of advertising, among other aids, is of decisive importance to the persuasiveness and effectiveness of advertisements.

As a special form of communication, the commercial advertisements are actually a kind of persuasive speech act, aiming to persuade the potential consumers to accept and buy the advertised products or services. In order to achieve this purpose, advertisers frequently employ some strategies in the advertising language. One of the effective ways to achieve this aim is by applying the Politeness Principle.

In everyday life, we have to communicate with each other to reach a variety of communicative goals.

Grice's theory of Conversational Implicature is a useful guideline conducting people's behavior in conversation, but sometimes it also fails to explain some linguistic phenomena. According to Leech (1983, Ch.4), there is a politeness principle with the Cooperative Principle and the conversational maxims.

It is of great importance to the advertiser that he should not impose his opinion on his target audience, for if the audience feels the advertisement to be too rude, he or she is likely to respond unhappily to the message, or simply forgets about it very soon. Therefore, the copywriter will face a problem: on the one hand, his advertisement should persuade people to buy the product; on the other hand, he must not show this in so many words so that they should make offence. He has to follow the maxim of Politeness Principle rather than by using more prudent, direct ways of communication. Politeness is a universal communicative rule that works in all kinds of social contacts. Politeness is an essential part of human culture and a crucial criterion of human's social communication. As a rule of social activity, people must observe this criterion of social communication. Furthermore, we find advertisers use fuzzy language in their advertisements in that they observe Politeness Principle.

In Politeness Principle, each maxim is accompanied by a sub-maxim, which is of less importance, and not all the maxims are equally important. For instance, tact influences what we say more powerfully than does generosity while approbation is more important than modesty. Speakers may adhere to more than one maxim of politeness at the same time and often one maxim is on the forefront of the utterance, with a second maxim being invoked by implication.

The copywriters' purpose is to influence the consumers and persuade them to buy their products or services, copywriters need to show their concern for consumers' benefits (Tact Maxim) and difficulties (Sympathy Maxim), exaggerate their own loss (Generosity Maxim), praise consumers to attract attention (Approbation Maxim), minimize the praise of self (Modesty Maxim), and achieve agreement with consumers (Agreement Maxim). Fuzzy language may be a good way because they have no definite boundaries and can be understood favorably when appropriately used. For example:

1. *Go the Green and Gold!! Over \$15 million worth of prizes could be won!* (McDonald).
2. *Clearance sale up to 40% off.* (The Sports Authority).
3. *With America's best warranty, we see a very long life in your future.* (Hyundai).
4. *Just like you, we care about how your kids feel.* (Johnson & Johnson Skincare).
5. *Just slightly ahead of our times.* (Panasonic)



The above examples conform to Politeness Maxims. The first example maximizes benefits of consumers by indicating a possibility of getting “over \$15 million worth of prizes”. Consumers might understand the “over \$15 million” as a prize they could win immediately. In fact it is the total sum of the many prizes that the company would offer and one prize may not exceed a hundred dollars. But in order to catch readers’ attention, the advertiser puts the number in a prominent position and leaves out an explanation, so that the advertiser makes its typical example of how the advertiser makes good use of fuzziness to achieve the observation of Tact Maxim. As communicators, advertisers encode an intended meaning into an advertising message, they must make manifest what they want to express; while the audience are expected to infer/interpret the message in accordance with the intended or preferred meaning. Thus, advertising is a typical ostensive-inferential process. An example is illustrated here: *It is the taste.* (an advertisement for *Nescafé*). The meaning of this sentence is infinite. As audience, we could give several intentional meanings under different situations. For instance, we can imagine a situation like that a little girl hurried home after school, and took the biscuit to eat. Her mother asked why not have lunch at school. The daughter responded: “It is the taste.”

Obviously, the “taste” she implied is bad. That is the reason why she didn’t eat at school. But it is the slogan that makes the *Nescafé* wide-spread all over the world and brings Nestle Company considerable profit. Why can the same sentence make such different effects? Let’s employ the concepts of the dynamic context and extension-inferential communication of Relevance Theory to explain the phenomenon. From the point of view of consumers, we all know this sentence is the slogan of an ad, and all the advertisers are aimed to publicize his product. The advertiser’s purpose is to inform the audience the superior quality of his product and then persuade or influence the target audience to purchase the product. On the basis of these assumptions, the audience become aware of the fact that the advertiser is speaking highly of, not criticizing or depreciating his product, and want the audience to share the advantages of the product. With less processing effort, the audience achieve the real contextual effect the advertiser purposed to constrict. The communication processes successfully. That is the contribution of the optimal relevance. Till now this slogan has been as famous as *Nescafé* all over the world. It has become a classical example in advertising. To fully understand them requires the great processing efforts from the audience.

CONCLUSION

All in all, we should stress that the role of advertising in economics and its pragmatic analysis in English teaching is a complex topic in linguistics and cognitive science, for it covers semantics, pragmatics, logic, prototype theory, teaching marketing and economics and so on. Currently, fuzziness is widely used in advertisements. It is generally acknowledged that fuzziness in advertising language either leads to deception or they prompt the effectiveness of advertising communication. We should take a dialectical attitude to fuzziness in advertising English. That is, they perform not only negative functions but also positive ones. Both advertisers and consumers should make mutual efforts to build a true communicative channel. Advertisers should observe the principle of honesty and consumers also should raise their awareness of self-protection. It is the target audience that really need interpret fuzziness. The ultimate decisive power is in our hands.

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COMPARATIVE ASPECTS OF ENGLISH AND RUSSIAN PROVERBS

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ANNOTATION

The article discusses thematic groups of proverbs in English and Russian. The main groups of proverbs of English and Russian languages with the semantics of life, variability, diversity, chance, activity, time, hard work, courage are analyzed.

KEY WORDS: *semantics, aspect, variability, courage, industriousness, activity, phraseological foundation.*

DISCUSSION

Proverbs are pearls of worldly wisdom, spiritual wealth and cultural heritage of the people, tested on centuries of experience. According to the famous writer, linguist, ethnographer of the nineteenth century, the author of the most extensive collection of Russian proverbs and sayings V. I. Dal, "a proverb ... is not composed, but born itself" (Dal, 2000).

Proverbs as a peculiar expression of folk wisdom, as a phenomenon common in all languages of the world, have long attracted and attract the attention of linguists.

There are a large number of dictionaries of proverbs of different languages, a number of works that consider these sayings as part of folklore. However, their linguistic study from the point of view of modern science has just begun.

In recent decades, ambiguous, and sometimes even polar points of view have been expressed regarding the proverb. So, one of the founders of modern paremiology, G.L. Permyakov, believes that the imagery and external design of the proverb, the ethnographic and ethnogenetic realities reflected by it, do not seem to be the main thing that characterizes it. In

his opinion, the main thing is that the main content of the proverb is determined by logical constructions, and **proverbs and sayings themselves are signs of situations or certain relations between things** (emphasized by the author. - P. B.) [4].

A significant part of the phraseological foundation of modern English is made up of proverbs.

In modern linguistic literature there are a number of works devoted to the study of proverbs on the material of various languages (V.I. Dal, 1957; G.L. Permyakov, 1970; L.F. Ershova-Belitskaya, 1971; L.A. Morozova, 1972; L.F. Bondarenko, 1976; V.P. Felitsina, 1979; V.V. Gvozdev, 1983; T.K. Karsanova, 1984; F. Vitkovska, 1986; I.E. Savenkova, 1989; W. Mieder; 1990 Yu.L. Solodub, 1994; V.M. Glukhikh, 1996; O.A. Dmitrieva, 1997, etc.).

Proverbs of the English language are the object of research in the works of Russian and foreign linguists (I.M. Onitskanskaya, 1961; A. Taylor, 1962; S.I. Vyaltseva, 1977; A. Dandis, 1978; Hasan-Rokem Galit, 1980; A. A. Krikmann, 1984; NR Norrick, 1985; E.A. Akhundova, 1986; N.M. Prokhorova, 1986; A.V. Kunin, 1996 and others) [3].



Given the features of the deep level, all the proverbs of the English language are divided into three thematic groups:

1. Man and life circumstances;
2. Man and society;
3. Man as a person.

The analysis of examples of verbal implementation of proverbs showed a close relationship between proverbs and context. In general, three types of interaction between proverbs and contexts are distinguished.

1. Proverb-conclusion. In this case, with the help of a proverb, the speaker confirms the correctness of the expressed thought or idea.
2. The proverb is the basis for subsequent reasoning.
3. Proverb-conclusion-basis.

Most often, the speaker uses a proverb as a conclusion or basis for subsequent reasoning.

The analysis of proverbs in a real situation of communication confirmed the idea expressed earlier that all of them have a pragmatic orientation, which receives its final embodiment only in context. Features of the interaction of context and proverbs depend on the situation of communication. And this is predetermined, first of all, by the intention of the speaker. The act of speech is usually intentional. Of course, cases of spontaneous communication (for example, at the airport or in the queue at the store) between strangers or unfamiliar people should also be taken into account. In such situations, the choice of language units, as well as their possible modification, is more a consequence of the communication situation that has arisen than the intention of the speaker.

Based on the analysis of frames activated in a particular group, the concepts that were most often verbalized in the proverbs of the English language were identified: life, variability, diversity, randomness, activity, time, industriousness, courage, etc. for the first group; cooperation, management, equality / inequality, verbal communication, mutual understanding, impact, integrity, loyalty, etc. for the second group; unprofessionalism, mediocrity, stupidity, talkativeness, bad manners / dishonesty, greed, secrecy, etc. for the third group [3].

V.P. Zhukov and Yu.N. Solodub distinguish between proverbs and sayings based on semantic criteria. According to the concept of Yu.N. Soloduba, a proverb expresses a certain regularity, which is perceived as a recommendation for everyone and everyone, and the saying contains a generalization at the level of a specific typed situation, which, as a rule, is included in the semantization of this saying (Cp.

Большому кораблю — большое плавание и Овчинка выделки не стоит, Вор у вора дубинку украл) [5].

The widest understanding of the proverb as a communicative phraseological unit of a non-logical character is presented in the works of A.V. Kunin, who includes various structural-semantic types of figurative stable combinations of words in this category: sentences with a closed structure, open predicative structures like "one's heart warms towards somebody", stereotypes or clichés like "What's up? What 'the good word?" [6]. The author also notes that in English and American linguistic literature there is no clear distinction between proverb and saying. The fact that this problem is absent in Western linguistics is also indicated by V. Chernelev. In the preface to his dictionary, he writes: Firstly, any definition ... does not cover all sides of the defined subject, especially such complex formations as a proverb and saying ... Secondly, Western folklore does not know such a problem, or ignores it. It follows from this: the phenomenon of sayings is a purely "Russian (wider pan-Slavic) question" in paremiology ... "[7]. Considering the category of English sayings with a constant-variable dependence of the components, A.V. Kunin notes that the proverbs are also not characterized by the presence of the so-called alternatives somebody, something, one, one's, i.e. pronouns are variable components that are replaced by suitable personal / possessive pronouns in the form of a particular speech realization of a proverb [6]. According to this remark, the following persistent phrases with the heart component are classified as one: *one has one's heart is in the right place; one's heart is breaking; one's heart leaped into one's mouth; one's heart sank into one's boots; one's heart warms towards somebody.*

As already mentioned, some researchers, based on a semantic approach to distinguishing between proverbs and sayings, distinguish them on the basis of contrasting figurativeness / ugliness, while others consider it generally unreasonable to talk about proverbs with direct unreasonable meaning as an object of phraseology (V.V. Vinogradov, A. V. Kunin, V.M. Mokienco). Adhering to the opinion of A.D. Reichstein and E.V. Ivanova, nevertheless, it seems advisable to include units with a literal, direct meaning in the object of this comparative study. First, according to the observation of E.V. Ivanova, these proverbs are traditionally part of the dictionaries of proverbs, occupying a very significant place in them, and at the same time belong to important social spheres and directly reflect the views of linguistic society on the world.



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DETERMINATION OF CONTACT PRESSURE IN A STAMP

ОПРЕДЕЛЕНИЕ КОНТАКТНОГО ДАВЛЕНИЯ В ШТАМПЕ

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ABSTRACT

Materials for forced formation of a weld root are presented. The estimation of possibility of manufacturing of ceramic backings from silicate materials is given. The basic conclusions received as a result of laboratory experiments.

KEYWORDS: *abrasive, hardening, wear resistance, durability, boring.*

АННОТАЦИЯ: *Повышение долговечности деталей, работающих в условиях интенсивного абразивного износа при высоких контактных давлениях, в частности пластин штампов для формования изделий из мелкодисперсных абразиво-содержащих смесей, путем упрочнения рабочей поверхности является актуальной научно-технической задачей.*

Ключевые слова: *износостойкость, боковая пластина, передняя пластина.*

DISCUSSION

In the broadest sense, ceramics are products of inorganic materials (for example, clay) and their mixtures with mineral additives, sintering of powders of the starting materials or materials based on them when manufactured under the influence of high temperature with subsequent cooling. The advantage of ceramic materials is that their stocks are practically unlimited. That is why in ceramics it is possible to use the widest range of composite materials, the components of which can differ significantly in their composition and properties, and the resulting products with fundamentally new properties. This circumstance has opened up broad

prospects for the use of ceramic materials in mechanical engineering, since components that differ in the highest temperature characteristics, elastic moduli, and chemical stability are used to create it. In this regard, engineering ceramics, in contrast to art, sanitary, construction, electrical, radio ceramics, in which one or two of the above properties are preferred, requires a more complex, advanced, and therefore more expensive technology in economically and industrially sound volumes [4].

Thus, the process of creating ceramic materials for mechanical engineering in recent times has gone beyond laboratory research. Nevertheless, many experts are cautious about the complexity of



the technology for manufacturing engineering ceramics, in particular, ceramics made from transformation hardened zirconia with bending strength up to 2200 MPa or from recrystallized (densely sintered) silicon carbide, which up to 2000K retains the same strength as and at room temperature.

Reducing the cost of products through the use of materials from local raw materials: introducing the ceramic mass of cheaper clay of the Angren rock and Navai field chamotte and reducing the amount of expensive materials imported from foreign countries.

This is achieved by the fact that the porcelain component, which smoothes the surface, is additionally introduced into the lining composition for forming the back side of the weld containing quartz sand, and Angren and Navava rocks are used as the main component in the following ratio of components, wt. %

Abrasive components:

Kaolin (Angren Rock) 56-59%

Pegmatite (Nava Field Chamotte) 17-19%

Porcelain component 10-12%

Quartz sand (Kuvassy rock) 8-10%

Porous clay Kaolin of Angren origin is the basis of ceramic tiles and a binder for fireclay and quartz sand. The content of porous clay kaolin in ceramic tiles of 55-59% increases the refractoriness of ceramics to a temperature of 1400°C [2].

Consequently, the need to summarize the results of the development and use of ceramics in various fields of engineering is already present.

Improving the reliability and durability of machines is one of the main problems of modern engineering. The economic significance of this problem is obvious.

As shown by statistical analysis, the main reason for the failure of machines is not their breakdown, but the wear of moving joints and working bodies under the influence of friction. When designing a new machine, the engineer always relies on the most critical parts for strength, while practically no movable mating is checked for wear resistance. When designing and operating machines, the most effective means of reducing wear, taking into account specific working conditions, are not always used.

During friction, fundamental changes occur when the surface volume of the material is in contact with movable joints. These changes determine the wear process and the magnitude of the friction force itself.

When processing ceramic materials, the pressure of the abrasive particles of the mixture being compacted when they are moved relative to the side and end walls of the mold during pressing is a big influence on the wear of the stamp plates.

When forming ceramic products, first of all, it is important to determine the pressure necessary to obtain high-quality raw material. Raw material from compacted particles of sand-clay mixture after pressing should retain its shape during transportation, drying and firing in the absence of cracks and chips. Therefore, the pressure created during pressing should guarantee the formation of raw materials with certain strength characteristics. This is ensured by compaction of the mass and an increase in adhesion between them.

When pressing ceramic products, it is necessary to create a pressure of at least 10 ... 25 MPa. With increasing pressure on the mixture, the working plates of the stamp experience intense abrasive action, which leads to wear of their working surfaces and cause a decrease in the quality of the molded products. It is important to establish the nature of the pressure distribution of the compacted mass on the side and end plates of the stamp, since they will be most intensively subjected to wear during compaction and knocking of raw material from the mold [4].

Uneven wear of the plates along the height gives reason to assume that the stress distribution in the sealed mass will also be uneven when the punch of the stamp moves. Knowing the magnitude of the force required for compaction, it is possible to identify the distribution of pressure along the height of the side and end plates of the stamp to predict their wear resistance.

According to studies of the stress state of a die for pressing granular ceramic or silicate material in cross section, it looks like a rectangle with a length l and width m (Fig. 1) [1]. Distributed load q from the punch of the stamp acts on the upper surface of the material being sealed. A diagram of the compaction of a mixture in a mold with a height h is shown in (Fig. 1, a), and the forces and stresses acting on the elementary volume of a mixture with a height of dh enclosed between parallel planes I-I and II-II are shown in the diagram (Fig. 1, b).

The vertical stresses σ_h will be variable in height h , while the stress distribution is assumed to be uniform on horizontal sites (planes I-I and II-II) of the selected volume of the mixture. Considering that, the stresses σ_y are distributed uniformly along the length l and they determine the pressure on the side plates of the stamp, and the stresses τ_y lead to the appearance of friction forces F_{fr} on the side sections of the selected element of width m .

Considering the equilibrium of the selected elementary element under the action of forces (Fig. 1, b), the magnitude of the acting forces can be represented as follows:

$$P_B = \sigma_h \cdot l \quad (1)$$

where P_B is the force acting on the upper plate of the stamp.

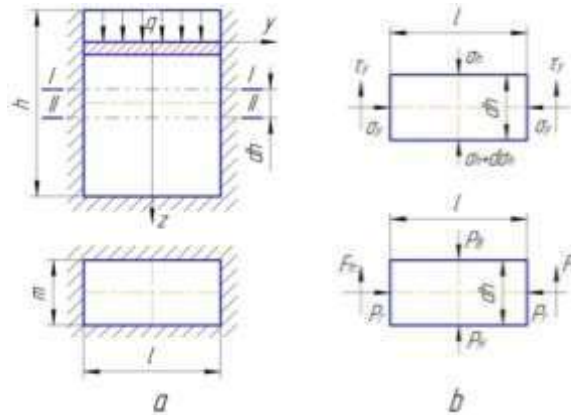


Figure 1. Schemes for compaction of the abrasive mixture and the resulting stresses: a - sealing scheme; b - a diagram of the stresses and forces acting on the elementary volume of the mixture.

$$P_H = (\sigma_h + d\sigma_h)l \quad (2)$$

Where, P_H is the force acting on the lower plate of the stamp.

$$P_r = \sigma_y \cdot dh \quad (3)$$

Where, P_r is the force acting on the side plates.

$$F_{fr.} = \tau_y \cdot dh$$

Where, $F_{fr.}$ is the friction force on the side plates.

Assuming that $\tau_y = f_{fr.} \cdot \sigma_y$ we get:

$$F_{fr.} = f_{fr.} \cdot \sigma_y \cdot dh \quad (4)$$

Where, $f_{fr.}$ is the coefficient of friction of the compacted mass on the surface of the stamp plates.

The dependence between σ_y and σ_h can be represented in the form according to [1]:

$$\sigma_y = k \cdot \sigma_h \quad (5)$$

Where, k is the lateral pressure coefficient.

The average value of the coefficient of lateral pressure, in our case, the value of k mainly depends on the coefficient of internal friction and are determined:

$$k = 1 + 2f_{fr.}^2 - 2f_{fr.} \sqrt{1 + f_{fr.}^2} \quad (6)$$

Using dependence (5), we write:

$$P_r = k \cdot \sigma_y \cdot dh \quad (7)$$

Hence the friction force:

$$F_{fr.} = f_{fr.} \cdot k \cdot \sigma_y \cdot dh \quad (8)$$

Given that, the mass acting on the allocated volume of height dh is negligible compared to the external pressure created by the punch, therefore, it is neglected.

The adhesion strength of the particles of the mixture with each other depends on the properties of bulk mixtures and the pressure q_ϵ that occurs during compaction of the mixture is determined by the formula:

$$q_\epsilon = \frac{c}{\tan \varphi} \quad (9)$$

Where, C - cohesion of the particles of the compacted mixture, MPa ; φ - is the angle of internal friction of the particles of the mixture being compacted.

The equilibrium equation of the allocated volume in the projection onto the vertical Z axis (Fig. 1, b).

$$P_B - P_H - 2F_{fr.} = 0 \quad (10)$$

Substituting the values of forces from equations (1), (2) and (8) and dividing respectfully by l , we obtain:

$$\sigma_h - \sigma_h - d\sigma_h - \frac{2f_{fr.}}{l} k \sigma_h dh \quad (11)$$

From here, dividing the variables we get:

$$\frac{d\sigma_h}{\sigma_h} = -\frac{2f_{fr.}k}{l} dh \quad (12)$$

Given that $\frac{2f_{fr.}k}{l} = B$, we write:

$$\frac{d\sigma_h}{\sigma_h} = -Bdh \quad (13)$$

After integrating equation (13), we obtain:

$$\ln \sigma_h = -B \cdot h_i + c' \quad (14)$$

Where, c' - integration constant. For $h = 0$ and $\sigma_h = q_P + q_\epsilon$, we find:

$$c' = \ln(q_P + q_\epsilon).$$

h_i - is the current coordinate measured from the plane of the plate being compacted; q_p - is the pressure of the punch on the mixture being compacted.

After transformations (14) we get:

$$\sigma_h = (q_p + q_\varepsilon) \cdot e^{-Bh_i} \quad (15)$$

Substituting the values of q_ε and B in equation (15), we obtain the vertical stress in the form:

$$\sigma_h = \left(q_p + \frac{c}{tg\varphi} \right) \cdot e^{-\frac{f_{fr}k}{l}2h_i} \quad (16)$$

The horizontal voltage is determined by:

$$\sigma_y = k \cdot \sigma_h = k \cdot \left(q_p + \frac{c}{tg\varphi} \right) \cdot e^{-\frac{f_{fr}k}{l}2h_i} \quad (17)$$

On the side plates there are tangential stresses:

$$\tau_y = f_{fr} \cdot k \cdot \sigma_h = f_{fr} \cdot k \cdot \left(q_p + \frac{c}{tg\varphi} \right) \cdot e^{-\frac{f_{fr}k}{l}2h_i} \quad (18)$$

To determine the pressing conditions, it is necessary to establish the relationship between the magnitude of the deformation along the height of the stamp and the stresses in the volume of the mixture being compacted.

Using equation [3], we write:

$$q_{II} = \alpha \cdot k_y^\beta \quad (19)$$

Where, α is the empirical coefficient (depends on the properties of the mixture being compacted), MPa; k_y is the compaction coefficient; β is an exponent which is determined experimentally.

$$k_y = \frac{\Delta h}{H} = \frac{h-H}{H} \quad (20)$$

Where, Δh - precipitation of the mixture, mm; H - the height of the compacted briquette (product), mm; h - the height of the filling mixture (limited by the height of the mold), mm.

Substituting expression (19) into equations (16), (17) and (18), and denoting $\gamma = -f_{fr}k \frac{2h_i}{l}$, we obtain:

$$\sigma_h = \left[\alpha \cdot k_y^\beta + \frac{c}{tg\varphi} \right] \cdot e^\gamma; \quad (21)$$

$$\sigma_y = k \left[\alpha \cdot k_y^\beta + \frac{c}{tg\varphi} \right] \cdot e^\gamma; \quad (22)$$

$$\tau_y = f_{fr} \cdot k \left[\alpha \cdot k_y^\beta + \frac{c}{tg\varphi} \right] \cdot e^\gamma; \quad (23)$$

The dependences (21), (22), and (23) obtained above make it possible to single out factors affecting the magnitude and distribution of stresses during the pressing of the abrasive mixture of Angren rock. Firstly, these are dimensional factors, which include: the filling height of the mixture h , the pressing length l and the amount of settlement Δh which characterize the deformation during compaction. Secondly, factors characterizing the state of the material being compacted: OS - an indicator of the compression curve of compression of the mixture (determined experimentally for various compositions of powder mixtures); β - also an indicator of the compression curve, depending on the properties of the mixture being compacted; C is the adhesion of the particles of the mixture being compacted (it is a characteristic of the material's cohesion) k is the coefficient of lateral (spacer) pressure. Thirdly, the friction coefficient f_{fr} of the mixture material on the side plates of the stamp during pressing and the angle φ of the internal friction of the particles of the mixture material to be compacted.

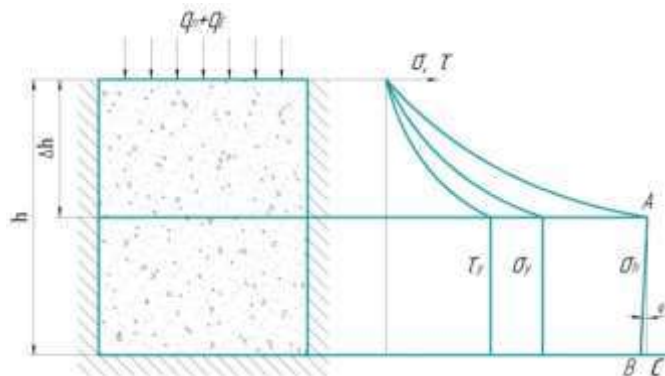


Figure 2. Scheme of stress distribution during compression of the mixture.

Thus, the value of the coefficient of friction of the mixture on the side walls of the stamp is important for pressing. An analysis of the obtained dependences shows what factors can be varied to reduce the unevenness of pressing and equalize the

pressure of abrasive particles on the side plates to increase their wear resistance and the quality of the molded products.



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TEACHING NATIONAL CRAFTS IN SCHOOLS

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ABSTRACT

This article is dedicated to the development of folk crafts and interesting, effective and full-fledged labor education classes organized in secondary schools.

KEY WORDS: *Folk handicrafts, national, spiritual, cultural heritage, national embroidery, manufacture, national values and traditions.*

DISCUSSION

Folk handicrafts are the spiritual, material and cultural heritage of each nation, including the Uzbek people, which can serve as a field of origin, formation, historical development, expression of national values. Therefore, the teaching of folk crafts to young people and schoolchildren is of great importance in their spiritual upbringing, acquaintance with the crafts, traditions, centuries-old national values of their people and their professional orientation. Folk handicrafts include more than 150 fields like painting, pottery, jewelry, wood carving, metal carving, embroidery, tanning, cooking, wood burning, handicrafts, stone carving, blacksmithing, knife making, tool making, such as locksmithing, coppersmithing, needlework, and has many features of labor and vocational education – practicality, creativity, nationality, ease of finding and repairing local raw materials, boys and girls are characterized by the specificity of child labor, the ability to combine urban and rural school, in most cases does not require complex devices, equipment, tools and lathes, the simplicity of the organization of classes. As a result, the unemployment of young people who have sufficiently studied the industry, who have acquired certain professions, is particularly noteworthy for the competitiveness of the labor market. Folk crafts are based on the skills and abilities to consistently study, develop and enrich national values and traditions.

Indeed, the Law on “Education” states that “General education is a key link in the system of continuing education, providing students with scientific knowledge, labor and primary vocational training. They will be able to master the basics of business, as well as develop their creative abilities

and spiritual qualities.” Folk crafts help to shape the qualities of young people, such as thinking, imagination, aesthetic taste, dexterity. After all, these qualities and attributes have an effective impact on the comprehensive development of the younger generation.

With this in mind, in recent years in our country are developing several dozen types of folk arts. There is a wide range of preservation, restoration and repair of ancient monuments. In particular, monuments in Samarkand, Bukhara, Khiva, Kokand and Tashkent are being restored, folk masters are involved in their restoration, and masters and their students are decorating the monuments.

Despite the fact that there are dozens of folk crafts that are in harmony with the history of the formation of the Uzbek people, in the modern education system there are cases when they are almost never used, which leads to the separation of the education system from national, local, ethnic, historical features in the direction of labor and profession. That is why today one of the most important tasks is to revive our Uzbek national traditions. Whatever profession there is in the world, there will surely be its masters and its disciples. There are masters of painting, pottery, coppersmithing, knife-making, weaving, carpet-weaving, goldsmithing, wood-carving, basket-making, blacksmithing, bone-carving, stonemasonry, blacksmithing, and other crafts. At a time when great attention is paid to the development of national crafts, teachers are teaching their students based on our Uzbek national traditions. Every profession has long been considered sacred and they have been revered. Our ancestors developed specific moral norms, special procedures, customs, manners, rituals,



prayers, national traditions for teachers and students, and strictly adhered to them.

In studying the pedagogical conditions for the use of folk crafts in improving the labor and professional training of secondary school teachers, it is necessary to pay attention to the following aspects:

1. In order to educate students in the lessons of labor education on the basis of folk crafts, it is necessary to create a modern scientific and theoretical basis of the field by studying and analyzing the content of the works of thinkers, sages and scientists published in historical sources.

2. In order to educate students of general secondary schools in the lessons of labor education on the basis of folk handicrafts, taking into account the national, local, regional capabilities of folk handicrafts, boys and girls should actively participate, or it is necessary to select the fields of tannery, handicrafts, knife-making, goldsmithing, embroidery, and to develop their teaching aspects.

3. In choosing the content of the curriculum used in general secondary schools, it is necessary to educate students on the basis of folk handicrafts, to study the basics of folk handicrafts and to teach them folk handicrafts on the example of this field.

4. In determining the goals and objectives of education in the educational process of educating students on the basis of folk crafts, of course, it is necessary to use their own unique pedagogical methods and tools. At present, the main direction of all research is to determine the ways and pedagogical conditions for the use of national, spiritual, cultural heritage, values, historical achievements of our people in the system of continuing education, labor and professional pedagogy.

From time immemorial, our ancestors have been passing on their professions from generation to generation, occupying the peaks of discovery and science created by mankind. For example, wood carving, painting, architecture, carving, pottery, knife-making, jewelry, embroidery, goldsmithing, carpet weaving, weaving, basket-making and others. In this regard, each master reflects the specific aspects of the artistic traditions of the place where he lived and created. For example, Khiva folk masters preserved the naturalness of wood in woodcarving, while Bukhara craftsmen quietly painted the patterned objects and painted them with gold and silver colors. Kokand folk masters carved wood in medium depth; Tashkent folk masters made patterns on the surface of the board without floor, through lines, and worked a lot of border patterns. The masters of Margilan dug the ground for carving very deeply. Nowadays, wood carving is widely used not only in architecture, but also in the decoration of household items.

Uzbek national embroidery is one of the most ancient forms of folk handicrafts, which was created as a result of the people's desire to beautify their lives. Embroidery has long been used in the decoration of clothing and accessories, as well as in the manufacture of household ornaments. The art of our embroidery is famous not only in our country, but also abroad. Uzbek handicrafts are made not only in homes in France, Italy, Japan, Germany, Belgium, America, India, but also in the Fergana Valley of the Republic, rather, many specimens were collected in museums of applied art and became a permanent exposition.

Andijan artist H. Nazarov, Samarkand embroiderer Usmon Shokirov, Tashkent embroiderer and weaver Khairi Sabirova, two great representatives of embroidery, created new patterns and embroidery techniques for embroidery. H. Sobirova learned the secrets of hand and machine sewing and drawing from her mother Zahira Mirkholikova. From the age of 15, H. Sobirova taught her mother's embroidery profession and contributed to the development of many students.

In Uzbek embroidery, iroqi, ilma, yorma, bosma, xomduzi, chamak, chinda hayod, baxya stitches are widely used.

The masters of embroidery have carefully studied the structure, rules of growth, appearance of flowers, leaves, twigs, buds, birds, etc. in nature, and have styled various elements from them to work on various pattern compositions.

Uzbek embroidery has a lot of plant, geometric and floral patterns, Russian embroidery has a lot of geometric, plant shapes, flowers, birds and fruits, and Kazakh and Kyrgyz embroidery has more animals, elements reminiscent of horns and hooves are depicted.

As a result of the radical reforms being carried out in our country, today, as in all spheres, employment and vocational training, including handicrafts, are gradually developing and improving. In order to rationally use the labor resources of the population in our country, many laws and decrees have been developed on certain types of professions, especially on folk crafts, which have been restored and are being restored today as a national value.

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THE ROLE OF TEACHERS IN THE FORMATION OF CIVIC CULTURE AND OPPORTUNITIES TO IMPROVE CIVIC CULTURE AMONG THE YOUTH

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ABSTRACT

This article substantiates the essence and content of civil culture as an important component of the entire harmonic developed generation of a scientific and theoretical point of view. As well as revealing some features of civil society, the models of civil culture of the younger generation of civil society are presented.

KEYWORDS: *civil society, civil culture, education, comprehensive, generation, personality, model, features, patriotism, activity, hard work, duty, obligation.*

DISCUSSION

Socioeconomic and sociopolitical transformations in the Republic of Uzbekistan, which began from the day of its Foundation, when the country entered the path of building a democratic legal state and developing the foundations of civil society, contributed to a deep spiritual and moral revival of the Uzbek people. In connection with spiritual-moral, socio-economic and spiritual-cultural development in all spheres of life of the Republic achieved significant results in laying a solid Foundation of building a democratic legal state and civil society development. At the center of all these achievements and transformations is the person and his spiritual and educational activities. This thesis puts forward new requirements for a person. The main environments of their activities are: responsibility for their family, people, Homeland and their actions, active life position, possession and overcoming of national and social values, independence of beliefs, ability to adapt to social and political changes, to be a spiritual hero and a highly intellectual person.

In our opinion, civil culture occupies an important place in the system of a spiritually rich, intellectually developed individual, as an important component of the harmonious development of the generation.

Civil culture - as the most important characteristic of the level of development of the basic forces of a person, his gifts, abilities, as a participant in the training and development of the material, spiritual

sphere of action and transforming, transforming forces to meet the needs of society and the individual. Experience shows that the civic culture of young people is brought up by parents in the family, educators and teachers in educational institutions. The formation of civil cultural qualities in young people is unusual for society, the education of a free person who is deeply aware of their rights and responsibilities. Having an active life position, asserting humanistic values in society, largely depends on the system of upbringing and education of the younger generation. It is important that if we want to form a harmoniously developed generation, we must first transform all developing educational institutions that answer modern questions with powerful material and technical basis and modern-literate teaching staff. To do this, it is necessary to improve the professional and the sociotheoretical training of teachers to implement the formation of civil culture among young people.

In order for the teacher-educator to actually implement the task set by the state and society, that is, to form a civil culture among the younger generation, he must know the following:

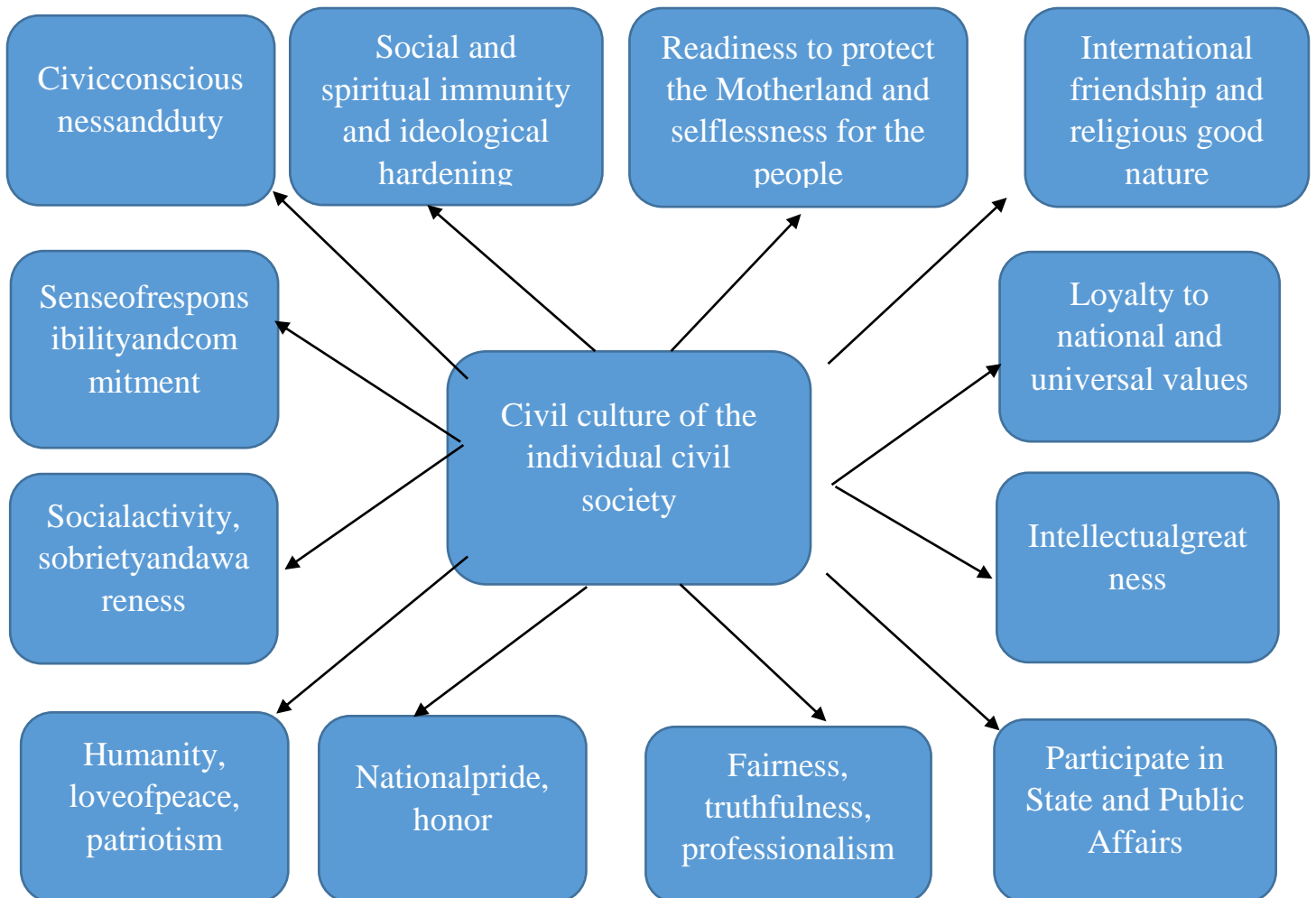
- The essence and specific feature of civil society;
- Model of civil culture of the younger generation of civil society,
- Specific issues of implementation of the model and target component of civic culture
- Forms and methods of civic culture formation;



➤ Criteria for the formation of civic culture among the younger generation.

Thus, taking into account the specifics of the problem under study and the features of civil society, we have developed the following model:

➤ **Model of civil culture of the individual civil society**



This model reflects the following qualities and attributes: cultures of the individual and civil society that contribute to for the younger generation to perform clearly and honestly civil duties, to form a sense of duty and responsibility to the Motherland, society, and the collective where they work and studies and family; a sense of national pride and patriotism, democracy, respect for symbols of statehood(Constitution, Coat of arms, Flag, Anthem, President of the country); careful attitude to national wealth of the country, language, culture, history, traditions; political education and legal literacy; respect for the freedom, rights and duties of other people, integrity, truthfulness, charity, tolerance, culture of interethnic it's democratic.

In addition to the above, the model of civil culture of the individual of civil society, as shown by the results of our research, contributes to the practical solution of the following issues facing the country and society for the education of students and youth:

- Formation of an active social and civil position among young people in the process of studying the Constitution of the Republic of Uzbekistan, the Civil Code of the Republic of Uzbekistan and social and humanitarian Sciences.
- Fostering a sense of pride and respect for symbols state (Constitution, coat of Arms, Flag, GIM) of the Republic of Uzbekistan, independence from the nation, gender, age, race and nationality, beliefs, attitudes to



religion, social background of residents and students in the territory of the Republic of Uzbekistan;

- Expand and deepen students' knowledge of civil society and civil culture by organizing various educational and cultural events;
- Expand and deepen knowledge about family traditions, schools, national and social values, customs and cultural events;
- Expand and deepen the understanding of civil society, civil culture, their structure and functions;
- To form and develop the essence of the concept of civic morality, civic spirituality, and civic thinking;
- To show how the civil culture of the young generation has a great influence on the formation of civil society in the country and is a powerful factor in its development, etc.

The goals and objectives of the developed model can be solved by organizing various activities in the extracurricular and extracurricular educational process paying special attention to the following educational and educational issues:

- Create a sociopolitical, cultural and educational environment;
- Develop a scientific and methodological program for the individual study of the essence and sociohistorical development of civil society and the quality of the individual in it;
- To strengthen the educational influence of joint activities of Universities, families and the public on the formation of civil culture among young people;
- Pay special attention to improving the quality and effectiveness of educational work, strengthening the role of group leaders, Deputy deans of spiritual and educational works;
- It is advisable to integrate the educational activities of the educational institution, family, mahalla, "youth center", on the issue under study;

The above-mentioned events help students to better understand the content and essence of the "civil culture of the individual in civil society", social and pedagogical phenomena and contribute to their practical application in life.

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MONETARY WELFARE PROVISION OF PUBLIC HOSPITALS IN MIZORAM

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ABSTRACT

There is a worldwide consensus that health is one of the most important factors for social welfare, economic growth and development and progress at large. A healthy population leads to a vibrant and strong economy by increasing the productivity as well as the working capacity of the labour force. Hence, a healthy population or workforce is necessary for human resource development which will ultimately lead to the desired outcome of any economic policy—sustained long-run growth and development. Healthcare is the maintenance or in other words, the improvement in health through prevention, diagnosis, and treatment of injury, illness or malady and other physical and mental impairments in a person. In economics, the concept of welfare is used in a narrow sense: it is limited to only material economic welfare. The study is based on secondary data. Secondary data from Civil Hospital, Aizawl for the period of April, 2019 to March, 2020 is collected for this study. Civil Hospital Aizawl has been selected as a representative of all other public hospitals in Mizoram since it has the best facilities as well as the most number of indoor and outdoor patients in Mizoram. The study finds that the monetary savings that accrued to indoor patients who availed the services of Civil Hospital Aizawl during the study period is a huge sum of 18,529,469.28 INR. The total money cost of investigation is 133,270,275 INR in Civil Hospital Aizawl and if all the investigations were done at private laboratories or hospitals, the total money cost would have been a whopping amount of 593,738,030 INR. As such, the total monetary savings accruing to patients who availed the services of Civil Hospital Aizawl is 460,467,755 INR. The study concludes that Public Hospitals act as a quintessential paradigm for analysis of healthcare provision en masse. Although there are rooms for improvements and further outreach for public hospitals as compared to their private counterpart, their role and indispensable nature is ever relevant in the literature of welfare economics.

KEYWORDS: Health Economics, Welfare Economics, Healthcare, Monetary Savings

1. INTRODUCTION

There is a worldwide consensus that health is one of the most important factors for social welfare, economic growth and development and progress at large. A healthy population leads to a vibrant and strong economy by increasing the productivity as well as the working capacity of the labour force. Hence, a healthy population or workforce is necessary for human resource development which will ultimately lead to the desired outcome of any economic policy—sustained long-run growth and development. As such, the importance of health cannot be neglected in the field of economic study and research. At the same time, an unhealthy population riddled with chronic disease, epidemic and many other maladies is a burden for all policy makers and Governments across the world at large. So, a sound economic progress is

linked with health and the provision of healthcare facilities to its population.

Importance of Health

Better health is central to human happiness and well-being. It also makes an important contribution to economic progress, as healthy population live longer, are more productive, and save more. A good health is achieved by following a few collective patterns which are health related. If we follow this logic we will also realize the importance of having healthy lifestyles which will add to the benefits of having a healthy life. Achieving and maintaining health is an ongoing process, shaped by both the evolution of health care knowledge and practices as well as personal strategies and organized interventions for staying healthy. Therefore, good



health is a priceless blessing in life. The famous saying 'Health is Wealth' highlights the importance of good health in our life.

Importance of Healthcare and Welfare

Healthcare is the maintenance or in other words, the improvement in health through prevention, diagnosis, and treatment of injury, illness or malady and other physical and mental impairments in a person. In economics, the concept of welfare is used in a narrow sense: it is limited to only material economic welfare. Welfare Economics imparts economic science a normative character. It is the study of conditions that maximize economic welfare of society as a whole. In the words of Oscar Lange, "Welfare economics is concerned with the conditions which determine the total economic welfare of a community." The function of welfare economics is to evaluate alternative economic situations and determine whether an economic situation yields greater economic welfare than others. Welfare economics may also be defined as that branch of economic science which evaluates alternative patterns of resource allocations from the viewpoint of maximizing economic welfare of the society as a whole. (Lange, 1942)

There are three main concepts of social welfare. The first concept of social welfare is the paternalist one which describes the views of a paternalist authority or state and not of the individuals of the society. The second is the Paretian concept in which welfare of the society is simply the sum total of the welfare of different individuals comprising it. If some persons are made better off and none worse off, social welfare increases and if some are made worse off and none better off, it decreases. The third concept of social welfare involves interpersonal comparison of utility which is to be made by introducing explicit value judgments. (Graff, 1957) This concept of social welfare has been propounded by Bergson and Samuelson in their well-known theory of social welfare function. (Bergson, 1938)

Since welfare economics is concerned with the desirability or otherwise of economic policies, the value judgment plays a crucial role. It means the conceptions or ethical beliefs of the people about what is good or bad. These conceptions regarding values of the people are based on ethical, political, philosophical and religious beliefs of the people and are not based on any scientific logic or law.

2. LITERATURE REVIEW

Tokita *et al.* (2000) estimates healthcare expenditure functions by age groups and inpatient and outpatient in order to find the determinants of healthcare expenditure in Japan. The result suggests

that difference of the per capita medical expenditure among the prefectures is mainly due to disparities of the number of beds and doctors per capita. (Tokita, Chino, & Kitaki, 2000).

Since the financial cost of healthcare is an important factor with respect to access to healthcare facilities, Yadav (2007) in a cross sectional study conducted at the Government Medical College Hospital, shows that owing to inflation and rising costs of commodities, some people from the upper middle class can no more afford the costs incurred in the private medical sector and have to therefore seek medical services of a government hospital. (Yadav, 2007).

Khursheed (2017) argues that primary healthcare is the foundation of total healthcare of any country because it is cost effective and has huge forward linkages with emphasis more on the prevention of the diseases than their curative aspects. His study concludes that in the developing countries with huge population, prevalence of mass poverty and expanding income inequalities, the component of preventive healthcare is the neglected side of total healthcare. (Khursheed, 2017)

Bhat *et al.* (2006) highlights that financing of healthcare through public and/or private channels are one important component of this strategy. Their study examines the relationship between income and public and private healthcare expenditures. (Bhat & Jain, 2006)

Li *et al.* discusses the progress and prospects of China's complex health care reform beginning in 2009 and recommend that China should take advantage of policy experimentation to mobilize bottom-up initiatives and encourage innovations. (Li & Fu, 2017)

3. OBJECTIVES

- To highlight the total number of indoor and outdoor patients treated during the base period
- To determine monetary savings accruing to patients for both indoor and outdoor patients
- To determine monetary savings for doing investigations at a public hospital

4. METHODOLOGY

The study is based on secondary data. Secondary data from Civil Hospital, Aizawl for the period of April, 2019 to March, 2020 is collected for this study. Further, secondary data is also collected from the Health Directorate of Mizoram Government, Economic Survey, NSSO data and Private Sector Healthcare Providers. Relevant information pertaining to this study is also collected from various e-resources, books, and journals. Various statistical



methods have been incorporated in order to elicit the required data and information for the study. Civil Hospital Aizawl has been selected as a representative of all other public hospitals in Mizoram since it has the best facilities as well as the most number of indoor and outdoor patients in Mizoram.

5. FINDINGS AND DISCUSSION

Table-1 shows the rate of consultation or cost for rendering the service of doctors at Civil Hospital

Aizawl and other private clinics and hospitals. For patients who visit OPD, a minimal registration fee of 10 INR is charged and there is no registration fee for patients who avail the emergency service. The average cost of consulting doctors at private clinics and hospitals is 400 INR—the cost may vary depending on the doctor’s popularity, reputation, qualifications etc. but the usual cost ranges from 300-500—and for those availing the emergency services of private hospitals is 300 INR.

Table-1: Public and Private Cost of Consultation

Sl. No.		Public Rate	Private Rate
1	OPD	10	400
2	Casualty	NIL	300
	Total:	10	700

Source: Author’s field survey, 2020

Table-2 shows that the total cost of availing the studied hospital’s services is barely 3,498,850 INR; as compared to 153,478,900 INR that must have been spent on private clinics and hospitals if Civil Hospital Aizawl were not consulted or if the patients had opted for other private entities that provide healthcare services. The difference between private

cost (PC) and civil cost (CC) is 149,980,050 INR, which is a huge sum if the economic situation of Mizoram is taken into consideration. Table-2 alone can convey that public healthcare services alone contribute a lot to the welfare of the masses especially those that cannot afford private services that charge exorbitant fees as compared to Government hospitals.

Table-2: Money Savings for Consulting Public Hospital

Sl. No.	Department	Total no. of Patients	Public Cost	Private Cost	Savings [PC-CC]
1	OPD	349,885	3,498,850	139,954,000	136,455,150
2	Casualty	45,083	NIL	13,524,900	13,524,900
	Total:	394,968	3,498,850	153,478,900	149,980,050

Source: Author’s Compilation

Table-3 shows the various wards and bed strength of Civil Hospital Aizawl and the number of admissions issued during the study period. ALS refers to average length of stay and COA refers to cost of admission. On average, indoor patients stayed 7.43 days during the study period. The average length of stay for each ward and patient cannot be taken into consideration since the study period of this research does not permit such inquiry which requires a lot of

time. As such, a simple average of patients’ stay during one financial year is used for different wards to evoke the monetary savings that have been made. It can be seen that the total admission during the study period is 13,881 across various wards and the average cost private hospitals for indoor patients for various illness and ailments is 1334.88 INR.



Table-3: Comparison of Public and Private Costs of Indoor Patients

Sl. No.	Ward	Bed Strength	No. of Admission	ALS	COA [Civil]	COA [Private]
1	New Cabin	11	167	7.43	NIL	3,000
2	Emergency	9	1065	7.43	NIL	500
3	Cabin	15	161	7.43	NIL	3,000
4	FMW	10	260	7.43	NIL	500
5	GW - II	15	670	7.43	NIL	500
6	ENT	10	676	7.43	NIL	500
7	MSW	16	1161	7.43	NIL	500
8	FSW	16	922	7.43	NIL	500
9	Eye	11	653	7.43	NIL	500
10	Pediatrics	24	941	7.43	NIL	500
11	MMW	26	565	7.43	NIL	500
12	Orthopaedic	30	1100	7.43	NIL	500
13	ICU	5	133	7.43	NIL	5,000
14	MPW	30	3502	7.43	NIL	500
15	GW - I	15	858	7.43	NIL	500
16	SSR	6	102	7.43	NIL	500
17	NICU	11	599	7.43	NIL	5,000
18	Cardiology	10	346	7.43	NIL	500
	Total/Average:	270	13,881	7.43	NIL	1334.88

Source: Author's Compilation

Table-4 highlights the monetary savings that accrued to indoor patients who availed the services of Civil Hospital Aizawl during the study period. PAC

represents private average cost and AI admission issued respectively. The total monetary savings is a huge sum of 18,529,469.28 INR.

Table-4: Money Savings for Indoor Patients

Sl. No.	Department	Admission Issued	PAC	Savings [PAC*AI]
1	OPD	12,816	1334.88	17,107,822.08
2	Casualty	1,065	1334.88	1,421,647.20
	Total:	13,881		18,529,469.28

Source: Author's Compilation

Table-5 shows public and private rate of investigation on 12 broad types of investigations and follow-up. Dialysis costs the highest and ECG the cheapest on both on both civil and private. The average cost of laboratory investigation is calculated by taking the average cost of various types of investigations. Also, there are various kinds of X-ray and CT scan that can be done on various parts of the body in which the cost also varies. So, for simplicity, the average cost, i.e., the summation of the cost of different types divided by the total number of different types, is also taken into consideration. The

highest cost of investigation at Civil Hospital, Aizawl is dialysis and the lowest is Pulmonary Function Test (PFT) which is done at free of cost. The highest cost of investigation at Private Hospitals, Clinics or Laboratories is dialysis and the lowest is Electro Cardiogram (ECG).



Table-5: Average Cost of Investigation as Compared to Private Clinic

Sl. No.	Name of Investigation	Civil Rate [INR]	Private Rate [INR]
1	Laboratory	125	490
2	Endoscopy	250	3000
3	ECG	50	450
4	EEG	300	1400
5	X-Ray	300	1700
6	Ultrasound	350	1000
7	Bronchoscopy	1000	5000
8	Echo	400	2000
9	CT Scan	1425	4500
10	Physiotherapy	200 [10 Days]	2000 [10 Days]
11	PFT	FREE	900
12	Dialysis	2000	12000

Source: Author's Compilation

Graph-1 shows the cost comparison of various investigations and follow-up that are shown in the preceding table. The cost of investigation is measured on the vertical axis and the name of the investigation is shown on the horizontal axis. Investigations and

follow-up are broadly classified into 12 broad categories out of which the highest figure is laboratory investigations as shown in Table-5 but the highest cost of investigation as depicted in the graph is dialysis in both civil and private hospitals.

Graph-1: Average Cost [Investigation] Comparison of Civil and Private

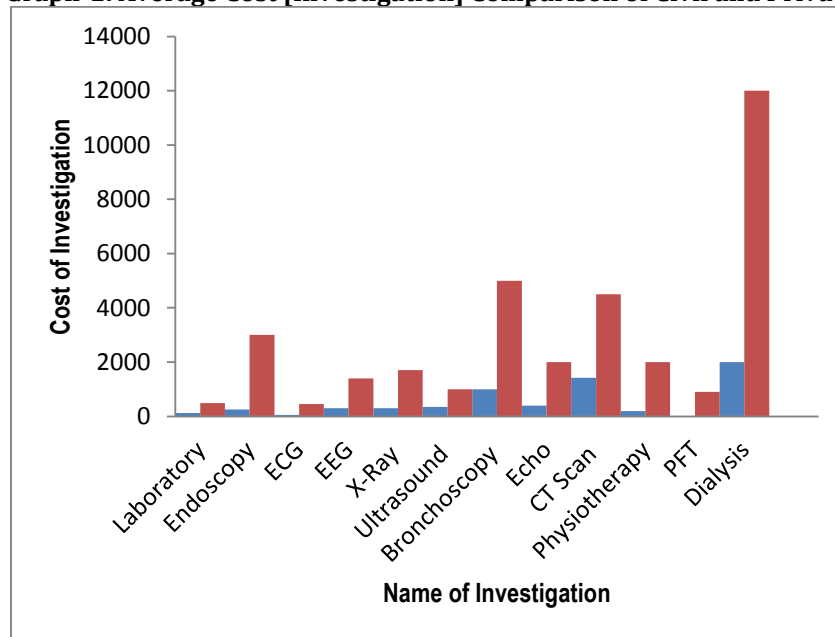


Table-6 shows that the total money cost of investigation is 133,270,275 INR in Civil Hospital Aizawl and if all the investigations were done at private laboratories or hospitals, the total money cost would have been a whopping amount of 593,738,030 INR. As such, the total monetary savings accruing to

patients who availed the services of Civil Hospital Aizawl is 460,467,755 INR—calculated by the potential private cost minus total civil cost from the above table.

**Table-6: Money Savings by Doing Investigation at Public Hospital**

Sl. No.	Type of Investigation	Total no. of investigation	Public Cost	Private Cost
1	Laboratory	823,632	102,954,000	403,579,680
2	Endoscopy	4,405	1,101,250	13,215,000
3	ECG	8,357	417,850	3,760,650
4	EEG	406	121,800	568,400
5	X-Ray	25,444	7,633,200	43,254,800
6	Ultrasound	4,546	1,591,100	4,546,000
7	Bronchoscopy	96	96,000	480,000
8	Echo	1,730	692,000	3,460,000
9	CT Scan	3,787	5,396,475	17,041,500
10	Physiotherapy	30,133	6,026,600	60,266,000
11	PFT	140	NIL	126,000
12	Dialysis	3,620	7,240,000	43,440,000
	Total investigation/cost:	906,296	133,270,275	593,738,030

Source: Author's Compilation

6. CONCLUSION

The study shows that Public Hospitals act as a quintessential paradigm for analysis of healthcare provision en masse. Although Public Hospitals are often victims of malice and polemics, their role is the provision of affordable healthcare services especially with regard to developing countries like India can not be neglected. As such, this paper highlights the monetary welfare provision of a particular public hospital in Mizoram, i.e., Civil Hospital, Aizawl. Although there are rooms for improvements and further outreach for public hospitals as compared to their private counterpart, their role and indispensable nature is ever relevant in the literature of welfare economics.

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THE ROLE OF MASS SPORTS IN THE UPBRINGING OF A HARMONIOUSLY DEVELOPED GENERATION

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ANNOTATION

Human health is the most important asset. This puts the family, school, and other institutions in the area of upbringing and education in a healthy way of life. The health of the nation is also naturally resolved through a healthy lifestyle. Health is a balanced unit of biological, psychological, physical and labor activity of the human body. Health is a happiness for everyone. In this article role of sport in upbringing healthy generation is discussed.

KEY WORDS: *sport, healthy lifestyle, living, human*

DISCUSSION

Labor productivity of human is a prerequisite for the development of the economic potential of the country and the wellbeing of the people. A conscious and responsible approach to health, which is a nation's property, should be the standard of living and morality of society and all its members. In order to maintain and strengthen health, one must first be aware of the regularities of the structure, functioning, growth, development and reproduction of all the tissues and organs of the body. It also requires a thorough understanding and creation of the conditions necessary for the preservation and enhancement of these biological characteristics that are inherent to all human beings.

Creation of necessary conditions and opportunities for upbringing healthy and harmoniously developed generation in our country, realization of creative and intellectual potential of young people, upbringing of young men and women of the country, fully developed students are out of importance. The year 2010 has been declared the Year of Harmoniously Developed Generation in the

Republic of Uzbekistan for the purpose of implementation of wide-ranging targeted measures on the country. The program promotes healthy lifestyles among young people. Implementation of comprehensive measures to protect against drug addiction, various fatal threats, as well as religious and extremist influences that are alien to us are put in the first place. Healthy lifestyles - philosophical, psychology, pedagogical and general physiology, anatomy, hygiene, genetics, ecology and other natural sciences, are based on the methods they rely on.

Under the project "Healthy Lifestyles", students have been trained to apply the healthy lifestyles in their activities. In order to create these courses, the qualities that students need to develop are improved. Below you will find the basic set of healthy lifestyles, special courses and the skills to promote healthy lifestyles.

The main health care measure is the medical service. The high level of awareness raising among the population, the increased emphasis on healthy life style, the regular exercise in sports significantly reduces the incidence of heart disease in many



countries. Exercise-aerobics and scraping, developed by American scientist Kenneth Cooper, have been used extensively in many countries, have helped many people improve their health, and are an effective means of preventing heart disease.

The person must be mentally and physically strong. Healthy lifestyle promotes cultural, physical development, labor productivity and creativity. The main components of the healthy lifestyle are effective work, personal hygiene, abstinence from bad habits, and proper nutrition at regular intervals, physical training, and regular exercise. Healthy lifestyle is one of the key preventive measures. It allows a certain number of psychological and physical requirements to be satisfied. Every day, there are a growing number of health slides: exercise, diet, sleep, bathing, and more. Everything should be aimed at one goal - to improve the health of people.

The transformation that is taking place in our society is the most important task of bringing up and educating a person who has an independent mind in the process, who has a clear purpose in life, and who is committed to a healthy lifestyle. The physical culture of healthy lifestyle requires daily routine and physical activity selection and planning to suit their age and physical fitness. The main issue is how to organize your activities and how to do exercise to meet the stated needs. It depends on the type of workout you choose to do, based on age and individual characteristics. Someone chooses to walk, run, swim, ride a bike, lift a 1-2-pound pack of stone, and some other sport they like. The physiological focus of various types of exercise above is mainly on the development of strength and endurance, leading qualities of the body's health. This training not only prepares a person for high-performance (mental, physical) work, but also facilitates life and practical skills, such as coping with the difficulties of social life, overcoming them, and coping with extreme situations in peace and war.

The results of the sociological survey showed that students do not have the necessary knowledge and skills in choosing one of the popular sports. Students (63%) who believe that they have a healthy lifestyle, physical culture feel it is important that they become accustomed to regular sports during their school years (37%). Because of the current lifestyle, they noted that they have more time (40.1%) for passive activities. The need for computers, phones, television, etc. is the cornerstone of modern day life. Regular exercise in the field of physical activity and the promotion of good health also raise the question of how to choose the right kind of sport. The solution depends on the individual's physical abilities, their training and fitness. Examples include lower body weight, hand wrestling, backpacking, swimming, table tennis, soccer, gymnastics, boxing, tourism, chess and more.

For middle-aged athletes such as handball, individual wrestling, volleyball, tennis, badminton, national wrestling, track and field athletics, and basketball. But this does not mean that they cannot be involved in other sports. Because each person is different from his / her own interests, the movement, and liking it. They are not engaged in the pursuit of a sport they like, or they can take into consideration the good conditions for those sports the goodness of the base, their proximity, their favorite coach and more.

In addition, 18-24 years are the first stage in the body's maturity, with periods of high load and energy consumption. It has been proven in practice that during this period a certain mode of action, the formation of a habit becomes a lifelong habit. According to V.D.Chernyavsky, the following types of physical activity can be included in the weekly exercise regime: games (30-60 minutes 2 times a week), special exercises (5-7 minutes 2-3 times a week) and active forms of work and leisure.

Physical culture, mass sports and its categorization are our next topic. Humankind has passed through the gates of the 21st century with great triumphal movements and is in the social sphere but to solve problems such as successes, victories, difficulties, puzzles, crises and ways to overcome them. The physical culture and sports of the members of our society, especially the youth, are no exception. Practically all countries are taking steps to intensify the search for and implement new ideas and methods of physical culture, sports, and to develop innovative projects, new programs, projects and more. A number of leading, wealthy countries in the world also have a high physical image of the USA, Germany, China, Japan and others.

Local and foreign researchers have shown that improving and preventing health, healthy lifestyle physical culture, mass sports, combining and incorporating various forms of training and finding effective methods that do not require significant financial costs. It plays an important role in addressing the goals and objectives of use. Physical culture is the set of achievements on creation and rational use of material, spiritual values and special means, methods and conditions for the purposeful realization of the members of society.

Physical culture is a product of certain historical conditions, wealth and property of the people, and remains a common imperative for the full development of the individual. Physical culture is an area of social activity that is part of the universal culture and is aimed at strengthening human health and developing physical abilities. The main indicators of the physical culture of the existing society are the health and physical well-being of people, the role of physical culture in education, in production, in life, in sports, and so on. Physical culture, speed and physical inclusion of a member of society with the level of



inclusion of physical culture in the daily life of the body, using the necessary material and technical base for the achievement of its physical health, perfection and development are very important. To meet the requirements set by biological age, possess vital skills and skills related to healthy lifestyle etiquette and traditions, interpersonal relationships, attitudes, ethics, and behavior are of great importance.

In the upbringing of a harmonious generation, a person does not have time to rest during fatigue, family tension, physical and mental stress, excessive mental activity, disruptions in his or her life, living, working and others, what is missing can lead to anxiety.

Stress factors, which have a constant effect on the upbringing of the adolescent generation, increase the metabolism disturbance in the human body, lead to the destruction of brain cells and memory. It reduces human capabilities and leads to impairment of activity. In upbringing harmoniously developed generation the followings lead to a better life:

- Healthy lifestyle, nutrition, good rest, physical education
- Goodwill, creative activities, leisure activities
- Hygienic factors

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TEACHING ENGLISH LANGUAGE TO BEGINNERS

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ABSTRACT

English knowledge will help to open many opportunities for children in the future and it will be invaluable in their future careers. However, teaching English to children is not an easy job. But it is also not difficult, if we already know how to do it. This scientific research is dedicated to help readers to make teaching more effective, by attending to learning and the inner mental world of the learner, and by then understanding how classroom activities and teacher decisions can create, or limit, children's opportunities for learning. In this article the aim of teaching English language to young beginners. This article also deals with young children's foreign language acquisition and learning within the scope of very early stages of the school system. Although there are many unorganized theories, opinions, models, and proposals about how to teach modern languages to beginners, we will be focusing on the work researches who have significantly contributed to this area of investigation.

KEY WORDS: *foreign languages, language teaching, young learners, early foreign language education.*

INTRODUCTION

The English language is the first foreign language teachers teach children at very early stages of schooling. Nowadays language learning is essential needed for children who want to immigrate to other countries to follow the educational systems and to be become useful members or citizens of those countries. There are many reasons for starting with the teaching of English at an early age. As the concept "teaching English to beginners" suggests, age plays a crucial role in what we teach and how we teach it, since a young learners class is different from an adult or teenager class in terms, of the learners' needs, the language competence emphasized, and the cognitive skills addressed. Specialists have in mind and expect that gaining some additional years for the learning of English as the most important international language will take beginners to higher levels of competence in its use. Languages researchers and educationalists point out that the younger children are the less difficulty they have with the second language acquisition because of the greater plasticity of their neuronal circuits. Early learning of a second language is also hoped to pave

the way for more intercultural understanding and facilitate the later learning of a third or fourth language. Studies have proved that learning English at an early age helps students grasp their mother tongue better, simultaneously, enabling them to acquire remarkable proficiency in their second language. The implementation of English teaching in kindergarten may also become a useful means for the younger generation to understand a deeper knowledge of religions and cultures in the world. [1. 136 – 139]

DISCUSSION

Absolute beginners are tough nut to crack because they have no previous knowledge of English. They'll be coming to you raw, sometimes without knowing their ABC's, numbers, and common phrases like "Hello" and "Goodbye". They won't know what nouns and adjectives are how to form a sentence or question. A rookie mistake many persons teaching English to complete beginners make is assuming that the students have understand the lesson or classroom instructions. In your first lesson, for beginners, adults or kids, your students, may not be accustomed to the Western way of schooling where



students raise their hands if they don't understand. In ESL beginner lessons, you cannot expect your students to get it immediately. Teachers need to provide lots of examples, check for understanding, and then ensure that your class has enough time to practice what you have just taught them. When teaching beginners English, this usually means drilling the students, and then having them practice it individually or with other students. Make sure to let them know that it's good to mess up during practice time so they don't feel pressured to be perfect on the first try. Teaching English to beginners is to show, not to tell, in the classroom. Students will better understand what you are trying to say if you use visual cues rather than spill a lot of words in their direction. What does this mean exactly? Instead of saying, "Let's learn the passive tense" practice how to teach basic English by giving clear examples of the target language structure, with simple drawings, pictures, short skits, and exaggerated gestures. Young children are not like other students.

Their needs are unique and teacher must be aware of this. It is important to understand that instructor could be one of the first adults a young child has interacted with outside of his or her own family. The separation from their parents in the beginning can be difficult, and a teacher must help them through this transition. A child can become very attached to you as a "substitute" for their parents, or they may shun you completely. Great teachers are adaptable to the emotional reactions of their students. And when it comes to your students' interactions, with other children, this can be one of the first times they interact with children their age. A teacher's role often becomes that of mediator when children have problems sharing or learning how to get along. Furthermore, teachers in early education need to be creative, and adaptive. They must think outside their own mature perspective and be able to place themselves in their students' shoes. Lessons in early education classroom are very hands-on. They involve arts and crafts, storytelling, exercise, educational, games and more. You need to be fast on your feet and highly, adaptable to continuously come up with new ways to guide children through their early learning stages. According to Mur (1998:5) a child arrives to school full of instincts and skills which he has already begun to use and he will continue to use them for learning his own language as well as a foreign language like in this case of English;

- Children have the ability for indirect learning.
- They have a lively imagination.
- By nature they are creative in different communication situations.
- They are able to grasp the gist of a message.[2]

David Singleton states that in learning a foreign language, "younger – better in the long run", but points out that there are many exceptions, noting that five percent of adult bilinguals, master a foreign language even though they begin learning it when they are well into adulthood, but it is generally agreed that younger people learning a foreign language, typically achieve fluency more often than older learners. Older learners may be able to speak the language but will lack the native fluidity of younger learners.

To make the learning more fun is to involve students in the creation of the visuals of realia. Having children involved to creating the visuals that are related to the lesson helps engage students in the learning process by introducing them to the context as well as to relevant vocabulary items. Language teachers can use language related arts and crafts activities while making or drawing the visuals. Certainly students are more likely to feel interest and invested in the lesson and will probably take better care of the materials.(Moon 200). We can get students to draw different characters or even create puppets. For younger students who cannot even draw well, make them copy what you or other learners draw on the board. Ask the learners to bring their own toys to English class. Use "show and tell" technique presentation that gives students a chance to introduce their objects in English. Since young learners have short attention spans, it is recommended to move quickly from activity to activity. Do to use thematic unit planning because it builds a larger context within which students, can learn language. When teaching English to young learners this way, you can incorporate many activities, songs, and stories that build on students' knowledge and recycle language throughout the unit. Haas (2000) supports the use of thematic unit planning for young foreign language learners by pointing out that "Foreign language instruction for children can be enriched when teachers use thematic units that focus on content-area information, engage students in activities in which they must critically, and provide opportunities for students to use the target language in meaningful contexts and in new and complex ways". A good way to plan a unit is to explore what content your students are learning in their other classes and develop English lessons using similar content. Since children easily make links to their home cultures, it is has always been a good idea to relate the language and content to students' home culture to personalize the lesson and provide them with an opportunity to link the new content and language to their own lives and experience. Remember that children enjoy repetition any time and any place. Practise basic routines in the classroom so that you can manage them in the class. [3]



Teaching English to children is not an easy job. But it is also not difficult, if we already know how to do it. Many researches do believe that a successful language teacher of children should possess some characteristics as follows:

1. Must be energetic and patient
2. Must love children.
3. Must pay attention to individual differences.
4. Must encourage, encourage and encourage.
5. Must let children see the beautiful and useful aspects of the language.
6. Must let them love you as the language teacher and the new language as well.
7. Must know the techniques of teaching.
8. Must respect children as human.
9. Must start teaching to children as soon as possible.

In addition, teachers of adults may need to re-think their approach when teaching children. (Carol Road). Nowadays, language teachers of adults are required to teach classes of children most of whom without any specialized training. Teaching English to children, should be enjoyable, interesting, repetitive, and understandable. In doing so, there should be appropriate methods and techniques for teaching English to them. When you become a teacher of children, you are no longer just a language teacher, you are also an educator. There are some helpful ideas to incorporate into the language classroom. These ideas come from the discussion and experience and researchers done by teachers and professionals.

1. Switch to simple English in the class
2. Speak clearly and concisely
3. Use enjoyable language learning games.
4. Use the board most of the time.
5. Have a sense of humor.
6. Let them listen to music and watch cartoons in English.
7. Don't forget background music when teaching or assigning them some tasks.
8. Use cassettes and CDs for modeling if you are not a native speaker.
9. Observe successful language classes for teaching tips.
10. Use pantomime and body language when necessary.
11. Get your real objects to the class.
12. Pay attention to seating arrangement of the children.
13. Call them by their first names or give them some new English names.
14. Check their home works regularly but not seriously.
15. Have a video recording of your classroom.
16. Give them break some times.
17. Be well-dressed.

Young beginners learn better when they are relaxed and stress free. This is because the affective filter, a mental barrier between the students, and the information is raised when learners are nervous or uncomfortable. When the affective filter is high, learners find it harder to understand, process, and remember information. TPR helps reduce the affective filter because it is less threatening than traditional language activities. Students do not have to produce language. Mistakes are unimportant and easily corrected by the teacher. Language is remembered easily and long-term.

Thanks to the technological developments, people are able to reach every people around the world, get knowledge about the events in the world easily, and they expose foreign language much more than ever via TV, games, social networks. This makes foreign language teaching and learning inevitable for us. English language has been inarguably accepted as the lingua franca, and also it has become one of the symbols of our time, like globalization, economic integration, networking, and the Internet.

Children receive short sessions in which they learn basic words or phrases in one or more languages, sometimes in a before- or after-school program. Through music, songs, and stories they may learn the numbers, colors and greetings in a foreign language, but the major goal of a FLEX (foreign language exploratory or experience) program is to increase children's awareness of other language and cultures and thus of their own. The focus is on exploring or experiencing languages, rather than developing proficiency in these languages (Met, 1991). FLEX programs can also create a high level of interest and motivate children to want to study a language. In FLES (foreign languages in the elementary school) programs, children study one language as a regular school subject for up to 45 minutes a day, several times a week. The goal of a FLES program is to help children develop listening and speaking skills in other language, as well as some proficiency in reading and writing the language, especially, in the later primary grades. Developing an appreciation of other cultures is also a typical goal of a FLES program. While there are a number of different FLES programs, all expect children to study a language for at least two years, often throughout the primary grades. Through extended exposure to the language, children can develop some proficiency and also develop "basic language-learning skills" that will help them as they continue to study the language in secondary school (Haas, 1998, p.44). [4]

The finding in our articles offered some insights into the duration, staffing and methods of TEYL programs. Study's findings suggest that instruction time significantly correlates with outcomes. For example, courses that provided one hour of TEYL instruction per week were found to



lead to “only rudimentary understanding and no productive skills development”. The effects of TEYL appeared to be best at three hours of instruction per week, but they plateaued after two years. Pfenninger’s study seems to suggest that methods that foster implicit learning, are more effective for young learners than traditional teaching is. This seems consistent with the observation, by Munoz, that younger learners seem to benefit more from implicit language learning. It is also in line with a considerable corpus of evidence, which suggests that children who learnt a second language by immersion tended to develop strong communicative skills.[5]

To conclude, we could say that we think of our work with the children as a continuous challenge, but their enthusiastic, inventive, and playful nature has won us over. Therefore, we try to make their experience with English as pleasant as possible, even if we are aware of the fact there is always room for improvement.

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THE ADVANTAGES OF USING INFORMATION AND COMMUNICATION TECHNOLOGIES IN TEACHING RUSSIAN AS A FOREIGN LANGUAGE TO THE CADETS OF THE NATIONAL GUARD INSTITUTE

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ANNOTATION

The article deals with identifying the advantages of using information and communication technologies in teaching Russian as a foreign language at the Military technical Institute of the National Guard. The author describes methods and techniques of using ICT technologies in teaching Russian as a foreign language. The article analyzes a set of e-learning materials for teachers, who should take into account the specifics of professional information and communication competence of the corresponding audience. Analysis of modern ICT showed that the methodologically correct use of ICT in teaching Russian as a foreign language contributes to the enhancing the development of passive speech, without which there is no active foreign speech, thinking in foreign language, nor full mastery of the Russian language in written form.

KEYWORDS: *ICT technologies, advantages, modern technologies, communicative competence, language competence, teaching Russian as a foreign language.*

INTRODUCTION

The use of innovative technologies in the educational process determines the quality of modern education. The introduction of advanced teaching experience in the educational process is aimed at transferring knowledge and skills that allow you to form a person capable of scientific, technical, innovative and creative activities.

An important role at this stage is played by information and communication technologies that allow integrating professional and foreign language training of a future competitive specialist and significantly improve the efficiency of the professional and educational process.

The article analyzes the Russian scientific and pedagogical literature on the use of ICT tools for teaching a foreign language. The main purpose of the study was to identify all types of ICT tools that have already been developed and used, all didactic opportunities and advantages, and the main directions for optimizing foreign language teaching. Today, graduate students should not only be able to speak a language, but also know a professionally oriented Russian language that will help in their professional activities.

OBJECTIVES

The law of August 29, 1997 № 464-I «On education of the Republic of Uzbekistan» defines several new requirements for the informatization of the educational process, among which special attention should be paid to the improvement of forms of education, the emphasis on the use of active and interactive teaching methods, including those based on ICT, which should be put into practice at all stages of the educational process, the implementation of new pedagogical technologies within the competence approach [1].

It was assumed that ICT tools should be used in teaching Russian in a non-linguistic Institute in fragments i.e. for forming and developing separate skills (lexical, grammatical, phonetic) or skills (speaking, reading, writing, listening), while the trend towards the implementation of multi-platform courses, when the teacher creates and simultaneously uses a variety of sites shows much effective results. The disadvantage of fragmentary application of technologies is a violation of the conceptual approach to teaching the Russian language, since all the author's developments are not used comprehensively.



The author of this article adheres to the idea of implementing ICT into the process of her Russian language lessons and also conducts a research in this field. Moreover, the author is developing her first e-book for the cadets of Military-technical Institute studying in the direction of «Legal support national security». This study involves the analysis of experiments conducted to identify the development of skills and abilities in Russian language acquisition through using ICT for reaching the professional goals of cadets in their future specializations.

LITERATURES REVIEW

The concept and role of information technologies as an element of modern methodological knowledge in the process of teaching the Russian language were considered in their works by scientists and practical teachers. For example, E. S. Polat asserts that «New pedagogical technologies... are unthinkable without the widespread use of new information technologies, computer in the first place», since they «allow us to fully reveal the pedagogical, didactic functions of these methods, to realize the potential inherent in them» [2].

In the work of P. V. Sysoev, the didactic properties and functions of modern information and communication technologies are considered, which make it possible to significantly intensify the educational process.

The authors note that the thinking of both the teacher and the student changes, and they become partners in the information search for relevant information for each of them. Didactic properties of ICT are described in detail in the works of P. V. Sysoev:

- a) Multilingualism and multiculturalism;
- b) Multilevel;
- c) Multi-genre;
- d) Multimedia content;
- e) Hypertext structure of documents;
- g) The ability to create a personal user zone;
- h) The ability to organize synchronous and asynchronous communication;
- i) The ability to automate the processes of information and methodological support and organization of management of educational activities of students and its control [3].

At the present stage, this list of didactic properties shows that the development of ICT and methods of teaching foreign languages based on ICT should be perceived not as an additional, but as one of the alternative learning options that can enrich and expand the active and passive vocabulary, give new cultural knowledge, form a stable motivation for cognitive activity and the skill of working in cooperation.

Analysis of foreign sources has shown that the issue of using ICT in the educational process in

the field of foreign language learning was raised at the end of the XX century. The use of appropriate software in the field of teaching modern languages, according to J. Highema provides a multi-level, flexible process of mastering a foreign language and allows you to improve the quality of students' education. Many foreign authors emphasize that the Internet is a unique means of increasing students' motivation, creating conditions for continuous self-education of students, forming their language and «information competence».

METHODOLOGY

An important factor that ensures the effectiveness of the result when using ICT in teaching Russian as a foreign language is the development and purposeful use of a set of e-learning materials for teachers, which should take into account the specifics of their professional information and communication competence.

With the help of educational materials with the use of information and telecommunications technologies, the teacher can prepare: 1) project, creative, personal-oriented tasks using authentic Internet resources; 2) various types of presentations; 3) interactive tasks for students; 4) lesson plans using educational and authentic electronic materials. Exercises with the use of ICT allow students to develop mechanisms of comprehension and auditory memory, which ensures the acquisition of phonetic, lexical and grammatical baggage, which contributes to the increase in the volume of operational memory of students.

At the Department of foreign languages of the Military technical Institute of the National Guard of the Republic of Uzbekistan, the practice of using ICT in working with cadets is quite common. At the moment, teachers of the Department have developed and used in the educational process more than five textbooks. Using this technology, teachers of the Department solve the following tasks:

- Distribution of electronic versions of educational and methodical manuals;
- Distribution of additional material used in classes or when preparing homework;
- performing test and assessment work;
- performing tasks for memorizing and practicing various language skills;
- performing tasks for memorizing, working out and checking the studied vocabulary.

Teachers of the Military technical Institute use the following technology: given the level of proficiency of educational groups – language portfolio, the principle of concentric, division of education for the academic blocks and use of demonstrative forms and work with the following types of exercises:

- 1) presentative;



- 2) Imitative;
- 3) Substitution.

Video tutorials as one of the most popular forms of training allow us to present all the training material for both speech development, strengthening grammatical skills, and for the formation of cross-cultural competence among National Guard cadets.

It seems appropriate to differentiate video lessons into:

- 1) Forming linguistic and cultural competence (the informative content of the lesson and the proposed exercises are aimed at obtaining linguistic and cultural knowledge;
- 2) Lexical training aimed at enriching and fixing the vocabulary;
- 3) Re-stimulating (formation of skills for building lexically correct phrases, expressions and discussions)
- 4) Speech training (assimilation of speech forms "description", "message", etc.).

Consistent use of video lessons allows you to develop speech skills efficiently and in a short time.

In the process of teaching Russian as a foreign language, we can also use the following methodological techniques:

- 1) Listening to authentic foreign-language audio and video materials from simple replicas to dialogues;
- 2) Special audio-visual programs that can control speech samples demonstrating in Russian;
- 3) Verbal interaction in the framework of the "teacher – trainee" model»;
- 4) Audio visualization of images;
- 5) Use of thematic classes;
- 6) Creating problem situations in the learning process and setting specific tasks;
- 7) Use of exercises to develop the pace of speech of students;
- 8) Use of role-playing games to consolidate the skills acquired;
- 9) Use of exercises for the development of regional knowledge;
- 10) use of exercises to study the vocabulary and dialectics of native speakers of the studied language (features of speech behavior);
- 11) Use of texts to test theoretical knowledge and practical skills of language acquisition as a means of communication.

The main goal of ICT training is to improve the level of Russian language proficiency and to develop and improve the socio-cultural competence of cadets. According to the researchers, multimedia and network technologies can be used with the involvement of language material in this type of teaching. There is an application in the educational process of special training programs, the main content of which are cognitive and communicative exercises, question and answer dialogues, dialogues with a

freely constructed and selective response, exercises to fill in gaps, for self-control of vocabulary, etc.

CONCLUSION

Our experience with cadets allows us to say that in most cases they have a fairly high level of motivation, experience of independent work, including research and of course experience in using information resources for training purposes. Students' knowledge, skills and abilities allow to successfully involving them in the use of electronic resources when learning Russian.

The analysis highlights the following technological features of information and communication technologies:

- Interactivity
- Multimedia (use of materials in different formats: text, audio, photo, video)
- Hypertext structure (creation of hyperlinks on active links), which opened up wide opportunities for the use of ICT for the formation and development of foreign language communicative competence.

Thus, teaching Russian language using ICT is the most effective form designed for the formation and development of internal speech, without which it is impossible to have an active external oral speech, or foreign language thinking, or a full-fledged mastery of Russian speech in writing.

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INVENTORY MANAGEMENT AND PROFITABILITY OF LISTED HOSPITALITY COMPANIES IN NIGERIA

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ABSTRACT

This study examined inventory management and profitability of listed hospitality companies in Nigeria. The study adopted longitudinal research designed based on analytical review of the financial statements of the sampled hospitality companies listed on the Nigerian Stock Exchange. The technique of estimation used in this study is panel data. The analysed data spanned a ten-year period of 2008-2017. Statistical analyses of the secondary data were done using descriptive statistics while the hypotheses were tested using Pearson's product moment correlation coefficient and multiple regression analysis of ordinary least square technique (OLS) at 0.05 level of significance. The study found among others that there is a relationship between inventory management and profitability of listed hospitality companies in Nigeria; that there is a significant relationship between inventory management and earnings per share (EPS); and that there is a significant positive effect of inventory management on Dividend per Share (DPS). The study concluded that inventory management has influence on the profitability of listed hospitality companies in Nigeria. The study recommended that Companies within the hospitality industry should intensify effort in managing their inventory in order to experience more positive impact on profitability thereby leading to increase in Earnings per share (EPS) and Dividend per share (DPS).

KEYWORDS: *Inventory Management, Profitability, Listed, Hospitality Companies*

INTRODUCTION

In the present day Nigeria, there is more attention on job creation particularly in the private sector (Emefiele, 2017). This has brought the hospitality industry into the lime light. Hotels, tourist centres and rest houses are a major feature of the hospitality industry in Nigeria. It therefore becomes imperative to study how inventory is managed in this type of organisation.

The viability of an organisation can be enhanced through an effective and efficient management of material resource otherwise known as inventory. Inventory implies physical stock of goods, which are held in business for smooth and efficient operations at the minimum possible cost (Tom-Jose, Akhilesh & Sijo, 2013). Inventory can also be referred to, as the value or

quantity of raw materials, supplies, work in progress (WIP) and finished stock that are kept or stored for use as need arises (Lysons & Gillingham, 2003). Stock otherwise known as inventory constitutes a substantial proportion of the current asset group. It represents investments made for obtaining a return (Duru, Oleka & Okpe, 2014). This may explain why decision makers in organisations irrespective of their size and structure pay serious attention to management of their inventory. Inventory is considered an important decision area by managers and business owners because it often constitutes a significant portion of total current assets (Moore, Lee & Taylor, 2003; Sawaya & Giaouque, 2006).

The importance of inventory management in present day business cannot be over emphasised



because of the direct relation it bears on efficiency and profit (Coyle, Bardi & Langley, 2003; Koin, Newell, & Mwangangi, 2014). Inventory management allows business entities to maintain stock at the possible least cost level that is consistent with organisational objectives (Kwadwo, 2016). Apart from cost minimization, adequate inventory management prevents interruption of business due to delay in acquiring required items of inventory (Eneje, Nweze & Udeh, 2012). Profitability refers to the ability of an entity to increase its net worth through profitable operations. The profitability shows the ability of a firm to generate earnings from the use of its assets for a certain period of time (Farah & Nina, 2016). Profit is the difference between revenue received from sales and total costs which includes material costs, labour, and overhead (Stierwald, 2010). The goal of most organisations is profit maximisation (Niresh & Velnampy, 2014). Panigrahi (2013) opined that inadequate inventory tends to have a potential adverse effect on the smooth running of the business, while excess inventory involves extra cost, which may reduce the firm's profits.

Inventory management policies and procedures are normally designed to ensure that a firm or an organization uses its inventory in a way that it is able to maximize its profit from the least inventory investment amount without encroaching or affecting customer's levels of satisfaction (Anene, 2014). Inventory constitutes a large portion of total investment, it is vital that a firm adapts a good inventory management system to enable firm's growth and enhancement of firm's profitability (Anichebe & Agu, 2013).

STATEMENT OF THE PROBLEM

Ideally, organisations are expected to properly manage their inventories in order to witness efficiency and effectiveness in operations which lead to an increase in profit. Many organisations oftentimes claim to manage their inventories effectively but despite their claims, a lot of problems still persist which include; stock out, decline in productivity and profitability, customer dissatisfaction (Agu, Obi-Anike & Eke, 2016). As noted by Panigrahi (2013), inadequate inventory tends to have a potential adverse effect on the smooth running of the business, while excess inventory involves extra cost, which may reduce the firm's profits.

Investment in inventories constitutes the most significant part of current assets in most business undertakings (Tom-Jose *et al.*, 2013). This will naturally require a huge volume of resource commitment in order to guarantee smooth flow of production/operations as well as meeting the demand of

consumers. Therefore, there is a need to study the relationship between inventory management and profitability in an organisation. Profitability will enhance good earnings per share (EPS) as well as a better dividend per share (EPS) which are of most interest to the shareholders.

Previous studies on inventory management focused mostly on manufacturing industries like Cement industry and breweries. Researchers such as Nwosu (2014), Kariuki (2013) and Panigrahi (2013) examined various problems associated with inventory management such as material procurement, storage; stock-out and unpredictable change in prices and conversion period in breweries and cement industry respectively. There was a neglect of the hospitality industry; also, the cost of the components of inventory such as (Foods and beverages, Maintenance supplies, Operating supplies, and General stores) was not considered, hence, the rationale for this study.

Considering the link that profitability has with Earnings per Share (EPS) and Dividend per Share (DPS) as indicators of efficient and effective management of any organization, this necessitated the use of these two proxies to measure the dependent variables in this study contrary to what was obtainable in the similar studies carried out by previous researchers. This study therefore attempts to fill this gap by examining inventory management and profitability of listed hospitality companies in Nigeria.

RESEARCH QUESTIONS

The study addressed the following questions:

- i. What is the relationship between inventory management and Earnings Per Share (EPS) of listed hospitality companies in Nigeria?
- ii. What is the effect of inventory management on Dividend Per Share (DPS) of listed hospitality companies in Nigeria?

OBJECTIVES OF THE STUDY

The broad objective of this study is to examine inventory management and profitability of listed hospitality companies in Nigeria. The specific objectives of the study are to:

- i. examine the relationship between inventory management (food and beverages cost, maintenance supplies cost, operating supplies cost, and general stores cost) and Earnings Per Share (EPS) of listed hospitality companies in Nigeria
- ii. analyse the effect of inventory management (food and beverages cost, maintenance supplies cost, operating supplies cost, and general stores cost) on



Dividend Per Share (DPS) of listed hospitality companies in Nigeria

RESEARCH HYPOTHESES

The following null hypotheses were formulated for the study;

- Ho₁ There is no significant relationship between inventory management and Earnings Per Share (EPS) of listed hospitality companies in Nigeria
- Ho₂ There is no significant effect of inventory management on Dividend Per Share (DPS) of listed hospitality companies in Nigeria

SIGNIFICANCE OF THE STUDY

This study is significant because it will stimulate awareness of the need for efficient inventory management in order to maximise its benefits on profitability. The study contributed to existing literature in the area of inventory management and profitability in hospitality industry in Nigeria.

Also, students and researchers will find the methodological approach of this study useful in carrying out similar studies in future. That is, the study will be a reference point for related studies which students and other researchers may embark upon.

SCOPE AND LIMITATION OF THE STUDY

This study covers the period of 10 years from 2008-2017 and cut across five listed companies in hospitality industry from the Nigerian Stock Exchange (NSE). The choice of hospitality industry was made because most studies on inventory management were rarely carried out in this type of industry. The five listed hospitality companies are: Capital Hotel Plc, Ikeja Hotel Plc, Transcorp Hilton Plc, Tantalizers Plc and Tourist Company Nig. Plc. The limitation of this study is that it is restricted to listed companies in the hospitality industry in Nigeria.

LITERATURE REVIEW

Inventory is considered to be the central theme in managing materials. Tom-Jose et al. (2013) defines inventory as physical stock of goods which are kept in hands for smooth and efficient running of future affairs of an organization at a minimum cost. Similarly, Manthan, Santosh, Rupesh, Mahendra, Pankaj and Dinesh (2016) define inventory as the goods or resources used by firms for the purpose of production and sale. It also includes the matters, which are used as helpful materials to ease production. In the generally understood term; inventory means a physical stock of goods kept in store to meet the anticipated demand.

However, from materials management perspective, an apt definition of inventory is a usable but idle resource having some economic value. This brings to the fore a paradox in the concept of inventory perceived as a necessary evil. It is necessary to have physical stock in the system to take care of the anticipated demand because non availability of materials when needed will lead to delays in production or projects or services delivery.

Lysons and Gillingham (2003) also defines inventory as the value or quantity of raw materials, supplies, work in progress (WIP) and finished goods that are kept or stored for use as need arises. Raw materials are commodities such as steel and lumber that goes into the final product. Supplies include items such as Maintenance, Repair and Operating (MRO) inventory that do not go into the final product. Work in progress is materials that have been partly fabricated but are not yet completed. Finished goods are completed items ready for shipment (Kothari, 1992). Smriti (2018) opined that Inventory includes Raw materials, Work in progress, Finished goods and Spares.

Inventory management refers to keeping or maintaining the firm's stocks at a level that a firm will only incur the least cost that is consistent with other management's set objectives or targets (Kwadwo, 2016). Inventory management is about ensuring that all input of production that is available firm are maintained at a level where production is not interrupted as well as ensuring that operational cost is kept at a minimal level without affecting operation efficiency (Eneje, Nweze & Udeh, 2012). Inventory management entails planning, organizing, directing and controlling. All these coordinated efforts are meant to ensure achievement of efficiency in all operations of the firm. Such operations may include procurement, stocking and transportation (Akindipe, 2014). Mismanagement of Inventories may lead to significant financial problems for a firm (Muhayimana, 2015).

The goal of most organizations is profit maximization (Niresh & Velnampy, 2014). Profitability refers to the ability of an entity to increase its net worth through profitable operations. The profitability shows the ability of a firm to generate earnings from the use of its assets for a certain period of time (Farah & Nina, 2016). Profitability involves the capacity to make benefits from all the business operations of an organization, firm or company (Muya & Gathogo, 2016). Profit usually acts as the entrepreneur's reward for his/her investment. As a matter of fact, profit is the main motivator of an entrepreneur for doing business. Profit is also used as an index for performance



measuring of a business (Ogbadu, 2009). Profit is the difference between revenue received from sales and total costs which includes material costs, labour and so on (Stierwald, 2010).

EMPIRICAL REVIEW

Chen, Frank and Wu (2005) investigated inventories of U.S. manufacturing companies in the last two decades of 20th century. They found that firms with high inventory have poor long-term stock returns while firms with slightly lower than average inventory have good stock returns.

Sahari, Tinggi and Kadri (2012) empirically analyzed the relationship between inventory management and firm performance along with capital intensity. For the purpose they took a sample of 82 construction firms in Malaysia for the period 2006–2010. Using the regression and correlation analysis methods, they deduced that inventory management is positively correlated with firm performance. In addition, the results indicate that there is a positive link between inventory management and capital intensity.

Eneje, Nweze, and Udeh (2012) investigated the effects of raw materials inventory management on the profitability of brewery firms in Nigeria using a cross sectional data from 1989 to 2008 which was gathered for the analysis from the annual reports of the sampled brewery firms. The authors employed ordinary least squares as estimation technique. The study revealed that the local variable raw materials inventory management designed to capture the effect of efficient management of raw material inventory by a company on its profitability is significantly strong and positively influenced the profitability of the brewery firms in Nigeria. They concluded that efficient management of raw material inventory is a major factor to be contained with by Nigerian brewers in enhancing or boosting their profitability.

Clearly from the reviewed literatures, most studies of this nature focused on manufacturing sector such as Cement industry, food and beverages industry and construction firms not hospitality industry. Thus, this study peruses on various inventory management techniques both traditional and modern used in the hospitality industry. Furthermore, this study is unique because it examined inventory management from the cost perspective by using proxies such as food and

beverages, maintenance supplies, operating supplies and general stores and profit using proxies such as Earnings Per Share (EPS) and Dividend Per Share (DPS) which were not mostly used by some of the previous researchers.

METHODOLOGY

This study employed longitudinal and quantitative research design. The population of this study comprises the total numbers of listed hospitality companies on the Nigerian Stock Exchange as at 2019 were five (5) which are: Capital Hotel Plc, Ikeja Hotel Plc, Transcorp Hilton Plc, Tantalizers Plc and Tourist Company Nigeria. Due to the few numbers of listed hospitality companies in Nigeria, the study considered the entire population as appropriate sample size for the study which are the Five (5) listed hospitality companies stated as the number of the population. Hence, the study employed census sampling technique. This study employed secondary sources of data. The secondary data used for this research were obtained from the Nigerian Stock Exchange and annual financial statement of the listed hospitality companies for ten (10) years from 2008-2017. This research work adopted both descriptive and inferential statistics to achieve the stated objectives. Data were presented using table, while descriptive statistics used include, mean and standard deviation among others. Two (2) Hypotheses were tested using Pearson’s product moment correlation coefficient and multiple regression analysis of ordinary least square technique (OLS) using statistical package of social science (SPSS) because of its appropriateness for researches in social and management sciences.

Model specification

The model for this study established the relationship between dependent and independent as well as the effect of moderating variable on them. Proxies for dependent, independent and moderating variable are stated respectively; Earning per share (EPS) and Dividend per Share (DPS); Food and Beverages(FB), Maintenance Supplies (MS), Operating Supplies(OS) and General Stores(GS); Employee Cost(EC).

This study modified the model used by Edwin and Florence (2016).

$$Y = \beta_0 + \beta_1(\text{FB}) + \beta_2(\text{MS}) + \beta_3(\text{OS}) + \beta_4(\text{GS}) + \beta_5(\text{EC}) + \mu_1 \dots$$

(A) Model to test the relationship between inventory management and Earnings per share (EPS)

$$\text{EPS} = f(\text{FB}, \text{MS}, \text{OS}, \text{GS}, \text{EC}) \dots\dots\dots$$

Mathematical Econometric form of the model is presented below as:



$$EPS_{it} = \beta_0 + \beta_1 (FB)_{it} + \beta_2 (MS)_{it} + \beta_3 (OS)_{it} + \beta_4 (GS)_{it} + \beta_5 (EC)_{it} + \mu_{1it} \dots (i)$$

(B) Model to test the significant positive effect of inventory management on Dividend per Share (DPS)

$$DPS = f (FB, MS, OS, GS, EC) \dots \dots \dots$$

$$DPS_{it} = \beta_0 + \beta_1 (FB)_{it} + \beta_2 (MS)_{it} + \beta_3 (OS)_{it} + \beta_4 (GS)_{it} + \beta_5 (EC)_{it} + \mu_{1it} \dots (ii)$$

Where:

- EPS= Earnings per shares
- DPS= Dividend per share
- FB= Food and beverages
- MS= Maintenance supplies
- OS= Operating supplies
- GS=General stores
- EC=Employee cost
- β_0 = Intercept or Constant
- β_1 = Regression Coefficient
- μ_1 = Error term
- i = Cross sectional variables from 1, 2, 3, 4, 5
- t = Time series variable from 1, 2, 3, 4, 5

A Priori Expectation

A prior expectation is presented in mathematical forms below:

$$\frac{dEPS/DPS}{dFB} \neq 0$$

Connotes that foods and beverages cost is expected to exert either positive or negative impact on Earnings Per Share, Dividends Per Share and Return on Asset of listed hospitality companies in Nigeria.

$$\frac{dEPS/DPS}{dMS} \neq 0$$

Connotes that maintenance supplies cost is expected to exert either positive or negative impact on Earnings Per Share, Dividends Per Share and Return on Asset of listed hospitality companies in Nigeria.

$$\frac{dEPS/DPS}{dOS} \neq 0$$

Connotes that office supplies cost is expected to exert either positive or negative impact on Earnings Per Share, Dividends Per Share and Return on Asset of listed hospitality companies in Nigeria.

$$\frac{dEPS/DPS}{dGS} \neq 0$$

Connotes that general supplies cost is expected to exert either positive or negative impact on Earnings Per Share, Dividends Per Share and Return on Asset of listed hospitality companies in Nigeria.

$$\frac{dEPS/DPS}{dEC} \neq 0$$

Connotes that employee cost is expected to exert either positive or negative impact on Earnings Per Share, Dividends Per Share and Return on Asset of listed hospitality companies in Nigeria.



RESULTS AND DISCUSSION

The test results are presented and interpreted in this section. The descriptive statistics are presented in table 1.

Table 1: Descriptive Statistics

Variable	LOGEPS	LOGDPS	LOGOS	LOGMS	LOGGS	LOGFB	LOGEC
Mean	3.0106	1.8852	17.531	16.906	17.885	18.071	20.584
Median	3.3672	1.9459	17.509	17.447	17.462	17.986	20.646
Maximum	4.4206	3.7099	19.157	18.975	20.252	19.750	22.353
Minimum	0.6931	-2.9957	15.325	14.002	15.650	16.787	17.241
Std. Dev.	1.1725	1.6938	1.0671	1.4778	1.2440	0.6537	0.9474
Skewness	-0.5411	-1.3911	-0.2819	-0.3036	0.5518	0.2624	-1.0492
Kurtosis	2.0433	5.1026	1.7117	1.6248	2.1584	2.8341	5.0089
Jarque-Bera	2.8686	8.6153	4.1199	4.5197	3.5313	0.6188	17.581
Probability	0.2382	0.0134	0.1274	0.1043	0.1710	0.7338	0.0001
Sum	99.351	32.049	876.59	811.49	786.95	885.49	1029.2
Sum Sq. Dev.	43.996	45.908	55.802	102.64	66.554	20.512	43.983
Observations	33	17	50	48	44	49	50

Source: Author's Computation (2019)

Result of Regression Analysis

The regression estimates are presented in the tables below:

Table 2: Regression Result for Model I
 Dependent Variable: LOGEPS

VARIABLES	COEF.	STD. ERR.	Z	PROB.
LOGFB	-0.3456771	0.5651434	1.68	0.541
LOGMS	0.5052816	0.1761644	2.87	0.004
LOGOS	-0.2938237	0.2516755	0.243	-0.7870986
LOGGS	0.6759424	0.2513479	0.007	0.1833096
LOGEC	0.2304639	0.25978	0.375	-0.2786955
CONSTANT	-11.17297	9.55872	0.242	-29.90772
R-SQUARED	0.4662			
Wald chi ² (5)	21.83	corr(u _i , X _b) = 0		Prob > chi ² =0.0006
HAUSMAN TEST (CHI2)	2.01			Prob>chi ² = 0.8483

Source: Author's Computation (2019)

Table 3: Autocorrelation Result for Model I

PESARAN'S TEST OF CROSS SECTIONAL INDEPENDENCE	-0.307
PROBABILITY VALUE	0.7587
AVERAGE ABSOLUTE VALUE OF THE OFF-DIAGONAL ELEMENTS	0.338

Source: Author's Computation (2019)



Table 4: Regression Result for Model II
Dependent Variable: LOGDPS

VARIABLES	COEF.	STD. ERR.	Z	PROB.
LOGFB	3.113917	1.766159	1.76	0.078
LOGMS	0.1082306	0.3657854	0.30	0.767
LOGOS	1.706233	0.7042555	2.42	0.015
LOGGS	-1.099297	0.8084284	-1.36	0.174
LOGEC	-0.8762315	0.665135	-1.32	0.188
CONSTANT	-48.37394	21.20875	-2.28	0.023
R-SQUARED (OVERALL)	0.5870			
Wald chi ² (5)	14.21	corr(u _i , X _b) = 0		Prob > chi ² = 0.0143
HAUSMAN TEST	0.20			0.9991

Source: Author's Computation (2019)

Table 5: Autocorrelation Result for Model II

PESARAN'S TEST OF CROSS SECTIONAL INDEPENDENCE	1.718
PROBABILITY VALUE	0.0859
AVERAGE ABSOLUTE VALUE OF THE OFF-DIAGONAL ELEMENTS	0.232

Source: Author's Computation (2018)

DISCUSSION OF FINDINGS

From the regression result presented above, the following discoveries were made:

The overall R-squared result showed that approximately 47% variation in LOGEPS is being explained by LOGFB, LOGMS, LOGOS, LOGGS and LOGEC. The Wald statistics with value of 21.83 is significant and showed that the whole model is okay. Hausman test result which is 2.01 and a probability value of 0.8483 implies that the random effect model is the model appropriate for the study. In a more technical term, this simply shows that difference in coefficients is systematic. Model one regression result showed that only MS has significant positive relationship with EPS which therefore showed that the first null hypothesis of no significant relationship between inventory management and earnings per share (EPS) of listed hospitality companies in Nigeria is rejected. This study therefore concludes that there is significant relationship between inventory management and earnings per share (EPS) of listed hospitality companies in Nigeria.

The overall R-squared result in model two showed that 58% variation in LOGDPS is being explained by LOGFB, LOGMS, LOGOS, LOGGS and LOGEC. The wald stat with value of 14.21 is significant and showed that the whole model is okay. Hausman test result which is 0.20 and a probability value of 0.9991 implies that the random effect model is the model appropriate for the study. In a more technical

term, this simply shows that difference in coefficients is systematic. Model two regression result showed that OS has significant positive relationship with DPS which therefore showed that the second null hypothesis of no significant positive effect of inventory management on Dividend Per Share (DPS) of listed hospitality companies in Nigeria is rejected. Therefore, the study found that there is a relationship between inventory management and profitability of listed hospitality companies in Nigeria.

CONCLUSION AND RECOMMENDATIONS

The study examined inventory management and profitability of listed hospitality companies in Nigeria by using data mined from their published financial statement on the Nigeria stock Exchange (NSE) from 2008-2017. Inventory management which is the independent variable was measured using proxies such as Foods and beverages (FB), Maintenance supplies (MB), Operating supplies (OS) and General stores (GS) while, and profitability which is the dependent variable was measured using proxies such as Earnings per share (EPS) and Dividends per share (DPS). Based on the findings of this study, the study concluded that inventory management has influence on the profitability of listed hospitality companies in Nigeria. More so, the study concluded that there is a significant relationship between inventory management and earnings per share



(EPS) of listed hospitality companies in Nigeria and a significant positive effect of inventory management on Dividend Per Share (DPS) of listed hospitality companies in Nigeria.

In the light of the foregoing findings and conclusions, the following recommendations are suggested:

- i. Companies within the hospitality industry should intensify more effort in managing their inventory in order to experience more positive impact on profitability thereby leading to increase in Earnings per share (EPS) and Dividend per share (DPS).
- ii. Companies within the hospitality industry should ensure and promote healthy and satisfactory relationship between inventory management and profitability from time to time.

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COMPATIBILITY IN THE WISDOM OF ALISHER NAVOI

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ANNOTATION

This article discusses the educational and ethical views of Alisher Navoi, its ethical advice to people and its benefits.

KEY WORDS: Navoi, morals, honesty, aphorisms, education, narration

Annotatsiya: *Ushbu maqolada Alisher Navoiyning tarbiyaviy va axloqiy qarashlari, insonlarga axloqiy tavsiyalar va uning foydali jihatlari haqida fikr yuritiladi.*

Kalit so'zlar: Navoiy, axloq, halollik, aforizmlar, ta'lim, hikoyalar

Аннотация: В этой статье обсуждаются образовательные и этические взгляды Алишера Навои, его этические советы людям и его преимущества.

Ключевые слова: Навои, этика, честность, афоризмы, образование, повествование

DISCUSSION

Alisher Navoi is a great figure who is the epitome of the consciousness and thinking of our people, the epicenter of the art culture, the incomparable representative of the national literature, the pride of our nation and the famous artist. In fact, there is no one in the world who speaks Turkish and Persian who does not know Navoi, does not love Navoi, or does not believe in Navoi. "If we call this great saint a saint, he is the saint of the saints, the thinker, the thinker of the thinkers, the poet, the sultan of the poets," I. Karimov.¹

The deeper the literature of the oriental peoples is, the clearer the literary relations between these peoples are. The study of literary connections provides a more complete picture of the creative power and influence of great artists and literary schools. In this respect, it is important to study the heritage of Navoi. As Navoi, the founder of a great literary school, has had a strong influence on the literature of several nations, such as mentor Nizami, it is also a great field to study his works. Orientalists have examined the heritage of Navoi to study the literature of the Uzbek people; studied in order to determine the Because Navoi is known as a great patron of the Tajik, Iranian, and Indian cultures, it has a strong influence on the literature of the Azerbaijani, Turkmen, Kazakh, Tatar, Turkish and Karakalpak peoples.²

Navoi appreciated and sponsored the education. The poet considers the spiritual maturity of a person, first and foremost, of his knowledge and wisdom. Science is not in itself, but it is believed that knowledge can only be acquired by passion and desire. Alisher has many meanings in the wisdom of Navoi. In his stories, emotions, such as knowledge, kindness, and humanity, play a central role.

Whoever worships the scholars

It seems that he was worshiping the prophet.

The poet values and honors the scholars. Including:

It is wise to learn a little,

There is a river that drops in one row

Navoi writes that in order to be educated, a person needs to learn a little, to accumulate knowledge, and to have some skills, which is like dropping water into a river.

And whosoever shall teach thee a letter hardly for the Way,

You cannot repay him for a hundred gold pieces.

These sentences refer to the first teacher. The first teacher helps his pupil to get an education, which gives him the right path. In these two verses, Navoi explains that he cannot pay the teacher's services with hundreds of treasures. It is worth noting that Navoi had a great respect for his teachers and knew what each of them said. In particular, the mentor of Abdurahman Jami:



" If you are not a teacher in the world,
Life has never been so beautiful. "He understood the
meaning of the phrase.

And he describes his teachers: "If a disciple is a
Shaykh al-Islam or a judge.
Make sure that the teacher agrees and is pleased with
God. "

Alisher Navoi appraises first of all his life. The
appearance of humanity is piety and piety. In the
mind of a heart-wrenching person, only those who
can speak the truth in any case, and who act in truth,
deserve the name of a man. On the contrary, change
in circumstances, preserving one's identity and being
afraid to speak the truth is a sign of unbelief. Being
part of the bad and doing good is a bad example.

Jalaluddin Rumi said about this: " He said he
was deprived of his morals and he lost the grace of
Allah.

Clearly, the appeal of these two great men is
not accidental. Their exhortation is that the wisdom of
teaching is so important to our lives.

Navoi's rebuke is based primarily on his own
observations. Pure beliefs reflect on the demands of
public opinion. Summary opinions from the great
experience of great human thinking, "Walk close to
good, stay away from bad" 'If you tell me who you
are, I'll tell you who you are'.

The notion of a good person or of goodness
has a broader meaning in the mind of a good-hearted
person, and it combines beautiful qualities that adorn
a person, such as faith and belief, habits and
imagination. The criterion of humanity is to live not
only for themselves but also for the benefit of others.
For example, the next sermon of the preacher is about
good:

"Baxlning andoqki, butun topqoni zaxira bo'lg'ay,
tong va qabri ham bu kungi maoshi uyidek tiyra
bo'lg'ay.Zuhdu taqvo barcha vaqtda dilpisanddur,
ulug'lar nazarida arjumandroq . Yaxshiliq va
yomonliqni kim qildikim , jazo ko'rmadi. Saloh va
fasod tuxmin kim ekdikim, o'rmadi"

The poet further clarifies and contributes to the
following byte of his thoughts on human errors and
attributes:

Yaxshiliq tuxmin sochg'ilkim budur dehqong'a so'z,
Har nekim ekdig bugun borin hamon tut oning ko'z.

Alisher Navoi believes that striving for
learning is one of the most important qualities that
will help to achieve human perfection. They describe
science as a factor that saves a person, a nation from
ignorance and ignorance. The ideas put forward in
their works encourage people to become more
educated and enlightened. The thinker acknowledges
that it is the human duty of everyone to learn science.
After all, the aim of learning is to contribute to the

prosperity and wellbeing of the people and the
prosperity of the country. Educated and wise people
always believe in the best interests of their people and
the prosperity of their country.

All works by Alisher Navoi are an important
treasure for the upbringing of young people. He was
able to use every word effectively in his works. Each
of his wisdom is a lesson for us. The life and legacy
of Alisher Navoi is a good example for us in
nurturing universal human qualities. The great poet
contributed to the upbringing of a harmoniously
developed generation, and his ideas about universal
qualities are also relevant to our day.

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INTERNAL AND EXTERNAL FACTORS OF DIGITAL ECONOMY DEVELOPMENT IN THE COUNTRY

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ANNOTATION

In the article, digital economics in several developed countries analysis of infrastructure development and the results obtained a number of problems in the development of digital economy in our country and their possible solutions are considered in detail. The globalization of digital technology in various sectors of the economy of the republic mechanisms for creating important platforms have also been proposed.

KEY WORDS: *Digital economy, digital money, digital platforms, ecosystem, 4.0 Industry, 3D-printers, cloud technologies.*

В данной статье проанализированы состояние и перспективы развития цифровой экономики в различных развитых странах мира и на основе анализа недостатков и преимуществ принятых стратегий предлагаются варианты использования современных средств цифровой экономики в различных отраслях и сферах национальной экономики Республики Узбекистан. Также предложены механизмы создания цифровых платформ глобального значения в отраслях народного хозяйства.

Ключевые слова: Цифровая экономика, цифровые деньги, цифровые платформы, экосистема, индустрия 4.0, 3D-принтеры, облачные технологии.

INTRODUCTION

In the modern world, the digital economy and its many associated with it effective technologies are rapidly entering our lives. That's it to further accelerate the development of the state and society. The leadership of our republic made several important decisions. "Modernization of all sectors of the economy based on digital technologies to develop a national concept of digital economy it is necessary. On this basis, we will implement the program "Digital Uzbekistan - 2030" is required. The digital economy will increase GDP by at least 30%, and reduce corruption. Reputable international organizations. The analysis carried out also confirms this. Two months to the Government and developing a roadmap for the transition to a digital economy in a timely manner will be delivered. Particular attention should be paid to information security necessary "[1,2].

Therefore, the issues of how to develop it are society and people standing in front of him.

LITERATURE REVIEW

First and foremost, the digital economy is inextricably linked. It is an integral part of the production and management processes interconnect element (interpersonal, machine, cloud, data) inter-center) information using digital technology is an exchange [3]. Digital economics is all about digital data is a key element in the socio-economic production and The gradual transition to such an economic system is global improving the competitiveness of the population and improving the quality of life of citizens, creates jobs, promotes rapid economic growth and national It also provides independence [3]. Developing this digital economy



The program should serve to achieve the following goals [4]:

- Creation of the digital economy ecosystem in the Republic of Uzbekistan;
- Create Institutions and infrastructure of the digital economy of the country;
- Information Information society covering all sectors of the Republic to undertake all the necessary measures to organize it;
- Republic of Uzbekistan on global and global markets increase of competitiveness.

Now open data in global information systems and the case of several developed countries using literature and the main indicators of the digital economy infrastructure Here are some of its features: [5]

- Capitalization of digital e-business companies it depends on the number of users and their increasing number [6]. This results in a large sales revenue for companies. For example, YouTube receives 100 million requests a day and Facebook has more than 2 billion participants. Covering this very large group of users will not only increase capitalization, but will also generate a lot of money in advertising. Facebook earned more than \$ 26.9 billion from advertising. At the end of 2018, Facebook's annual revenue was \$ 27.6 billion, with a net profit of \$ 10.2 billion [3]. Thus, the digital economy is a new economic environment that opens up new and great opportunities for business.
- Under the conditions of the digital economy, the structure and character of the competitive struggle will completely change [4]. It can be argued that business models are also changing through the new technologies of digital economy and e-commerce. For example, the companies that operate on the passenger market (GettTaxi, Yandex.Taxi) have made a lot of changes to the transport companies' operations and made them closer to consumers. Food delivery companies have also brought vendors closer to consumers and have had great success in the competitive market. As a result of this Traditional off-line companies have to transform their businesses or go online. This encourages entrepreneurs to set up their own businesses on the Internet.
- The digital economy has made it possible to search for new ideas for business and to interact with customers based on rapid business analytics. This has allowed us to react more effectively to the innovative expectations of potential customers. As a

result of this work, free services such as Google Analytics and Yandex were created [5].

- The digital economy is also characterized by a significant reduction in the lifecycle of innovation [6]. According to some scientists and experts, new transport systems are also expected to emerge in transportation. For example, magnetic-levitation means, vacuum transport Examples of such tools are Hyperloop systems, etc.
- Generation of innovative ideas using collective knowledge (mass collaboration, crowds, production of products and services, and financing of new innovative projects [5]. Opportunities to share material resources (Sharing)
- Economy) has changed the attitude towards the possession of material wealth in many societies. For example, many young people in developed countries have little interest in acquiring or owning their own property [3]. Because of them, more important is the freedom of life, the freedom of spiritual activity and the sensation of travel, travel to countries around the world, and environmental tourism.
- Increasing the importance of social networks in making consumers think about products or services [5]. It is no secret that social networking and communication have now become an integral part of all young people's lives.

Yangi The emergence of new types of intellectual property licenses (Public Licenses) [6]. Most people own the product or service they have created. For example, Creative Common (CC) licenses that allow people to take ownership of intellectual property, and the General Public License (GPL, GNU), which includes a collective license for open source software;

Transform Transformation of business models [3]. The digital economy is embodied in new business models and creates a chain reaction that is unique to other market participants. The most popular are aspirations for customized products and services, the desire for personalized services, the involvement of e-commerce tools in the company's development strategy, as well as Freemium-model, Tree-to-play, Print-on-demand, The use of digital business architectures such as Full-Crowdsourcing, Donation [3]. Organizing direct sales through the internet, manufacturing companies, using electronic storefronts, creating virtual and inter-industry virtual exchanges, free warehousing (drop shipping) and on-demand resources. satisfaction (on-demand).

Currently, several developed countries in the world (USA, China, Japan, European Union,



Russia, etc.) are taking an active step towards digitizing most sectors of the economy, taking into account changes in the global economy. However, given this information, we must note that any. There is no complete philosophical understanding of what the digital economy itself is, including the leading countries, and what the consequences may be in the future. Clearly, digital economics means that many countries understand not just new forms of economic relations and governance, but also the new electronic digital forms of communication and payments with consumers. It seems that most countries do not consciously create the digital economy, but only deal with the process of digitization of existing economic relations. Some leading countries in the digitalization process have chosen controversial approaches [5]. For example,

The US has a market orientation and China has a planned economy. Other countries follow certain intermediate options. It is worth noting that in the digitalization of the economy, both in China and in the context of the US program, we see a new phase of globalization. Globalization is profitable for the US and China as the two most powerful economies in the world, as the economically strong third is always in its rightful place. feature. If we look at the US in this area, we can see that the process of creating a digital economy can be divided into four main blocks:

1. Creating the necessary conditions for the development of a digital economy (ie creating an appropriate legal and regulatory framework);
2. The economy that is most prepared for the digital transformation the emergence and launch of digital platforms of digital economy in the sub-sectors;
3. Fighting competition between the digital economy platforms and their slow integration;
4. Introduction of the most promising solutions in the digital economy to the whole economy.

It would be expedient to choose the same strategy for the development of digital economy in our country which has been tested in the USA and China.

SUGGESTIONS AND CONCLUSIONS

The development of the digital economy is of strategic importance to the Republic of Uzbekistan as well as to its global competitiveness is one of the issues of ownership. This is a digital economy to our state creation of conditions for its development, orientation to the most urgent areas and it is necessary to stimulate this process to the maximum extent possible. Another important aspect of our economy is that GDP is basic a large proportion of state-owned corporations (or state-owned companies) are involved companies). In these circumstances, the professional ministries or the creation of an industrial digital

platform under the auspices of state-owned corporations is the smartest step. Such platforms are fast in the digital economy and the widespread use of related technologies creates an infrastructure database. In our opinion, the creation of digital economy platforms The main focus should be on the following areas: telecommunications, energy, transport, health care, tax and taxation, medicines logistics, data processing, tourism, foreign trade, mobile property sales and production.

These areas need development to create infrastructure and appropriate technological base Uzbekistan is multifaceted with a shift towards other sectors of the economy it is possible to form the economy as quickly as possible. Such The approach is the most expedient for our country today It seems, but it is not without flaws, of course. But compatible a digital economy that should be based on strategy selection The assumed path to formulate a concept is digital economic risks should also be considered. Developed countries are digital many economics programs (USA, Austria, Australia, UK, Korea and others) the main focus is digital "digital medicine" and "smart city" social focusing on the directions. The development of such projects is serious economic has no effect, but this choice is based on a number of arguments is possible:

Firstly, any large-scale development program is of a Western type and to be publicly supported and supported in an open society. That's it This is because the development of the digital economy has come under the umbrella of social projects slave;

Secondly, the introduction of digital technology in large industries will sooner or later be due to economic feasibility. Social projects require government and community support;

Third, most developed countries have a digital economy significant technology that allows you to do so in a certain way It is based on the well-being of the general public. And we have digital Creating an economy is done in a way that is understandable for the broader population Increased purpose;

Fourth, the introduction of digital technologies in industry (for example, wide range of products in the production of internet, 3D printers scale implementation, such as scaling up) is caught. Realization of social projects "Digital medicine" and "smart city" and it requires more complexity and diversity, and such projects are broad It is supported by the masses. For all modern technology, especially digital management systems From the point of view of the public, this kind of "social stress test" is needed. Thanks to the aforementioned thoughts and ideas, these social trends the importance of social environment is understandable. But their digital It is not clear what role the economy should play in the



national program remains. The first stage of development of digital economy in the Republic health, physical, spiritual, software, technical and social resources;

There is a very high probability that we have two ways: one of them The second is to engage in social adaptation of technologies and the second is local development of technological bases through digital economy In our opinion, the digital economy and the 4.0 Industry in Uzbekistan are corporate.

The following areas will be included as recommendations for large-scale implementation we can show:

- Professional Services - on-demand professional services – accountant services, design services, consultants, translators and more.
- Online banking (Banking).
- Blockchain Tax and Taxation Services.
- Community financing - collaborative finance - crowdfunding, peer-to-peer lending.
- Financial market operations and e-commerce.
- Real Estate Sales and Tenders
- Domestic and international tourism.
- Corporate and personal transport services.
- Home-based services - on-demand household services.
- Housing sharing - peer-to-peer accommodation).
- Transportation sharing - peer-to-peer transportation).
- Introduction of 3D printers in all areas.

Public Open Online Education (MOOC) - massive open online courses). Other services of the digital economy, including big data, are artificial Intellect, machine learning, frauds, hacking, blockchain and cloud technologies are also a solution in the future economy and corporate governance Trends in life are clearly evidenced by this is standing.

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QUALITATIVE AND ORGANOLEPTIC PROPERTIES OF *suya* PRODUCED FROM SELECTED MUSCLES OF NIGERIAN LOCAL DUCKS RAISED IN DIFFERENT LOCATIONS OF EKITI STATE

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ABSTRACT

Production of easy, highly nutritive, cheap and affordable ready-to-eat meat products as delicacy should consistently be made available to ameliorate shortage of animal protein in the diets. The study investigated the effect of different locations on qualities and sensory properties of suya produced from breast and drum stick muscles of Nigerian indigenous breed of ducks. A 24 indigenous breed duck of 24 months old of an average live weight of ± 3.5 kg for the drakes (male) and ± 2.5 kg for females were randomly selected from household keepers within three different locations in Ekiti State. The birds were acclimatized for two weeks and quarantined. Six ducks were randomly selected from treatment group, weighed prior slaughtering, carcasses dissected into standard cuts. The breast muscles were filleted and weighed. The breast and drum stick muscles were chilled at 4°C in a polythene bags overnight. Suya ingredients were prepared and muscles processed into suya. Suya were roasted on a smokeless fire to internal temperature of 70°C and cooled before weight was taken. Suya was evaluated for cook loss, cook yield; organoleptic properties, moisture content, shear force, Thiobarbituric Acid Reacting Substance (Tbars) and pH. The study revealed that meat qualities (thaw loss, cook loss, cook yield and pH values) significantly differs ($p < 0.05$); shear force of suya of female muscles differ significantly ($p < 0.05$) between locations and Tbars values did not differ ($p > 0.05$) in suya samples of breast and drum stick muscles derived from male and female ducks from different locations. The overall best organoleptic properties was rated in breast suya meat of male from location A (Ekiti Central) while the drum stick suya was best rated in female duck of location B (Ekiti North).

KEY WORDS: suya, muscles, indigenous ducks, sex, different locations.

1.0 INTRODUCTION

Animal products of value added varieties such as spiced, cooked and uncooked have been in use from the time immemorial. Some of the meat products consumed are products from animal such as cattle (beef/veal), sheep (mutton), swine (pork), goats (chevon), poultry (chicken) and games. Conversion of meat into healthy, easy, affordable and ready-to-cook and ready-to-eat products contributes to meeting the need for adequate

consumption of daily animal protein requirement in the diet.

Value-added meat products such as comminuted, non-comminuted meat, dry, smoke and fermented products are always available as delicacies, generate income per household and could boost the nation's gross domestic product (GDP) through exportation of animal products. Several poultry species have been processed into fast muscle food products that are being sold along the road side, restaurants, open markets and



other available outlets in Nigeria. *Suya*, a special meat delicacy is known to be popular among the Northerners in Nigeria [1]. The population of Nigerian is increasing on geometric progression on daily basis while the source of meeting the demand for animal protein is growing on arithmetic progression. To ameliorate this major challenge, there is need to utilize less exploited poultry specie such as Nigerian indigenous ducks which is gradually going into an extinction. Therefore, the study aimed at investigating the yield and consumer's preference of *suya* an intermediate moisture meat from the indigenous duck raised under extensive system at three different locations in Ekiti State, South-West region, Nigeria.

2.0 MATERIALS AND METHODS

2.1 Animal management and experimental design

A total number of twenty four of twenty-four months old Nigerian indigenous ducks comprise twelve drakes and twelve female were procured. Eight ducks each were randomly selected from households per locations. Animals were housed individually in a pen at the poultry unit of the Teaching and Research farm, Ekiti state University, Ado-Ekiti. The birds were acclimatized for one week, dewormed and fed with maize grain and water provided.

2.2 Sample collection

Three drakes and three female ducks were randomly selected from each location. The average live weight of birds was taken prior slaughtering, stunned humanely, stuck, bled adequately, defeathered by scalding, eviscerated and dismembered into standard

commercial chicken cuts. The breast and drum stick muscles muscle types were selected from the cut-parts. The selected muscles were weighed separately, wrapped with polythene bags and labeled accordingly. Muscles were chilled at 4°C overnight. The spice used for the ingredients were procured from main market, Ado, Ekiti State.

2.2 Preparation of *suya*

A mixture of ingredients for *suya* marinade comprise salt, black pepper, red pepper, garlic powder, ginger powder, alligator pepper and curry powder. Table 1 shows composition percentage of the mixture. Each of the meat muscles was gently placed in the constituted mixture (marinade) leaving no part untouched and marination was allowed for about 1hr 30mins. The spiced meats were spread on the wire mesh placed on heat source; a smokeless fire made from charcoal and sprinkled with groundnut oil for easy penetration of marinades. The duck meat *suya* was roasted to internal temperature of 70°C. Cooked *suya* samples were spread out on clean absorbable paper, allowed to cool to room temperature and analyzed.

2.3 Determination of physical properties of *suya*

2.3.1 pH determination

The pH of *suya* samples was determined using a pH meter after calibration with pH 4, 10 and 7 buffers. All analyses were taken in triplicate.

2.3.2 Thaw loss (%)

The thaw loss was evaluated by deducting the weight of sample after chilling from weight of sample before chilling divided by weight of sample before chilling multiply by one hundred.

$$\text{Thaw loss (\%)} = \frac{\text{weight of sample before chilling} - \text{weight of sample after chilling}}{\text{Weight of sample before chilling}} \times 100$$

2.3.3 Moisture content

The moisture content of the sample was determined according to the procedure of [2].

Table 1 Composition of *suya* ingredients

Ingredient constituents	Proportion by weight (g)	Percentage proportion in mixture (%)
Garlic powder	101	20.2
Ginger powder	101	20.2
Alligator pepper	20	4
Black pepper	20	4
Red pepper	70	14
Curry powder	50	10
Salt	85	17
Monosodium glutamate	53	10.6



Total

500

100

2.3.4 Cook loss

The percentage cook loss was evaluated by subtracting the weight of cooked sample from weight of raw sample, divided by the weight of raw sample and the result multiplied by 100.

2.3.5 Cook yield

The percentage cook yield was calculated by dividing the weight of cooked samples by the initial weight and the result multiplied by 100.

2.3.6 TBARS determination

Thiobarbituric Acid Reacting Substance (TBARS) was determined by the assessment of lipid oxidation [3]. TBARS rates were calculated from a standard curve and expressed as mg malonaldehyde (MDA) per kg of meat.

2.3.7 Shear force (Kg/cm²)

The shear force value was determined by the method of [4]. Cooked *suya* samples were chopped to the size of 1.0 x 2.0 x 0.5 cm. Texture Analyzer equipped with a Warner-Bratzler shear apparatus was used for the analysis of shear force. The shear force was measured perpendicular to the axis of muscle fibers and values were taken on the cores.

2.3.8 Sensory Evaluation

A ten member taste panelist evaluated the *suya* prepared from the muscle types of sexed indigenous ducks. Samples were coded and evaluated independently using a 9-point hedonic scale to assess the following parameters: aroma, flavour, juiciness, tenderness, texture and overall acceptability. Scores were assigned with 9 being "like extremely" and 1 "dislike" extremely" [5].

2.4 Statistical analysis

All data were collected in triplicate and statistically analyzed [6].

3.0 RESULTS

Table 2 shows the meat quality and cook yield of *suya* made from breast muscles of drakes (male) and female Nigerian indigenous ducks reared in different locations. The thaw loss of the raw breast muscle was highest (4.81%) in location C while the lowest value of 3.43% was observed from location B drakes. The thaw loss of the female raw breast muscle ranged from 6.67% (location C) and 8.76% in location B. Moisture content of *suya* samples of 21% in female of location A and 32% in drakes of location A and female of location B were determined respectively. pH value was statistically similar ($p > 0.05$) between *suya* sample made from breast muscle of drakes from different locations, while *suya* samples significantly differs ($p < 0.05$) between samples in female ducks. The percent cook loss and cook yield

values were significantly different ($p < 0.05$) between *suya* samples prepared from breast muscles of ducks raised from different locations. The results of meat quality and cook yield of *suya* made from drum stick muscles of Nigerian indigenous ducks reared in different locations is shown in Table 3. The thaw loss of raw drum stick muscles ranged from 2.53 % (location B) to 4.68% (location A) in drakes while it ranged from 3.80% (location C) to 5.28% (location B). Moisture content of *suya* made from drum stick muscle of drakes ranged from 23% (location A) to 31% (location B). However, the moisture contents of *suya* from drum stick muscles of female ducks had the highest value of 34% recorded in location B while the least value of 24% was obtained in location A. pH differs statistically ($p < 0.05$) between *suya* samples of drakes and female ducks as obtained from different locations. The percent cook losses were significantly higher ($p < 0.05$) in *suya* from drum stick of indigenous duck of location A than locations B and C. The highest *suya* cook yield of drumstick muscle was found in drakes of location B (93%) and the lowest value of 77% recorded in female muscles of location A. The study revealed significant difference ($p < 0.05$) between *suya* of breast and drum stick muscles made from female ducks with no significant ($p > 0.05$) difference in male ducks. The Tbars value of *suya* of two muscles of either sex was not influenced ($p > 0.05$).

The organoleptic properties of *suya* of breast and drumstick muscles of duck meat were shown on Tables 4 and 5 respectively. The result showed that organoleptic properties rated by the panelists were significantly different ($p < 0.05$) between traits such as aroma, flavor, tenderness, juiciness, texture and overall acceptability in the two muscle types derived from drakes and female indigenous ducks from different locations.

4.0 DISCUSSION

The study showed that low thaw losses were recorded in the raw breast and drumstick muscles of indigenous ducks of either sex. It was observed that the percent thaw loss values were below 10% among samples obtained from ducks of different locations. This qualifies duck meat of either sex to possess good quality of high water retention capacity. This implies that little moisture was lost during chilling and thawing of raw muscles. The moisture contents was lower than 35% as observed in *suya* of both muscle types in drakes and female ducks. This implies that the *suya* contains moisture that could enhance its eating characteristics



such as juiciness, texture and tenderness [7]. The moisture contents obtained for *suya* made from either muscle were much higher than the observations of [8,9]. The moisture contents were lower in *suya* prepared from muscle types of drakes than female across the locations. The pH values obtained in the study were within the range previous reported works for cooked duck meat [10] but lower than those reported by [8] for chicken *suya*. pH may influence the meat attributes such as water holding capacity, aroma, flavor, appearance and texture[11,12]. The percent cook loss of *suya* was extremely lower in drake muscles of locations B and C than the values obtained from female muscles. The cook losses obtained from the study were closer to those reported for cooked chicken [13]. Cook loss indicates that edible meat mass has been lost during processing. Cooking loss may have resulted from the denaturation of the collagen and myofibrillar protein matrix during thermal processing which makes the myofibrillar proteins lose their water holding capacity [13]. The study revealed that *suya* made from either breast or drum stick muscles had low cook out loss especially in the male ducks and this would have influenced the higher cook yield observed in the study. Low cook loss and high cook yield may have been

influenced by the procedure of cooking and structural composition of the muscle types. Study showed that shear force values were higher in drakes than female from the same locations. This is an indication that muscle types influences toughness and texture of meat. The shear force value obtained from male duck muscles were higher than those reported [14] but lower than the values obtained by [13]. The shear force obtained in the study for female muscles were similar to the report of [14] for cooked duck meat. Tbars values of *suya* produced from the two muscles of male and female indigenous ducks were very low and this may be due to the fact that the choice of muscle types used may not have possessed high level of intramuscular fat that could facilitate high rate of lipid oxidation during storage. Also, the nature of management system under which the birds were raised may not allow accumulation of fat in their adipose tissues and some of the ingredients used for the processing of *suya* might have possessed some antioxidants properties that account for low tbars values. Several factors such as juiciness and tenderness[15]could have been responsible for the rating of organoleptic properties of *suya* made from different muscles types of indigenous duck meats reared under extensive system.

Table 2 Meat quality and cook yield of breast muscle *suya* of sexed Nigerian indigenous ducks raised in different geo-political zones

Items	sex	Location A (Ekiti Central)	Location B (Ekiti North)	Location C (Ekiti South)	SEM	p-value
Raw weight (g)	Male	133.8 ^c	181.7 ^a	147.3 ^b	4.13	0.30
	Female	113.7 ^b	110.3 ^c	126.7 ^a	1.16	0.20
% thaw loss	Male	3.48 ^b	3.43 ^c	4.81 ^a	0.15	0.50
	Female	8.80 ^a	8.76 ^a	6.67 ^b	0.14	0.10
Moisture content (%)	Male	32.0 ^a	31.0 ^b	31.0 ^b	0.04	0.00
	Female	21.0 ^c	32.0 ^a	29.0 ^b	0.11	0.00
pH	Male	6.00	6.00	6.00	0.02	1.00
	Female	6.0 ^a	5.70 ^b	5.70 ^b	0.01	0.08
Cook loss (%)	Male	17.0 ^a	7.60 ^c	9.61 ^b	0.20	0.00
	Female	32.4 ^a	18.9 ^c	19.5 ^b	0.10	0.00
Cook yield (%)	Male	84.0 ^c	92.4 ^a	90.4 ^b	0.54	0.00
	Female	68.0 ^c	81.1 ^a	82.0 ^b	0.34	0.00
Shear force (kg/cm ²)	Male	4.40	4.41	4.40	0.02	0.00
	Female	3.36 ^b	3.40 ^a	3.30 ^c	0.10	0.00
Tbars(mg malonaldehyde /kg meat)	Male	0.10	0.10	0.10	0.10	0.00
	Female	0.10	0.10	0.10	0.01	0.00

a, b, c- means with different superscripts on same row are significantly different (P<0.05)

**Table 3 Meat quality and cook yield of drum stick muscle *suya* of sexed Nigerian indigenous ducks raised in different geo-political zones**

Items	sex	Location A (Ekiti Central)	Location B (Ekiti North)	Location C (Ekiti South)	SEM	p-value
Raw weight (g)	M	199.3 ^c	329.7 ^a	261.3 ^b	4.64	0.03
	F	151.4 ^c	162.03 ^b	222.7 ^a	2.93	0.03
% thaw loss	M	4.68 ^a	2.53 ^c	3.45 ^b	0.09	0.04
	F	5.27 ^a	5.28 ^a	3.80 ^b	0.14	0.32
Moisture Content (%)	M	23.0 ^c	31.0 ^a	30.0 ^b	0.22	0.00
	F	24.0 ^c	34.0 ^a	26.0 ^b	0.12	0.00
pH	M	6.83 ^a	6.63 ^c	6.73 ^b	0.03	0.64
	F	6.67 ^a	6.63 ^b	6.60 ^c	0.02	0.91
Cook loss (%)	M	14.87 ^a	7.07 ^b	7.27 ^b	0.37	0.04
	F	25.3 ^a	18.9 ^b	12.7 ^c	0.45	0.03
Cook yield	M	85.2 ^b	93.0 ^a	84.0 ^b	0.36	0.03
	F	77.0 ^c	81.1 ^b	87.3 ^a	0.44	0.04
Shear force (kg/cm ²)	M	4.00	4.00	4.00	0.01	1.00
	F	3.68 ^a	3.53 ^b	3.45 ^c	0.08	0.04
Tbars malonaldehyde (mg/kg meat)	M	0.10	0.10	0.10	0.01	0.00
	F	0.10	0.10	0.10	0.00	0.00

a, b, c- means with different superscripts on same row are significantly different (P<0.05)

Table 4 Organoleptic properties of breast muscle *suya* of sexed Nigerian indigenous ducks raised in different geo-political zones

Items	Sex	Location A (Ekiti Central)	Location B (Ekiti North)	Location C (Ekiti South)	SEM	p-value
Aroma	Male	6.00 ^a	5.25 ^b	2.25 ^c	0.18	0.02
	Female	5.75 ^b	6.25 ^a	6.25 ^a	0.29	1.00
Flavor	Male	7.00 ^a	6.25 ^b	5.75 ^c	0.15	0.50
	Female	6.25 ^b	5.25 ^c	6.50 ^a	0.18	0.60
Tenderness	Male	7.00 ^a	6.75 ^b	5.25 ^c	0.15	0.20
	Female	5.25 ^a	4.50 ^b	4.25 ^c	0.18	0.70
Juiciness	Male	7.50 ^a	7.00 ^b	4.00 ^c	0.17	0.02
	Female	6.50 ^a	4.25 ^b	6.50 ^a	0.11	0.02
Texture	Male	5.75 ^b	5.75 ^b	7.00 ^a	0.24	0.70
	Female	5.50 ^b	4.75 ^c	5.75 ^a	0.21	0.80
overall acceptability	Male	7.75 ^a	7.50 ^b	6.75 ^c	0.12	0.40
	Female	6.50 ^c	6.75 ^b	7.25 ^a	0.14	0.70

a, b, c- means with different superscripts on same row are significantly different (P<0.05)

**Table 5 Organoleptic properties of drum stick muscle *suya* of sexed Nigerian indigenous ducks raised in different geo-political zones**

Items	Sex	Location A (Ekiti Central)	Location B (Ekiti North)	Location C (Ekiti South)	SEM	p.value
Aroma	Male	4.50 ^c	5.00 ^b	6.50 ^a	0.29	0.60
	Female	6.00 ^a	6.00 ^a	5.00 ^b	0.15	0.50
Flavor	Male	5.00 ^b	5.25 ^b	6.75 ^a	0.22	0.40
	Female	5.75 ^a	5.50 ^c	5.70 ^b	0.13	0.90
Tenderness	Male	6.00 ^b	6.00 ^b	7.00 ^a	0.15	0.50
	Female	6.75 ^a	6.00 ^b	5.25 ^c	0.18	0.50
Juiciness	Male	5.50 ^b	5.50 ^b	7.75 ^a	0.15	0.10
	Female	7.00 ^a	7.00 ^a	5.50 ^b	0.12	0.10
Texture	Male	5.25 ^c	6.25 ^b	7.50 ^a	0.13	0.10
	Female	6.00 ^c	6.50 ^a	6.25 ^b	0.10	0.80
overall acceptability	Male	6.25 ^c	6.75 ^b	7.50 ^a	0.12	0.30
	Female	7.00 ^c	8.00 ^a	7.50 ^b	0.10	0.30

a, b, c- means with different superscripts on same row are significantly different (P<0.05), SEM- standard error of mean

5.0 CONCLUSION

The study revealed that the meat qualities such as the percentage of thaw loss, cook loss and cook yield of breast and drum sticks muscles of drakes from location B had better values than those obtained from locations A and C as well as the female counterparts. The shear force revealed that *suya* made from breast and drumsticks muscles of female ducks were more tendered than drakes. Low Tbars values obtained in *suya* products from birds of different locations depict that duck meat is shelf stable and would be very safe for consumption. The *suya* from breast muscles of drake location A was most accepted by panelist while the overall acceptance of drum stick muscles was best rated in female of location B. It is concluded that *suya* produced from the two muscles types of either sex of Nigerian indigenous breed of ducks possessed high cook yield, shelf stable and eating qualities irrespective of their locations.

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EFFECT OF GOOGLE CLASSROOM ON INTEREST AND PERFORMANCE OF TRAINEE TEACHERS IN COMPUTER EDUCATION

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ABSTRACT

This study investigated Google classroom application and undergraduate trainee teachers' interest and performance in Computer Education course in University of Port Harcourt, Rivers State. Five research questions were raised and answered. Five hypotheses were formulated to guide the study. A quasi-experimental design was adopted. The population of the study comprised one thousand four hundred and sixty (1460) final year trainee teachers in the faculty of Education, University of Port Harcourt. The sample size comprised 275 participants from two selected departments. Two instruments were used for data collection. A researcher-made achievement test titled Computer in Education Achievement Test (CEAT) and a Computer in Education Interest Inventory (CEII). Mean, standard deviation and mean difference were used in answering the research questions while paired sample t-test, one-way ANCOVA and two-way ANCOVA were used in testing the hypotheses. The findings revealed that there was significant difference in the interest and performance scores of trainee teachers taught Computer Education using Google Classroom Discussion Strategy and those taught with the Face to Face Method. Also, the study showed that the Google Classroom Discussion strategy used in the study was not gender biased, this manifested in the interest scores and performances of male and female participants which did not differ significantly. The study concluded that Google Classroom if utilised as learning management system (LMS) enhances students' learning, which eventually results in increased interest and better academic performance. The researcher therefore recommended that Google classroom discussion strategy should be adopted in higher education as a form of blended learning strategy in addition to using other methods of teaching. Also, teachers should be adequately trained in the use of learning management systems in order to enhance the teaching and learning of Computer Education courses.

KEYWORDS: *Google Classroom Application, Face-to Face, Trainee Teachers, Teaching Discussion Strategy*



INTRODUCTION

In the modern day and age, technology is very much ubiquitous, in other words it is anywhere, everywhere and at any time. The most fascinating aspect of this trend is that the educational systems are adapting to technology at a rapid pace. This is increasingly assisting the careers of students as well as the teacher.

Technology has really changed the modern day educational landscape. Internet technology has shifted teaching and learning from its immobile state to a more dynamic and mobile platform in such a way that information and knowledge available to both teachers and learners are no longer tied to the boundaries of classroom environment but can be acquired anywhere anytime, even on-the-go.

Internet has been found to hold vast array of information that are accessible and retrievable just at the click of buttons without any restriction in respect to one's location. This internet has also led to the emergence of different technology applications such as the web 2.0 tools through which these information and knowledge can be constructed, shared and communicated among people of related interest and goals.

In recent years, methods of teaching and learning in universities and higher education institutions have evolved gradually from the traditional face-to-face classroom to an online learning environment that defies the need for synchronous time and geographical distance. Education has developed with the use of these technologies. Students increasingly use technological advances to improve their learning, for the purpose of grasping excellent academic performance.

As institutions of higher education integrate technology into classroom curriculum to improve the efficiency of academic standard, university students have generally been swift to adopt these new instructional technology tools in their learning to construct knowledge. They use various educational mobile learning technologies, computer gadgets, electronic devices and ICT tools to support their learning (Wylie, 2015).

The integration of these technologies is not a necessarily new trend in the field of education. For decades, schools around the world have attempted to implement technology plans which aim to supply more frequent use of technology to their students. The assumption is that technology can not only improve day-to-day classroom instruction but also that its interactive nature and necessity for life after school have lasting effects on the students (Iftakhar, 2016).

Over the course of the last decade, there has been a fundamental shift to promote and support

teachers to adopt technology in education. Prominent among this shift is the adoption of virtual classrooms that enable teachers to interact with students in real time.

A virtual classroom is an online classroom that allows participants to communicate with one another, view presentations or videos, interact with other participants, and engage with resources in work groups. The Virtual classroom, a synchronous form of e-learning has been embraced by many organizations in their attempt to promote workforce learning while trying to save time and cut costs associated with face to face instructor-led training (Xanthoula, 2015).

Google Classroom is one of the recent additions to virtual classroom. It is a learning management system for schools that aim to simplify creating, distributing and grading assignments. Google is a popular Web 2.0 tools that offers a lot of interesting facilities and applications. Google, like many other Web 2.0 tools, has potential for teaching and learning because of its unique built-in functions that offer pedagogical, social and technological affordances (Wang, Woo, Quek, Yang & Liu, 2012). Google Classroom is a new tool introduced in Google Apps for Education (GAPE) in 2014. This classroom facilitates the teachers to create and organize assignments quickly, provide feedback efficiently, and communicate with their classes with ease.

Google Classroom is considered as one of the best platforms out there for enhancing teachers' workflow. It provides a set of powerful features that make it an ideal tool to use with students. Helping teachers save time, keep classes organized, and improve communication with students. It is available to anyone with Google Apps for Education, a free suite of productivity tools including Gmail, Drive and Docs.

Google's latest announcement brings new functionality to Google Classroom. Included in the new functionality is the ability to add more than one teacher, as well as to preparing for classes in advance as well.

At institutions and for teachers who currently signed on with Google, there are several ways in which this virtual classroom could be beneficial to students, teachers and school.

- i. Google Classroom has the potential to streamline communication and workflow for students by providing a single access point to discussion threads and assigned work.
- ii. It can help students keep their files more organized because all their work can be stored "paperlessly" in a single program.
- iii. Teachers can more quickly identify which students may be struggling with their



assignments due to the tracking mechanisms associated with assigned tasks.

- iv. Grading processes can be simplified because of the grading features associated with students' submissions.

Crawford, (2015) stated that Google Classroom facilitates collaborative learning. Here teacher can upload materials and can give feedback to students. Students also can upload materials and make personal comment. They can share their documents and assignment and thus they can produce the best assignment. Google classroom encourages collaboration between students which in turn arouses learners' interest. Interest could be seen as the focusing of the sense organs on or giving attention to some person, activity, situation or object. It is an outcome of experience and for educators; technology affords an important opportunity to increase students' interest and engagement.

Central to students' interest is the relationship between student and teacher in designing learning experiences. A new piece of technology will not keep students engaged on its own but an observation of how students interact with technology, gathering feedback on technology use directly from the students themselves and ensuring that they are effectively using technology specifically for the purpose of learning. Teachers often focus on the fact students are "digital natives" but this does not mean they know how to use technology in the context of a classroom. Teacher's guidance in the use of technology can boost student's interest and engagement to foster inclusive learning and improve academic performance.

In today's technology-savvy world, every student has the passion to perform at peak level. But it is also a surprising fact that many students and educators ignore the significance of technology that can boost their academic performance. Technology aids visualization of concepts helping better comprehension of subject as well as providing ubiquitous access to knowledge and helping a wider coverage of knowledge on the subject suiting learners' appetite and interest which provides for enhanced academic performance.

Gender is seen to also have considerable effects on students' academic performances especially in science subjects. Gender is the range of physical, biological, mental and behavioral characteristics pertaining to and differentiating between the feminine and masculine (female and male) population. The importance of examining performance in relation to gender is based primarily on the socio-cultural differences between girls and boys. Some vocations and professions have been regarded as men's (engineering,

computer science, arts and crafts, agriculture etc.) while others as women's (catering, typing, nursing etc.). In fact, parents assign task like car washing, grass cutting, bulbs fixing, climbing ladders to fix or remove things etc. to the boys. On the other hand, chores like dishes washing, cooking, cleaning and so on is assigned to the girls. In a nutshell, what are regarded as complex and difficult tasks are allocated to boys whereas girls are expected to handle the relatively easy and less demanding tasks. As a result of this way of thinking the larger society has tended to see girls as a weaker sex". Consequently, an average Nigerian girl goes to school with these fixed stereotypes.

In view of the belief that students' gender may have impact on the students' academic performance, this study will examine the relationship between them if any.

Development of any nation is a measure of her development in the area of Technology. Technological growth of a nation leads to its social and economic development. In the world today, science and technology has become a dominant power development indicator. America, Russia, Japan and China are typical examples of nations which are now referred to as developed, as a result of their development in the area of Science and technology. At the heart of science and technology is information and communication technology (ICT). In fact, literacy is now being said not to be a function of ability to read or write, rather literacy is now digitally divided.

Computer science is the study of the theory, design, use and analysis of computer devices. This entails knowing the computer itself, its operation, what it can do, how it can do it and why it is doing it, these form the basis of computer science in higher institution. Therefore, computer science course introduced in the curriculum in Nigeria which exposes students to ICT needs to be given due recognition because of its unquantifiable significance to introducing students to ICT on a wider scope.

STATEMENT OF THE PROBLEM

The relevance of the knowledge of Computer science for sustainable development of any nation is immeasurable. Computer science has indisputably affected the entire human race in such a way that in order to survive, one has to be on par with the continuously unfolding trends of the time. So, it has become extremely important to receive quality computer education irrespective of what field one has chosen to pursue. However, the perceived lack of interest and poor academic performance of students in Computer in Education have become a great concern to all stakeholders in Education. Observation reveals that



teacher-centred face to face approach has dominated the teaching of Computer in Education courses in higher education institutions. This method is one of the major impeding factors to the teaching and learning of Computer in Education thereby resulting to low class attendance and truancy on the part of students. Therefore, there is an urgent need to employ an innovative teaching approach which has the capability of providing ubiquitous learning experience that will engage students, spur their interest and consequently enhance academic performance in Computer in Education. Therefore, this study seeks to find out the extent to which Google Classroom Discussion Strategy (GCDS) can enhance the interest and academic performance of trainee teachers in Computer in Education.

AIM AND OBJECTIVES OF THE STUDY

This study aimed at investigating the effect of Google classroom discussion strategy (GCDS) on interest and academic performance of trainee teachers in Computer in Education course in Faculty of Education, University of Port Harcourt.

The following are the targeted objectives of the study to;

1. Determine the effect of Google Classroom Discussion Strategy (GCDS) on the interest of trainee teachers towards Computer Education with regard to their pretest and post-test mean scores.
2. Ascertain the effect of Face-to-face method (FTFM) on the interest of trainee teachers in Computer Education course with regards to their pretest and post-test mean scores.
3. Examine the difference in trainee teachers' interest towards Computer Education between those taught using GCDS and those taught using FTFM
4. Ascertain the effect of GCDS on the academic performance of trainee teachers in Computer Education Course.
5. Investigate the effect of GCDS on the academic performance of male and female trainee teachers in Computer in Education.

RESEARCH QUESTIONS

The understated research questions guided this study:

1. What are the effects of Google Classroom Discussion Strategy (GCDS) on trainee teachers' interest towards Computer Education Course with regard to their pretest and post-test mean scores?
2. What are the effects of Face-to-Face Method (FTFM) on trainee teachers' interest towards Computer Education Course with regard to their pretest and post-test mean scores?

3. What is the difference in the interest scores of trainee teachers in Computer Education Course between those taught using GCDS and FTFM?
4. What are the effects of Google Classroom Discussion Strategy on the academic performance of trainee teachers in Computer Education Course with regard to their pretest and post-test mean scores
5. What are the effects of GCDS and FTFM on the academic performance of male and female trainee teachers in Computer in Education course?

HYPOTHESES

The understated null hypotheses were formulated to guide the study and were tested at 0.05 alpha level.

H01. There is no significant difference in the pretest and post-test mean scores of trainee teachers' interest in Computer Education Course in the GCDS group.

H02. There is no significant difference in the pretest and post-test mean scores of trainee teachers' interest in Computer Education Course in the FTFM group.

H03. There is no significant difference between the interest mean post-test scores in Computer Education Course of trainee teachers taught using GCDS and FTFM.

H04. There is no significant difference in the pretest and post-test scores in academic performance of trainee teachers in Computer Education course in the GCDS group.

H06. There is no significant difference in the mean academic performance of male and female trainee teachers taught Computer Education course using GCDS and FTFM.

METHODOLOGY

This research used two designs, the experimental design and a descriptive design. The former was to assess the effects of Google Classroom application on trainee teachers' performance in Computer Education, while the later described their interest toward learning through Google Classroom application. The population of the study consisted of 1460 final year trainee teachers in the Faculty of Education University of Port Harcourt in 2018/2019 academic year. A purposive sampling technique was adopted in selecting two departments namely; Educational Foundation (EDF) and Curriculum studies and Educational Technology (EDC). The sample size for this study comprised a total of 275 participants in the intact classes. Two instruments for data collection for the study included a



Researcher-made Computer in Education Interest Inventory (CEII) and an Achievement Test on Computer in Education course titled; Computer in Education Achievement Test (CEAT). In order to ensure the validity of the instruments of this study, the draft copy of the instruments, the statement of the problem, purpose and research questions were given to an expert in Educational Technology and subsequently two experts in Measurement and Evaluation in University of Port Harcourt for validation. These experts modified some aspects of the instrument before it was finally administered to the students. The instruments were trial tested to participants outside the study and reliability coefficients of 0.78 and 0.86 were determined using Cronbach Alpha and Kuder Richardson 21 respectively. The method of data collection was done in phases. The researcher sought for permission in using the trainee teachers as well as some facilities in the selected departments from the course lecturers as well as the Head of Departments. The readiness assurance process followed for the experimental group. The experimental Procedure

involved the administration of the CEAT and CEII as pre-tests to the experimental group and the control group to ascertain the equivalence in ability of the students.

Thereafter, treatment commenced and lasted for three weeks of twelve periods. At the end of the treatment, the test items from the instruments were re-organized and re-administered to the same students. Scores for both the pretest and posttest were collected and recorded for analysis. Research questions were answered using mean and standard deviation while the hypotheses were tested with paired sample t-test and ANCOVA at 95% alpha level of significance, using SPSS version 22.

RESULTS

Research Question One: What are the effects of Google Classroom Discussion Strategy (GCDS) on trainee teachers’ interest towards Computer Education Course with regard to their pretest and post-test mean scores?

Table 1a: Mean and Standard Deviation of Interest towards Computer Education in GCDS

Test	n	Mean	SD	Mean Gain
Pretest	140	16.14	3.98	
Post-test	140	27.41	3.39	11.27

From the result displayed in Table 1a above, it is shown that the pretest mean score of trainee teachers’ interest towards Computer Education in the group taught using GCDS was 16.14 (S.D = 3.98), while their post-test mean score was 27.41 (S.D = 3.39). Based on these values, it can be observed that there was a mean gain of 11.27. On the basis of the mean gain, this result therefore shows that Google Classroom Discussion

Strategy has a positive effect in trainee teachers’ interest towards Computer Education.

Hypothesis One: There is no significant difference in the pretest and post-test mean scores of trainee teachers’ interest in Computer Education Course in the GCDS group.

Table 1b: Paired Sample t-test pretest and post-test of the effect of GCDS on trainee teachers’ interest in Computer Education

Tests	n	Mean	SD	Mean Gain	df	t	p	α	Decision
Pretest	140	16.14	3.98						Rejected HO ₁
Post-test	140	27.41	3.39	11.27	139	25.94	0.0005	0.05	p<0.05

From the result displayed in Table 1b, it can be observed that when the pretest mean score of 16.14 (SD = 3.98) and the post-test mean score of 27.41 (SD = 3.39) towards Computer Education in the group taught using GCDS was subjected to paired samples t-test, a mean gain of 11.27 was obtained with a calculated t-calculated value of 25.94 at 139 degrees of freedom

with a corresponding p-value of 0.0005. Since the p-value of 0.0005 was lesser than the chosen alpha of 0.05 guiding the study, it therefore implies that the mean difference of 11.27 obtained indicates a significant effect of GCDS on trainee teachers’ interest in Computer Education. The null hypothesis was therefore rejected.



Research Question Two: What are the effects of Face-to-Face Method (FTFM) on trainee teachers' interest towards Computer Education Course with regard to their pretest and post-test mean scores?

Table 2a: Mean and Standard Deviation of Interest towards Computer Education in FTFM

Test	n	Mean	SD	Mean Gain
Pretest	135	17.32	4.09	0.53
Post-test	135	17.85	4.59	

From the result displayed in Table 2a, it is shown that the pretest mean score of trainee teachers' interest towards Computer Education Course in the group taught using FTFM was 17.32 (S.D = 4.09), while their post-test mean score was 17.85 (S.D = 4.59). Based on these values, it can be observed that there was a mean gain of about 0.53. On the basis of the mean gain, this result therefore shows that Face-to-Face

Method has no significant effect in trainee teachers' interest in Computer Education.

Hypothesis Two: There is no significant difference in the pretest and post-test mean scores of trainee teachers' interest in Computer Education Course in the FTFM group.

Table 2b: Paired Sample t-test pretest and post-test of the effect of FTFM on trainee teachers' interest in Computer Education

Test	n	Mean	SD	Mean Gain	df	t	p	α	Decision
Pretest	135	17.32	4.09	0.53	134	1.16	0.247	0.05	Accepted HO ₂ p>0.05
Post-test	135	17.95	4.59						

From the result displayed in Table 2b, it is shown that when the pretest mean score of 17.32 (SD = 4.09) and the post-test mean score of 17.95 (SD = 4.59) in Computer Education in the group taught using FTFM were subjected to paired samples t-test, a mean gain of 0.53 was obtained with a calculated t-calculated value of 1.16 at 139 degrees of freedom with a corresponding p-value of 0.247. Since the p-value of 0.247 was greater than the chosen alpha of 0.05 guiding the study, it

therefore implies that the mean difference of 0.53 obtained indicates no significant effect of FTFM on trainee teachers' interest in Computer Education. The null hypothesis was therefore accepted.

Research Question Three: What is the difference in the interest scores of trainee teachers in Computer Education Course between those taught using GCDS and FTFM?

Table 3a: Pretest and Post-test mean analysis of interest in Computer Education of trainee teachers taught using GCDS and FTFM

Group	N	Pretest Mean (S.D)	Post-test Mean (S.D)	Mean Difference
GCDS	140	16.14 (3.98)	27.41 (3.39)	11.27
FTFM	135	17.32 (4.09)	17.85 (4.59)	0.53

From the result obtained and displayed in Table 3b, it can be observed that when the pretest and post mean scores of students interest in Computer Education Course were subjected to mean difference analysis, it was observed that those in the experimental group taught using GCDS had a mean difference of 11.27, while those in the control group taught using FTFM had a mean difference of 0.53. From the mean difference value, it can therefore be observed that GCDS had a

higher effect on trainee teachers' interest in Google Classroom than FTFM.

Hypothesis Three: There is no significant difference between the interest mean post-test scores in Computer Education Course of trainee teachers taught using GCDS and FTFM.



Table 3b: ANCOVA analysis of the difference in trainee teachers' interest in Computer Education based on teaching strategies

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	6145.193 ^a	2	3072.597	188.765	.000
Intercept	7714.116	1	7714.116	473.916	.000
Pretest	.004	1	.004	.000	.988
Group	6016.235	1	6016.235	369.607	.000
Error	4427.454	272	16.277		
Total	153109.890	275			
Corrected Total	10572.647	274			

After subjecting the posttest scores of trainee teachers taught using both GCDS and FTFM, with the pretest score as the covariate, the result obtained as displayed in Table 3b shows that an F-value of 369.607 was obtained from the row labeled group. Furthermore, it can be seen that a p-value of 0.0005 was gotten at 1 and 272 degrees of freedom which was lesser than 0.05, the chosen alpha guiding the study. Since the p-value obtained from the analysis, is lesser than the chosen

alpha of the study, it therefore indicates that GCDS had a significantly greater effect than FTFM in improving trainee teachers' interest in Google classroom.

Research Question Four: What are the effects of Google Classroom Discussion Strategy on the academic performance of trainee teachers in Computer Education Course with regard to their pretest and post-test mean scores?

Table 4a: Mean and Standard Deviation of Academic Performance in Computer in Education in GCDS

Test	n	Mean	SD	Mean Gain
Pretest	140	11.95	3.65	5.28
Post-test	140	17.23	3.41	

From the result displayed in Table 4, it is shown that the pretest mean score of trainee teachers' performance in Computer in Education in the group taught using GCDS was 11.95 (S.D = 3.98), while their post-test mean score was 17.23 (S.D = 3.41). Based on these values, it can be observed that there was a mean gain of 5.28 on the academic performance of trainee teachers in Computer in Education. On the basis of the mean gain, this result therefore shows that Google

Classroom Discussion Strategy has a positive effect in students' academic performance in Computer in Education.

Hypothesis Four: There is no significant difference in the pretest and post-test scores in academic performance of trainee teachers in Computer Education course in the GCDS group.

Table 4b: Paired Sample t-test pretest and post-test of the effect of GCDS on trainee teachers' academic performance

Test	n	Mean	SD	Mean Gain	df	t	p	α	Decision
Pretest	140	11.95	3.66	5.28	139	12.23	0.0005	0.05	Rejected
Post-test	140	17.23	3.12						p<0.05

From the result displayed in Table 4b, it can be observed that when the pretest mean score of 11.95 (SD = 3.66) and the post-test mean score of 17.23 (SD = 3.39) of academic performance in Computer in Education in the group taught using GCDS were subjected to paired samples t-test, a mean gain of 5.23

was obtained with a calculated t-calculated value of 12.23 at 139 degrees of freedom with a corresponding p-value of 0.0005. Since the p-value of 0.0005 was lesser than the chosen alpha of 0.05 guiding the study, it therefore implies that the mean difference of 5.28 obtained indicates a significant effect of GCDS on



trainee teachers' academic performance in Computer in Education. The null hypothesis was therefore rejected.

Research Question Five: What are the effects of GCDS and FTFM on the academic performance of male

and female trainee teachers in Computer in Education course?

Table 5a: Male and Female trainee teachers' performance in Computer in Education in GCDS and FTFM

	GCDS		FTFM	
	Male	Female	Male	Female
n	60	80	63	72
Pretest Mean (SD)	12.18 (4.29)	11.78 (3.12)	13.61 (3.11)	13.75 (2.84)
Post-test Mean (SD)	17.65 (3.02)	15.82 (3.55)	14.08 (3.14)	14.11 (3.15)
Mean Difference	5.47	4.04	0.47	0.36

From to the results displayed in Table 5a, it can be seen that when the mean difference of male and female trainee teachers in the group taught using GCDS was computed, male trainee teachers had a mean difference of 5.47, while female trainee teachers had a mean difference of 4.04. Furthermore, it was shown that for the trainee teachers taught using FTFM, male had a mean difference of 0.47, while female had a mean difference of 0.36. On the basis of this mean value obtained, it can be observed that trainee teachers in the

GCDS groups performed consistently better at post-test phase irrespective of gender. This result implies that GCDS improved their performance irrespective of gender

Hypothesis Five: There is no significant difference in the mean academic performance of male and female trainee teachers taught Computer Education course using GCDS and FTFM.

Table 5b: Two-way ANCOVA of male and female trainee teachers' performance in GCDS and FTFM groups

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	698.244 ^a	4	174.561	16.184	.000
Intercept	3944.887	1	3944.887	365.731	.000
Pretest Performance	5.633	1	5.633	.522	.471
Group	676.793	1	676.793	62.745	.000
GENDER	8.283	1	8.283	.768	.382
Group * GENDER	9.446	1	9.446	.876	.350
Error	2912.306	270	10.786		
Total	71309.292	275			
Corrected Total	3610.550	274			

The result as shown in Table 4.14 indicated that when the mean performance scores of male and female trainee teachers' in Computer in Education were subjected to mean and standard deviation analysis, an F-value of 0.768 was obtained for gender with a corresponding p-value of 0.382, Furthermore, for difference in group performance, an F-value of 62.745 was obtained with a p-value of 0.000. Furthermore, the interaction between group and gender yielded an F-value of 0.876 with a p-value of 0.350. On the basis of this result, it can be stated that gender did not

significantly determine trainee teachers' performance in computer in Education Course. The null hypothesis was therefore accepted.

DISCUSSION

Effect of Google classroom discussion strategy (GCDS) on students' interest in Computer in Education

The result from this study showed that Google classroom discussion strategy (GCDS) has a significant effect on the interest of trainee teachers in



Computer in Education. This result was obtained because the post-test interest scores of participants were significantly better than their pretest scores. Furthermore, when the result was compared against the interest of trainee teachers in the control group who were not taught using Google classroom discussion strategy (GCDS), but traditional face-to-face method, it showed that participants in the experimental group had significantly improved interest than those in the control. This result was expected because trainee teachers who were taught using GCDS are more likely to appreciate the importance of the course (computer in education) since they practically experienced how the computers can be used in education. Likewise, the primary purpose of Google Classroom is to streamline the process of sharing files between teachers and students (Magid, 2014). Keeler, (2014) also stated that Google classroom encourages collaboration between students, this validates the present findings. In the study carried out by Mostafa and Sohail (2016) to investigate the impact of Google Apps at work from the perspective of the higher educational institutions. Their findings revealed that the administrative staff were more positive toward using Google Apps than the academics in performing their work while 58.8 % of the Academics indicated that they were using Google Apps in processing their work. The results of this study also indicated that Google Apps are highly perceived by both academic and administrative staff. The implication of this study is that Google discussion strategy has a significant impact on performance among both students and staff of higher institution.

From the study, the findings revealed that trainee teachers taught using GCDS had more interest scores in computer education than those taught using FTFM. This result might have been obtained due to the abstract nature of FTFM where the students do not experience the direct application of computer application in education. This result is similar to that obtained by Williams, Adesope and Yinka (2016) who carried out a study to ascertain the attitude of students on the use of social media for educational purposes. It was revealed that social media are used for educational purposes in terms of rapid development in science and technology through ICT. In addition, it was found out that students are highly motivated by the need to find and bond with new peers and potential social group. It further revealed that significant differences exist in usage of social media between male and female respondents; and in attitude of students towards social media. These assertions agree with the present study.

Selevičienė and Burkšaitienė (2015) carried out a similar study to determine students' attitudes and

habits towards Web 2.0 technologies and their impact on the acceptance of these technologies for learning English for specific Purposes. The findings of the research revealed that the surveyed students can be considered to be typical representatives of the so called digital natives' generation, i.e. people who were born in the last decades of the 20th century and who "have spent their entire lives surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age". This implies that universities should be aware of students' current needs and interest related to their learning environment for better knowledge acquisition and academic achievements.

Effect of GCDS on trainee teachers' academic performance in Computer in Education

From the study, the findings revealed that GCDS has significant effect in the teaching and learning of Computer Education. This result might be attributed to the fact that the teaching strategy (GCDS) exposes students to not only the theory but the practical aspect of teaching and learning. With Google Classroom, students are better poised to experience and appreciate the integration of technological tools into educational packages. Google classroom might have also improved participants' performance than FTFM because students can carry their learning to anywhere, even in their homes, unlike the FTFM where learners can only learn with their lecturers present in class. Furthermore, students exposed to Google Classroom can explore related concepts on the internet with fewer limitations unlike in FTFM where students might be prevented from accessing the internet due to administrative, logistic or human limitations. In agreement with the findings from this study, Ballew (2017) conducted a recent study to assess teachers' perceptions regarding implementing of a technology-based course in the classroom via Google Classroom and Google Chrome books. His findings showed that teacher participants' responses regarding Google Classroom were found to be dependent upon their years of experience, grade level assignment, and subject matter. Latif (2016) conducted a study to identify the factors responsible for poor engagement of students in Google classroom and to explore other critical barriers behind the underutilization of this virtual learning platform. The findings empirically unearth peer influence as a significant determinant of the effectiveness of Google classroom. Also, the majority of learners were found more comfortable while teachers play passive facilitators' role instead of active intervention whereas the availability of Facebook groups as a popular



alternate platform for interaction may limit the utilization of Google classroom. The implication is that students do better in academics and participate more in classroom when they are taught using Google classroom discussion strategy.

Academic performance scores of male and female trainee teachers taught with GCDS and FTFM

From the study, the findings revealed that male and female trainee teachers taught computer in education using GCDS performed better than when taught using FTFM. This finding was consistent in that male participants in the GCDS group performed better than male participants in the FTFM group, with the same result obtained for female participants too. Similarly, male trainee teachers in the GCDS group did not perform significantly better than their female counterparts in both GCDS. From these results, it can be observed that students' performance in computer in education course is not due to their gender differences but the method of instruction used. This finding is similar to that of Heggart and Yoo (2018), who conducted a study to examine the effectiveness of using Google Classroom for final year primary teacher education students to encourage student voice and agency, and to consider how the platform might influence future pedagogies at the tertiary level. The findings revealed that Google Classroom increased student participation and learning and improved classroom dynamics. It also revealed concerns around pace and user experience. Their findings agreed with the present study. In a similar study, Shaharane, Jamil, and Rodzi (2017) undertook a study to explore the effectiveness of Google Classroom's active learning activities for data mining subject under the Decision Sciences program. The findings showed that majority of the students satisfy with the Google Classroom's tools that were introduced in the class where all ratios are above averages. The implication is that comparative performance is good in the areas of ease of access, perceived usefulness, communication and interaction, instruction delivery and students' satisfaction towards the Google Classroom's learning activities.

CONCLUSIONS

Based on the findings of the study it is concluded that Google Classroom Discussion Strategy has significant effect on trainee teachers' interest in Computer in Education and their performance in the course. Therefore institutions of higher learning should be aware of students' current needs and interest related to their learning environment for better knowledge acquisition and academic performance.

Also, learners performed better when they own the pace and time of their learning, participate more in classroom and taught using a good learning management system.

Furthermore, comparative performance is good in the areas of ease of access, perceived usefulness, communication and interaction, instruction delivery and students' satisfaction towards the Google Classroom's learning activities.

Recommendations

Based on the findings and conclusion of the study, it is recommended as follows:

1. Google classroom discussion strategy should be adopted in higher education as a form of blended learning strategy in addition to using other methods of teaching.
2. Computer in education courses should be taught using Google classroom discussion strategy.
3. Teachers should act as guides on the side and allow learners to take control of their learning; this will enhance their participation thereby increasing their academic performance.
4. Learner should be encouraged to engage in interaction with both teachers and their colleagues during learning, as it will enhance their interest in the subject matter.
5. Teachers should be adequately trained in the use of learning management systems and other innovative teaching strategies, in order to enhance teaching and learning in universities.

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NOCTUOID MOTHS (LEPIDOPTERA, NOCTUOIDEA) OF THE SOUTHERN PART OF KARAKALPAKSTAN

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ABSTRACT

The paper presents the results of faunal studies of the Lepidoptera group Noctuoidea in the southern part of Karakalpakstan, as well as a review of the literature on this topic. An annotated list of 51 species of 3 families is given: Erebidae, Nolidae and Noctuidae, which also includes previously published data on finds in the region.

KEY WORDS: noctuoid, moths, Lepidoptera, Erebidae, Nolidae, Noctuidae, Karakalpakstan, ephemera, ephemerids, bush

INTRODUCTION

The family of Noctuidae is the largest family of Lepidoptera. About 30 thousand species are known in the world fauna, and this figure can hardly be considered final. Uzbekistan stands out for its significant species abundance and zoogeographic diversity of the moths. The study of the Noctuidae fauna of Uzbekistan has always been associated with the study of the Lepidoptera fauna of the Khorezm oasis. The first information about the fauna of Noctuidae of the Kyzylkum desert is given in the works of E. Menetries (Menetries, 1832), Bogush (1935, 1956), Kuznetsov (1958, 1960) and many other scientists.

The taxonomic structure of the fauna of Lepidoptera moths and the phenology of the desert in the southern part of Karakalpakstan were studied.

Recently, there has been a great interest in studying both local faunas and individual aspects of the biology of various Lepidoptera groups (Kononenko, 2005; Barbarich, 2012; Barbarich, Dubatolov, 2012; Matov, Kononenko, 2012).

In information on the fauna of Lepidoptera moths, Kyzylkum desert is contained in separate works of the 20th century (Sukhareva, 1967; Daricheva 1988), as well as in modern identifiers and catalogs (Kononenko,

Sviridov, 2003; Kononenko, 2005; Matov et al., 2008; Kononenko, 2010). This work is devoted to the study of the fauna of Lepidoptera in the southern part of Karakalpakstan in the spring-summer period.

AREA OF THE STUDY

The studies were conducted in the southern part of Karakalpakstan. Ephemeral plants and ephemeroids, including wild tulips, are abundant in the vegetation cover. Sand masses are characterized by Carex Arenaria, white Haloxylon, species of Calligonum, Salsola Richteri, for clay elevations - Asteraceae and Asteraceae - shrub vegetation.

In the north-west there are thickets of Anabasis salsa mixed with Amaranthaceae, along the valleys of dry channels there are forests of black Haloxylon.

The climate in the southern part of Karakalpakstan is sharply continental. Summer is hot, the average July temperature is from 26 to 29 ° C, (maximum 51 ° C), January is from 0 to - 9 ° C. Precipitation is about 100-200 mm per year, it falls mainly in winter and spring. Throughout the territory there is not a single surface watercourse (except for the Amu Darya River), but there are rich reserves of fresh groundwater.



Picture 1

MATERIALS AND METHODS

The materials-the basis for this work were collected by the author in 2017-2019, (Picture 1.) And the collection is stored in the laboratories of the Department of Biology of Urgench State University. Research was held from the second decade of March to the second decade of August. The research was conducted in dots of the southern part of the Republic of Karakalpakstan,

- a) Miskin, near the railway station,
- b) 30 km north of the center of the Turkul district and in this point
- c) in the territories of the Ellikala district, in the village of Buston.

Catching was carried out at night using light lamp traps that installed a DRL-400 lamp. (Pictures 2-5) In this work, we adopted the classification of the

superfamily Noctuoidea according to the latest systematic list of European fauna (Fibiger et al., 2011), with the division of the group into 3 families: Erebidae, Nolidae, and Noctuidae. The moth was determined according to the determinants (Kononenko, Sviridov, 2003; Kononenko, 2005; Kononenko, 2010), the Latin names of taxa are given in the Lepidoptera Catalog of Russia (Matov et al., 2008). For the most complete identification of the species composition of scythe lepidopterans in the study area, it is necessary to use the whole spectrum of collection methods, since some groups of species that do not feed on the adult stage or feed exclusively on flowers (Plusiinae, Cuculliinae) do not fly on bait at all; on the other hand, a number of species are much better attracted by bait than by light (some species of the genus Erebidae).



Picture 2



Picture 3



Picture 4



Picture 5

RESEARCH RESULTS AND DISCUSSION

In the fauna of Lepidoptera moths of the spring-summer phenological period in the southern part of

Karakalpakstan, 51 species are recorded, belonging to 26 genera of 15 subfamilies and 3 families, a systematic list of which is given below.

Table 1. Identified species of Lepidoptera moths in the southern part of Karakalpakstan

№	NAME OF TAXA	DISCOVERY DATE	COLLECTION POINTS		
			a	б	c
	Family Nolidae				
	Подсемейство Chloephorinae				
1	<i>Earias roseifera</i> Butler, 1881	03.07.2018,03.07.2019	+	+	+
	Family Erebidae				
	Subfamily Hypeninae				
2	<i>Rhynchodontodes ravalis</i> Herrich-Schaffer, 1851	03.07.2018,06.08.2019		+	
3	<i>Hypena kengkalis</i> Bremer	06.08.2018,18.07.2019	+		
	Subfamily Catocalinae				
4	<i>Catocala elocata</i> (Esper,1787)	03.07.2018,03.07.2019		+	
5	<i>Catocala puerpera</i> (Giorna, 1791)	12.08.2018, 13.08.2019	+		
6	<i>Catocala lupine</i> (Herrich-Schäffer, 1851)	03.07.2018,03.07.2019	+		
7	<i>Catocala optima</i> (Staudinger, 1888)	06.08.2018,18.07.2019		+	
8	<i>Catocala neonympha</i> (Esper, 1805)	06.08.2018,18.07.2019		+	
9	<i>Catocala deducta</i> (Eversmann, 1843)	10.08.2019, 18.06.2019		+	
10	<i>Catocala nupta</i> (Linnaeus, 1767)	06.08.2018,18.07.2019		+	
11	<i>Catocala electa</i> (Vieweg,1790)	25.05.2018,19.05.2019			+
12	<i>Catocala orientalis</i> (Staudinger, 1877)	12.08.2018, 13.08.2019	+		
13	<i>Catocala fulminea</i> (Scopoli, 1763)	12.08.2018, 13.08.2019			+
14	<i>Clytie syriaca</i> (Bugnion, 1837)	25.05.2018,19.05.2019			+
15	<i>Clytie illunaris</i> (Hubner 1813)	25.05.2018,19.05.2019		+	+
16	<i>Clytie gracilis</i> (A.Bang-Haas, 1907)	14.07.2018,11.06.2019	+		
17	<i>Pericyma albidentaria</i> (Freyer, 1842)	14.07.2018,11.06.2019		+	
18	<i>Anydrophila imitatrix</i> (Christoph,1887)	03.07.2018,03.07.2019	+		
	Subfamily Toxocampinae				
19	<i>Lygephilalubrica</i> (Freyer, 1846)	14.07.2018,11.06.2019			+
20	<i>Lygephila cracca</i> ([Denis et Schiffermüller],	03.07.2018,12.07.2019	+		



	1775)				
	Subfamily Boletobiinae				
21	Eublemma gratioza (Eversmann, 1854)	15.05.2018,18.05.2019		+	
	Subfamily Erebiniae				
22	Euclidia dentata (Staudinger, 1871)	25.05.2018,19.05.2019	+		
23	Euclidia glyphica (Linnaeus, 1758)	12.08.2018,17.08.2019			+
24	Euclidia mi (Clerk, 1759)	17.06.2018,21.06.2019			+
25	Euclidia triquetra (Denis & Schiffermüller, 1775)	12.08.2018, 17.08.2019	+		
26	Dysgonia obscura (Bremer et Grey, 1853)	09.08.2018, 05.08.2019			+
27	Dysgonia rogenhoferi (Bahatsch, 1880)	10.08.2019, 18.06.2019	+		
	Family Noctuidae				
	Subfamily Plusiinae				
28	Macdunnoughia confusa (Stephens, 1850)	07.06.2018, 18.06.2019			+
29	Chrysodeixis chalcites (Esper, 1789),	12.08.2018, 13.08.2019	+	+	
30	Diachrysis nadeja (Oberthür, 1880),	12.06.2018, 30.06.2019	+		
31	Autographa mandarina (Freyer, 1845)	12.06.2018 14.07.2019			+
	Subfamily Acontiinae:				
32	Acontia trabealis (Scopoli, 1763).	26.05.2018,22.05.2019	+		
	Subfamily Pantheinae:				
33	Colocasia mus (Oberthür, 1884).	26.08.2018,17.08.2019			+
	Subfamily Acronictinae:		+		
34	Acronicta adaucta (Warren, 1909)	20.05.2018,25.05.2019			+
35	Acronicta alni (Linnaeus, 1767)	20.05.2018,19.05.2019			+
36	Acronicta digna (Butler, 1881)	28.08.2018,20.08.2019	+		
37	Acronicta leucocuspis (Butler, 1878)	22.07.2018,18.07.2019	+		
38	Acronicta rumicis (Linnaeus, 1758)	03.08.2018,01.08.2019		+	
39	Craniophora pacifica (Filipjev, 1927)	23.06.2018,08.06.2019		+	
	Subfamily Cuculliinae:				
40	Cucullia boryphora (Fischer de Waldheim, 1840)	22.08.2018,16.08.2019			+
41	Cucullia improba (Christoph,1885)	03.06.2018,21.06.2019	+		
42	Cucullia naruenensis (Staudinger, 1879)	18.05.2018,24.05.2019		+	
43	Cucullia hemidiaphana (Graeser,1829)	03.07.2018,29.09.2019	+		
44	Cucullia lucifuga (Denis et Schiffermüller, 1775)	08.05.2018,18.05.2019		+	
	Subfamily Heliiothinae:				+
45	Heliiothis maritima (Graslin, 1855)	03.05.2018,22.05.2019		+	
	Subfamily Xyleninae		+		
46	Orbona fragariae (Vieweg, 1790)	06.08.2018,01.08.2019	+		
	Subfamily Hadeninae			+	
47	Lacanobia aliena (Hübner, 1808)	16.08.2018,14.07.2019	+		
48	Lacanobia splendens (Hübner, 1808)	11.08.2018,18.08.2019			+
49	Leucania obsoleta (Hübner, 1803)	14.08.2018,22.08.2019			+
	Subfamily Noctuinae				
50	Ochropleura plecta (Linnaeus, 1761)	12.08.2018,15.08.2019	+		
51	Cerastis rubricosa (Denis et Schiffermüller, 1775)	03.07.2018,17.07.2019	+		

2 families are distinguished by the greatest number and species diversity: Erebidae - (26 species) and Noctuidae - (19 species). When analyzing the taxonomic structure of the material, 15 subfamilies were distinguished, which differ in the greatest species diversity (Catocalinae, Erebiniae, Plusiinae, Acronictinae, Cuculliinae). The remaining subfamilies have a small fraction of the total number of species. Such a distribution is quite typical for the fauna of the moths of deserts of the spring-summer phenological period.

CONCLUSION

Thus, in the process of conducting the material on the territory, in the fauna of the spring-summer phenological period of the southern part of Karakalpakstan, 51 species of moths of Lepidoptera from 26 genera, 15 subfamilies and 3 families were identified. The dynamics of imago summers has one strongly pronounced threshold for increasing species diversity in June, associated with the activity of adults of the early summer and summer groups, and the second, less



pronounced, occurring at the end of spring, due to the overlap of the end of the summer of the spring fauna and the beginning of early summer activity.

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ISSUES OF JUSTICE AND RATIONAL GOVERNANCE OF THE STATE IN THE VIEWS OF MUHAMMAD RIZA OGAHI

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ABSTRACT

In this article, various ideas and concepts about justice and fairness in the work of Muhammad Riza Ogahi are put forward.

KEY WORDS: *justice, fairness, concepts, independence, Ogahi*

DISCUSSION

Although justice is concerned with phenomena such as law, politics, governance, in the worldview of Eastern thinkers it is often interpreted as an event of spiritual and moral values.

Although various ideas and concepts about justice have been put forward, its socio-philosophical essence has not yet been sufficiently explained. Until now, the essence of the concept of justice, its modern interpretation, especially the manifestation of social justice in the context of independence, its legal and political aspects have not been sufficiently studied.[1]

In the works of Muhammad Riza Ogahi, man, his external and internal worlds are interpreted in different ways, justice, truth, kindness, generosity, fidelity, loyalty are glorified, oppression, ignorance, and injustice are condemned. It should be noted that Muhammad Riza Ogahi, in comparison with his contemporaries Munis Khorezmi and Kamil Khorezmi, deeply analyzes social events and strongly condemns injustice, oppression and other negative evils.

Огаҳийнинг юрт равнақи, эл тинчлиги, халқ фаровонлиги учун масъул бўлган ҳукмдорни адолат билан иш тутишга, раиятпарвар бўлишга ундовчи ва огоҳликка даъват қилувчи қуйидаги фикрлари Навоийнинг юқоридаги байти таъсири ҳосиласидир:

Alisher Navoi's humanistic teachings, imbued with the universal spirit, served as an ideological source in the formation of the thinker's worldview. He follows Navoi in the matter of

existence, society, man, morality, fair and rational management of the state, develops his ideas. Navoi, who exalted man, glorified patriotism, justice and human qualities, and condemned injustice, oppression, inequality and injustice for the sake of human happiness, writes:

Shohki ishi adl ila bunyod etar,
Adl buzuq mulkini obod etar,
SHohki erur adl ila davron anga,
Bo'ldi sirot o'tmagi oson anga.[2]

So if the king rules the country with justice, the ruined country will also prosper. A ruler who acts in accordance with the criteria of justice can easily cross the bridge of Sirat (in that world). The poet warns not to look at the faces of those who have wronged the oppressed people, but to punish them if necessary.

Agahi's words, which encourage the ruler, who is responsible for the development of the country, the peace of the people, and the well-being of the people, to act justly, to be a citizen, and to be vigilant, are the product of Navoi's above verse:

Mulku millatga amin o'lsa agar ogohlar,
Ikki olam obro'yin hosil etkay shohlar [3]

Agahi's ghazal, which begins, "If the state and the nation are ruled by just, enlightened people who know the secrets of the world, both worlds will prosper," is in line with Navoi's views on governing the state with justice and wisdom. The poet described what qualities should be possessed not only by the ruler, but also by the rulers around him.



In the works of the poet a great place is given to the analysis of "injustice". He condemns injustice, which hinders the development of society and the country, and describes oppression as the most secret enemy of mankind and the beginning of evil deeds. According to him, the strength of the "state palace" is directly related to the "ancient statesmen" of the state. It is necessary experienced statesmen who have seen a lot to give wise advice to the ruler in governing the country, to see the right path. Otherwise the throne of the king will be decreased. The king must be accompanied by humane people with political qualifications in the affairs of the country and the state.

Past himmat johili nav davlat o'lmas dastyor,
Shahga lozimdir necha donoyi oliy johlar.[3]

The condition of the people, their well-being, their peaceful coexistence depend on the correct, rational management of the state, the enlightenment, justice and patriotism of the king. Sayyid Muhammad Khan ruled the state justly and wisely, and did not withhold his blessings from scholars. Ogahi cites the example that the people prospered because of their patriotism, and the people lived in peace. In the work "Qasidai nasihat" dedicated to Muhammad Rahimkhan Feruz, the poet's socio-political views and advice are described. In it, the thinker advises the king on the ways of governing the country. According to him, if the king is cruel, cunning, shameless, unfaithful, oppressive and ignorant, the people will suffer, the country will face decline. Only when the king refrains from indulging in luxuries, wickedness and heresy, and oppressing the people, will the state be strengthened, and the people prosper and be strong.

The poet counting the necessary features of the ruler, makes a conclusion:

Ki, himmat biridur, shijoat biri,
Adolat biridur, siyosat biri. [3]

While the poet repeatedly warns the ruler, he is not limited to admonition, but urges him to decrease the grief of the citizens. Ogahi, who understood the basis of injustice, inequality in the current system, wanted the poets to be nationalist, humane, honest and just and courageous in the state courts. He argues that if a lot of wise people gather around the throne and give the right advice to the ruler, the king will be just, and as a result the country will be peaceful and prosperous, the people will live in prosperity. According to him, the selfish, ignorant people in the archon state spend the people's wealth for their own gain, spend the property created by the hard work of the working people, the state treasury for their own interests, and do not turn away from any contempt, disgust and ugliness.

The poet compares social life to a game of chess. In the game of chess, only the straight-walking spirit is far from the king, and because of the

accuracy of his words and deeds, many wise and knowledgeable people are not allowed to go to state courts. Farzin sits next to the king because of his crookedness in the state. The thinker prefers to ride a matte elephant rather than walk crookedly like a farzin in a game of chess. After all, righteousness is a human quality.

Farzin misol yurma vale har tarafga kaj,
To fil surgasan bu bisot ichra motsiz. [3]

That is, it is better to serve as a free, spiritual superior, far from the king, than to be flattered by the king in the pursuit of the world. In this way, the poet promotes the idea of living freely, working hard.

The social environment of that time, the injustice in it, the order, the oppression, shook the heart of the humanist poet. In his disciples he rises to the level of a person who judges justly over the period. In his ghazals, which begin with "Do not flee from the wilderness of madness," "Come, O sorrowful soul," "Let the ruin die ...", he ruthlessly criticized injustice and unevenness. Due to the evil intentions of the people, the people of fidelity are educated, professional people, hard-working people live in grief, ignorant and unjust officials live in luxury.

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THE CAUSAL RELATIONSHIP BETWEEN INTERNATIONAL TRADE AND ECONOMIC GROWTH; THE CASE OF 10 ECONOMICALLY STABLE AFRICAN COUNTRIES

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ABSTRACT

As of late, has become a need on the grounds that no single nation can be free because of various resources accessible to every country. Consequently to guarantee sustainable economic development, the components or potential indicators of trade must be of prime concern. In this paper the causal linkage between international trade indicators and economic growth using a panel data-set for 10 economically stable African countries will be analyzed. The data-set are from the period 2000 to 2018. To evaluate the hypothesis theory experimentally we utilize Granger causality tests.

Our findings uncover bidirectional causal effect from exports (LNEXPORTS), imports (LNIMPORTS), tax less subsidies on products (LNTAX), primary income payments (LNINC) and capital of formation (LNCAP) to economic growth (LNGNI) and the other way around. The general proof validates the hypothesis that in these 10 countries under viable consideration, international trade contributed to economic growth positively.

The policy implication of our study is that by improving international trade indicators and factors for example exports, capital formation, ensuring the strict adherences of tax less subsidies on products and reducing multilateral debts then just will economic growth and sustainable development would be plausible.

KEYWORDS: *Granger causality test; capital formation, economic growth, panel data, international trade, export, import, African countries.*

1. INTRODUCTION

International trade is the trading of products and services between countries. Total trade equals exports plus imports. The word trade has been defined in the Oxford Advanced Learner dictionary as “the activity in which people are buying and selling or exchanging the goods and services” (Rai and

Purvashree, 2015). Trading internationally offers buyers and nations the chance to be presented with products and services not accessible in their own nations, or which would be increasingly costly locally. All things considered, some argue that universal exchange really can be awful for smaller nations, putting them at a putting them at a more noteworthy detriment on the world stage.



Economic growth then is a measure of an increase in proportion of real per capital income of a nation which can be sustained over a long significant stretch of time (Clunies, 2009).

Ghana's openness to foreign trade represented 71.7% of GDP in 2018 according to **Country risk Economic indicators (March, 2020)**. This is because the nation is a member of the World trade organization (WTO) and of the ECOWAS and has additionally consented to various partnership agreements. In August 2016, the nation endorsed the Economic and Partnership Agreement with Europe consequently making exports opportunities to Europe possible. Ghana's "Beyond Aid" policy program aimed at reshaping trade dynamics between the country and developed economies gained a lot of notoriety and subsequently have made the export of gold, cocoa, and oil profitable to the nation in terms of economic growth. Additionally from WTO data, Ghana exported goods estimated at a value of USD 14.86 billion while it imported goods with a total value of USD 13.08 billion. Similarly as concerning services, Ghana exported USD 7.42 billion worth of services in 2018 while it imported 9.01 billion worth of services North Africa recorded the second-best development execution in 2016 at 3.0%, floated by recuperation in Egypt of 4.3% and Algeria of 3.5%. Relentless political vulnerabilities and diminished oil creation in Libya, be that as it may, keep on hauling down development in North Africa. Southern Africa recorded the third-best execution locally with development of 1.1%, down from 1.9% in 2015. Nigeria's economy developed by 33.0% in 2018 as against 26.3% the prior year, as indicated by the World Bank. This was accomplished through businesslike policies permitting the nation to successfully export petroleum oils (82.3% of export revenues in 2018 and petroleum gas (11.1%), and imports petroleum oils (29.0%), light-vessels (9.1%), wheat and meslin (3.2%), motor vehicles (2.8%), motor-cycles (1.6%). These policies assisted with advancing and broaden its exports by strengthening national competitiveness and empowering liberalization through the decrease of endowments. Central Africa recorded the most exceedingly awful development execution at 0.8% because of the terrible performance of Equatorial Guinea (estimated at -8.2% in 2016 and -8.3% in 2015), the Republic of the Congo (which declined to 2.5% in 2016, down from 6.9% in 2015) and Chad (estimated at -3.4% in 2016, down from 1.8% in 2015). West Africa, on the other hand, was hauled somewhere by the economic recession in Nigeria, with economic growth contracting to -1.5% in 2016, down from 2.8% in 2015. However, in 2017 and 2018, the ascent in prices and the recovery of exports allowed the trade balance of Nigeria to be positive again (USD 13.15 billion and USD 22.34 billion) respectively (World Bank, 2018).

It is based on the above ideas, that this study looks to empirically inspect the causal association existing between economic growth and international trade in 10 African countries utilizing Granger causality test to proffer fitting policy suggestions based on finding from the study.

One significant commitment of this research will be will be the information overflows to the scholastic writing of other future research. The study will likewise essentially fill the gap in determining whether international trades can granger-cause economic growth in Africa with an exact consideration on the trade factors. It is important that there is anything but a solitary nation which has developed without a useful tool like trade, however the significance of international trade to economic growth relies a great deal on the conditions in which it works and the purpose it serves. The relevance of international trade starts from proof that there is no nation that can create all items as far as merchandise and enterprises which its populace requires for their use and utilization to a great extent owing it to resource contrasts and limitations. It is along these lines inferred that a trade relationship between countries is imperative since incomes created from the export of commodities can be used to import those commodities which cannot be made locally. The targets of the investigation will be to:

1. Examine the impact of international trade on economic growth of Ghana.
2. To determine the long run relationship between the components of international trade and economic growth of Ghana.
3. To identify the causal relationship between the components of international trade and economic growth Ghana.

This paper will be organized and structured as follows; broadly categorized as **Section 2** theoretical literature reviews, **Section 3** the methodologies and data type, **Section 4** the analysis and discussion of the results and **Section 5** conclusions.

2. THEORETICAL LITERATURE REVIEW

Many research studies and theoretical underpinnings exist regarding international trade and economic growth. Existing theoretical analysis suggest that inflow of foreign capital can boost net resources for domestic investments which in turn boosts economic growth but however studies regarding the causal relationship between international trade and economic has not been fully tapped. The theoretical linkages between my research and other advanced research of previous studies are structured into three segments below:

2.1 Theories of International Trade

International trade exerts considerable effect on economic growth. The classical and neo-classical



economists attached importance to the role international trade plays in a nation's development and regarded it as an "engine of economic growth". Mercantilism is the oldest theory of international trade. Mercantilism was the primary economic system of trade during the 16th to 18th century. Mercantilist theorists believed that the amount of wealth in the world was static. Mercantilism was based on the understanding that a nation's wealth and power were best served by increasing exports and collecting precious metals, such as gold and silver. Proponents of mercantilism believed that strong nation-states have the opportunity to increase wealth by using a State's military power to ensure local markets and supply sources were protected.

The concept of Absolute Cost Advantage (ACA) is attributed to **Adam Smith (1776)** for his publication "An Inquiry into the Nature and Causes of the Wealth of Nations" in which he countered mercantilism. Smith argued that it was impossible for all nations to become rich simultaneously by following mercantilism because the export of one nation is another nation's import. He stated, instead, that all nations would gain simultaneously if they practiced free trade and specialized in accordance with their absolute advantage. Smith also stated that the wealth of nations depends on the goods and services available to their citizens, rather than their gold reserves. Thus, Smith was advocating international free trade among nations. The principle of absolute advantage refers to the ability of an economic agent (individual, firm or country) to produce a greater quantity of a good or service than competitors, using the same amount of resources. According to **Barry et al. (1858)** the "theory of international trade," is to be understood as embracing the abstract speculations incidental to the subject matter; and the "practice of international trade," as embracing the practical details of business operations. The general principles of the theory and practice of international trade comprehend, therefore, the abstract reasonings of the "theorist," and the deductions and applications of the "practical" man, in the matter of the trade of the United States and England, and in the matter of the trade of the United States and Canada. Special considerations are reserved for the succeeding chapters, and nothing more is aimed at here than a few informal illustrations of principles and practice in their more general form. The theory of absolute advantage in international trade in the book of **Smith et al. 2007** appears where there is made numerous theoretical generalizations on incomes, prices and value. On the basis of Adam Smith's theories, the foundations of the classical liberal school are laid down. Although the concern of authorities to increase the national welfare seemed hard to confute, the Scottish economist, named also the father of market economy, has demonstrated that mercantilist philosophy contributes to

weakening the bases of economy development, reduces the wealth of a country even if some groups of interests have gains. In order to increase the wealth of nations, Adam Smith proposes the idea of free trade between states, free trade allowing countries to specialize in the production of goods and services which have the property of offering competitive advantages. When manufacturers bring on the market goods which have been produced at lower costs, they obtain an absolute advantage compared to the other manufacturers. **Adeleye, Adeteye and Adewuyi (2015)** in their paper seeks to viewing international trade from the perceptive of net export (ie. total export less imports) and exchange rate in Nigeria. Economic development is one of the main objectives of every society in the world and economic growth is fundamental to economic development. Export is considered as one of the very important contributors among them.

2.2 Relation between international trade and other macroeconomic factors

Abubakar et al. (2019), in his paper shows that short run causality result shows the presence of short run causality between exports, domestic investment and exchange rate to GDP, running from the variables to GDP. According to **Adeleye et al. (2015)**, from the results obtained, international trade is playing a major role in economic growth of Nigeria but then, of all the variables applied as proxies to international trade, only Total Export remains positive and significant while others remain insignificant. This indicates a major problem in the economy of the nation examined. This is also confirmed from the fact that trade balance is insignificant. The cause of the problem therefore is the existence of monoculture where only oil acts as the sole support of the economy at large without tangible support from other sectors such as industrial, manufacturing, and agriculture. **Mogoe & Mongale (2014)** examined the relationship between foreign trade and economic growth in south Africa using co-integrated vector auto-regression approach. The Empirical investigation exposes that inflation rate, export and exchange rates have a positive relation to GDP while import is negatively related to GDP. **Azeez, Dada & Aluko (2014)** opined that international trade has a significant and positive impact on economic growth. Their result shows a positive relationship between imports, exports and openness on the economy. In his research **Abdullahi et al. (2016)** found that import has positive but insignificant impact on GDP growth. Foreign exchange has negative impact on GDP growth. Therefore, the study concluded that exports impact positively on economic growth of the West Africa and recommended that West African countries should encourage indigenous enterprise for export promotion and import substitution. **Omoju & Adesanya (2012)**



established a significant impact of trade openness on level of per capita income. They point out that trade opportunities in an economy has the ability to enhance growth through greater capital stock, stock of education and higher total factor productivity. **Ahamad et al. (2018)** found that international trade (export and import) has a significant positive impact on economic growth (GDP) in Bangladesh and international trade is strongly positively correlated with economic growth (GDP) in Bangladesh. **Ismail et al. (2010)** their results revealed that exports and investment both have a significant positive impact on economic growth. However, inflation has a significant negative impact on economic growth in the short-run. In the long-run, if there is one percent increase in the total investment, economic growth increases by almost 0.179 percent, while inflation has a negative impact on economic growth by almost 0.032 percent. This analysis demonstrates that, in the long-run, exports led growth hypothesis does not hold in Pakistan, as exports are reported as insignificant factor to advance economic growth. The study done by **Musinguzi et al. (2019)** found that FDI has a negative effect on GDP by \$ -2.46 in Uganda and he recommended that it is vital that policymakers encourage domestic companies to produce goods and services for exports in order to boost economic growth, this is in line with Keynesian theory which advocates for strong government intervention to foster the development of Uganda Foreign Direct Investment and to also ensure that the activities of these investors contribute positively towards Uganda's economic growth. **Lawal & Ezeuchenne (2017)** showed that there is a long run relationship between international trade and economic growth, import and trade openness are both insignificant in the short run but significant in the long run while export and balance of

trade are significant in both the short and long run. The granger causality test showed that economic growth is independent of imports, exports and balance of trade but economic growth is unidirectional with trade openness.

2.3 International trade influence on economic growth

International trade plays an important role in the economy of each individual country. It allows to satisfy the needs of the population; stimulates the internal development of the country. International trade is the exchange of goods and services between countries. The issues of international trade were considered by many economists. The representative of neo-classicism E. Heckscher is among them. According to him, foreign trade leads to an increase in the owners' incomes, relative to excess factors of production and export of the product, and stimulates economic growth. **Heckscher et al. (1919)**

3. DATA TYPE AND METHODOLOGY

3.1 Data type.

This paper will use secondary panel data of 10 African countries that has been applauded by the World Bank for enhancing their economic growth over the years. The datasets are from the period of 2000 to 2018 and were acquired from the World Bank official site. The countries sampled for the purpose of the research are; Ghana, Nigeria, Rwanda, South Africa, Kenya, Ethiopia, Algeria, Morocco, Tunisia and Egypt. The choice for the sample period and country selection is purposefully picked as a result of the immense economic impact these nations have added to the development of Africa furthermore the accessibility of dataset. The total number of observations of the panel is 190. **Table 1** shown below highlights the variables being focused on for the research.

Table 1 Variable description

Variable	Description	Measurement	
LNGNI	GNI (current US\$)	Economic growth	dependent variable
LNEXPORTS	Exports of goods and services (current US\$)	International trade	Independent variable
LNIMPORTS	Imports of goods and services (current US\$)	International trade	Independent variable
LNINF	Consumer price index (2010=100, average)	Inflation	control variable
LNINC	Primary income payments (BoP, current US\$)	Income from FDIs	Independent variable
LNCAP	Gross capital formation (current US\$)	trade indicator	Independent variable
LNDEBT	Multilateral debt service (TDS, current US\$)	trade indicator	Independent variable
LNTAX	Taxes less subsidies on products (current US\$)	International trade	Independent variable

3.2 Methodology

The research will employ the panel data analysis to examine the causal relationship between international trades of these African countries on economic growth by

using the pairwise granger causality concept. First all the variables will be tested for stationarity and in the event that presence of unit root is observed then the first difference is applied to make them stationary. It is



important to convert non-stationary factors to stationary factors before evaluating the model, in light of the fact that non-stationary variable consistently prompt spurious regression. Along these lines, we will affirm this hypothesis by using the **Levin-Lin & Chu LLC (Levin et al., 2002)**, **Im-Pesaran & Shim IPS (Im et al., 2003)** and **ADF-Fisher and PP-Fisher (Maddala & Wu, 1999)** tests to check whether there is a presence of unit root in the factors. The null hypothesis (ie. p-value > 0.05) of the unit tests assumes that there is unit root in the variables and a p-value <= 0.05 confirms the existence of no unit root. If no evidence of unit root is witnessed at that point then it clears path for the study to continue.

After testing for unit root (stationary), the panel co-integration test will be done. Co-integration implies that two or more panel variables are related to each other based on hypothetical theories called long-run equilibrium relation; although these datasets might be non-stationary, they follow each other over time so that their differences is stable. The tests that will be utilized

are **Pedroni (Engle Granger based) (1999)** and the **Kao (Engel-Granger based)** test. The null hypothesis of no cointegration is rejected if majority of the test shows a significant p-value. (I.e.P-value < = 0.05) or within the 95% confidence interval and accepted elsewhere.

To analyze the causal relationship between economic growth and international trade of these selected countries, the granger causality test which illuminates the heading of causality either bidirectional or unidirectional will be performed. This technique is utilized to unquestionably certify granger causality linkage among the factors. The null hypothesis postulates that no variable granger causes another and the Alternative hypothesis assumes otherwise. The econometric model for the study can be composed as:

Economic growth = *f* (International trade indicators, Income from FDI, inflation)

The variables are transformed into natural logarithm and the resulting models can be found as:

$$LNGNI_{it} = \beta_0 + \beta_1 LNEXPORTS_{it} + \beta_2 LNINC_{it} + \beta_3 LNCAP_{it} + \beta_4 LNDEBT_{it} + \beta_5 LNINF_{it} + \mathcal{E}_{it} \quad (1)$$

$$LNGNI_{it} = \beta_0 + \beta_1 LNIMPORTS_{it} + \beta_2 LNINC_{it} + \beta_3 LNCAP_{it} + \beta_4 LNDEBT_{it} + \beta_5 LNINF_{it} + \mathcal{E}_{it} \quad (2)$$

$$LNGNI_{it} = \beta_0 + \beta_1 LNTAX_{it} + \beta_2 LNINC_{it} + \beta_3 LNCAP_{it} + \beta_4 LNDEBT_{it} + \beta_5 LNINF_{it} + \mathcal{E}_{it} \quad (3)$$

In the equations (1), (2) and (3), LNGNI alludes to economic growth, LNEXPORTS refers to exports of goods and services, LNIMPORTS refers to imports of goods and services, LNTAX alludes taxes less subsidies on products, LNINF refers to consumer price index as measure of inflation, LNINC as primary income payments, LNCAP and LNDEBT as the trade indicators representing gross capital formation and debt service, β_0 represents the intercept and \mathcal{E}_{it} represents the error term (stochastic error term), *i* represents the cross section of the seven countries and *t* is the time period from 2000 to 2018.

4. DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1. Descriptive statistics

Table 2 reports the summary statistics of the factors embraced for the study and it reports that the mean and the median are firmly related, the standard deviation are homogenous in nature and Jarque-Bera test affirm that greater part of the factors are not normally distributed. The Kurtosis test confirms that the variables are positive and leptokurtic whiles the Skewness test reports that the factors are negatively skewed. Economic growth over the time frame can be accounted for as 24.61% average rate annually whiles performance of the trade indicators can be presented as 22.10%, 22.31% and 21.40% with regards to exports, imports and tax less subsidy on products. Moreover, inflation recorded an average increase of 4.49% annually.



Table 2 DESCRIPTIVE STATISTICS

	LNGNI	LNEXPORTS	LNIMPORTS	LNTAX	LNINC	LNDEBT	LNCAP	LNINF
Mean	24.61	22.10	22.31	21.40	19.21	18.82	21.42	4.49
Median	24.85	23.70	23.77	22.11	21.09	18.95	23.49	4.57
Maximum	27.03	25.70	25.54	24.44	24.00	21.87	25.30	5.58
Minimum	0.00	0.00	0.00	0.00	0.00	13.01	0.00	0.00
Std. Dev.	2.25	5.69	5.68	3.74	6.26	1.81	6.66	0.58
Skewness	-6.99	-3.38	-3.50	-4.92	-2.53	-0.83	-2.78	-2.51
Kurtosis	76.30	13.34	13.95	28.48	8.07	3.44	9.16	20.21
Jarque-Bera	44078.43	1208.66	1337.13	5906.72	405.26	23.30	544.49	2544.26
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	190	190	190	190	190	190	190	190

4.2 Panel unit root

To test the hypothesis theory of the presence of unit root in every one of factors the panel unit root test is employed. For this investigation, the **Levin-Lin & Chu LLC (Levin et al., 2002)**, **Im-Pesaran & Shim IPS (Im et al., 2003)** and **ADF-Fisher and PP-Fisher (Maddala & Wu, 1999)** test are used. As indicated by the aftereffects of unit root test introduced in **table 3** it is

observed that all the variables demonstrated the presence of unit root (non-stationary) at level with p-values > 0.05. However when the first differencing was applied it was seen that all the factors became stationary with each having a significant p-value (i.e. **P-value <= 0.05**). As such the null hypothesis indicating that all the panels contain a unit root was rejected and the alternate hypothesis of the absence of unit root was accepted.

TABLE 3 PANEL UNIT ROOT (LLC,PP,ADF& IM,PESARAN)

ADF - Fisher Chi-square					PP - Fisher Chi-square				
VARIABLES	AT LEVEL		AT FIRST DIFFERENCE		VARIABLES	AT LEVEL		AT FIRST DIFFERENCE	
	statistic	p-value	statistic	p-value		statistic	p-value	statistic	p-value
LNGNI	10.8387	0.9503	51.0158	0.0002***	LNGNI	3.75811	1.0000	66.9531	0.0000***
LNEXPORTS	5.15265	0.9996	65.4873	0.0000***	LNEXPORTS	3.91533	1.0000	81.9986	0.0000***
LNIMPORTS	3.72190	1.0000	55.4333	0.0000***	LNIMPORTS	4.06721	0.9999	88.1228	0.0000***
LNTAX	28.7947	0.0919	63.4956	0.0000***	LNTAX	13.1366	0.8714	76.0699	0.0000***
LNINC	19.6339	0.4810	51.8246	0.0001***	LNINC	12.7217	0.8890	65.2875	0.0000***
LNDEBT	23.7421	0.2538	95.7719	0.0000***	LNDEBT	20.3338	0.4372	107.545	0.0000***
LNCAP	8.74920	0.9856	57.3883	0.0000***	LNCAP	4.62682	0.9998	76.7355	0.0000***
LNINF	9.90426	0.9699	66.1638	0.0000***	LNINF	13.4840	0.8557	53.9371	0.0001***

Levin, Lin & Chu t*					Im, Pesaran and Shin W-stat				
VARIABLES	AT LEVEL		AT FIRST DIFFERENCE		VARIABLES	AT LEVEL		AT FIRST DIFFERENCE	
	statistic	p-value	statistic	p-value		statistic	p-value	statistic	p-value
LNGNI	1.03332	0.8493	-3.37035	0.0004***	LNGNI	3.72387	0.9999	-3.84858	0.0001***
LNEXPORTS	0.01744	0.5070	-7.13779	0.0000***	LNEXPORTS	2.74348	0.9970	-5.67246	0.0000***
LNIMPORTS	1.36606	0.9140	-7.23859	0.0000***	LNIMPORTS	3.87271	0.9999	-4.72206	0.0000***
LNTAX	-1.3719	0.0851	-7.24958	0.0000***	LNTAX	-0.45208	0.3256	-5.21968	0.0000***
LNINC	-0.1568	0.4377	-5.43246	0.0000***	LNINC	0.29119	0.6145	-2.81763	0.0024***
LNDEBT	0.73863	0.7699	-9.425	0.0000***	LNDEBT	-0.00901	0.4964	-8.68131	0.0000***
LNCAP	1.84681	0.9676	-7.08917	0.0000***	LNCAP	2.87924	0.9980	-4.96572	0.0000***
LNINF	3.24250	0.9994	-3.01269	0.0013***	LNINF	2.93763	0.9983	-4.96225	0.0000***

Note: *** indicates 1% significance, ** indicates 5% significance and * indicates 10% significance. Probabilities for Fisher test are computed using an asymptotic chi-square distribution.



4.3 Panel cointegration test

Additionally, before evaluating the granger causality test, a co-integration relationship between the variables should be confirmed. This is to assist us investigate if there is a long –run association between the dependent and independent variables. The research employs both the Pedroni Engle-Granger based tests and the Kao Residual co-integration test for this reason. From the outcomes in **table 4** the seven test statistics grouped into two categories: the within-dimension and the between –dimension have 6 out of the 11 tests being significant showing the dismissal of the null hypothesis (H0) of no cointegration. Also the aftereffect of Kao test estimation further backings the case of the presence of cointegration and thus the presence of long-run effects since it has a p-value of 0.0003%.

TABLE 4 PANEL PEDRONI CO-INTEGRATIONTEST

Pedroni Residual Cointegration Test-withn-Dimension				
Series: LNGNI LNEXPORTS LNIMPORTS LNTAX				
Null Hypothesis: No cointegration				
	Statistics	P-value	Weighted Statistics	P-value
Panel v-Statistic	11.08808	0.0000***	0.383311	0.3507
Panel rho-Statistic	2.625123	0.9957	1.832211	0.9665
Panel PP-Statistic	0.484930	0.6861	-2.211979	0.0135**
Panel ADF-Statistic	-6.357915	0.0000***	-3.153635	0.0008***
Between-Dimension				
	Statistics	P-value		
Group rho-Statistic	3.176486	0.9993		
Group PP-Statistic	-4.05763	0.0000***		
Group ADF-Statistic	-3.17175	0.0008***		
Kao Residual Co-integration Test				
Null Hypothesis: No cointegration				
	t-Statistic	Prob.		
RESID(-1)	3.653946	0.0003***		

Note: The Pedroni test is asymptotically normally distributed. *** (***) indicates rejection of the null hypothesis at 1% (5%) significance level.

4.4 Granger causality test

Evidence from **table 5** below reports that there is granger causality among the variables hence the null hypothesis that none of the variables granger causes the other is rejected. It is prove that there are both unidirectional and bidirectional granger causality among

the factors. The bidirectional causality linkage root from the exports (LNEXPORTS), imports (LNIMPORTS), tax less subsidies on products (LNTAX), primary income payments (LNINC) and capital of formation (LNCAP) to economic growth (LNGNI) of these 10 African countries and vice versa. The bidirectional causality insists that a



change in any of the factors influence the other variable and the other way around. However, the unidirectional granger causality can be followed from the economic growth (LNGNI) to multilateral debt service (LNDEBT) and primary income payment (LNINC) to multilateral debt service (LNDEBT). The unidirectional causality

affirms that the primary variable granger causes the last mentioned however not the other way around.

TABLE 5

Pairwise Granger Causality Tests			
H0 : No Granger causality	F-Statistic	P-value	Decision
LNEXPORTS does not Granger Cause LNGNI	0.0048	0.9952	Reject H0
LNGNI does not Granger Cause LNEXPORTS	2.0874	0.1273	Reject H0
LNIMPORTS does not Granger Cause LNGNI	0.0242	0.9761	Reject H0
LNGNI does not Granger Cause LNIMPORTS	1.8115	0.1666	Reject H0
LNTAX does not Granger Cause LNGNI	0.1081	0.8976	Reject H0
LNGNI does not Granger Cause LNTAX	1.0087	0.3669	Reject H0
LNINC does not Granger Cause LNGNI	0.0009	0.9991	Reject H0
LNGNI does not Granger Cause LNINC	1.2291	0.2952	Reject H0
LNCAP does not Granger Cause LNGNI	0.0364	0.9643	Reject H0
LNGNI does not Granger Cause LNCAP	0.3961	0.6736	Reject H0
LNDEBT does not Granger Cause LNGNI	19.2486	0.00000003***	Accept H0
LNGNI does not Granger Cause LNDEBT	1.6453	0.1961	Reject H0
LNINF does not Granger Cause LNGNI	0.4920	0.6123	Reject H0
LNGNI does not Granger Cause LNINF	0.4749	0.6228	Reject H0
LNIMPORTS does not Granger Cause LNEXPORTS	0.2218	0.8013	Reject H0
LNEXPORTS does not Granger Cause LNIMPORTS	0.1901	0.8271	Reject H0
LNTAX does not Granger Cause LNEXPORTS	0.0679	0.9344	Reject H0
LNEXPORTS does not Granger Cause LNTAX	0.1244	0.8831	Reject H0
LNINC does not Granger Cause LNEXPORTS	0.1320	0.8764	Reject H0
LNEXPORTS does not Granger Cause LNINC	0.2407	0.7863	Reject H0
LNCAP does not Granger Cause LNEXPORTS	0.0104	0.9896	Reject H0



LNEXPORTS does not Granger Cause LNCAP	1.0790	0.3423	Reject H0
LNDEBT does not Granger Cause LNEXPORTS	0.0751	0.9277	Reject H0
LNEXPORTS does not Granger Cause LNDEBT	0.2361	0.7900	Reject H0
LNINF does not Granger Cause LNEXPORTS	1.0749	0.3437	Reject H0
LNEXPORTS does not Granger Cause LNINF	0.1351	0.8738	Reject H0
LNTAX does not Granger Cause LNIMPORTS	0.0773	0.9257	Reject H0
LNIMPORTS does not Granger Cause LNTAX	0.0535	0.9479	Reject H0
LNINC does not Granger Cause LNIMPORTS	0.1194	0.8875	Reject H0
LNIMPORTS does not Granger Cause LNINC	0.1528	0.8584	Reject H0
LNCAP does not Granger Cause LNIMPORTS	0.0129	0.9872	Reject H0
LNIMPORTS does not Granger Cause LNCAP	1.1715	0.3125	Reject H0
LNDEBT does not Granger Cause LNIMPORTS	0.0473	0.9538	Reject H0
LNIMPORTS does not Granger Cause LNDEBT	0.3751	0.6878	Reject H0
LNINF does not Granger Cause LNIMPORTS	1.3326	0.2666	Reject H0
LNIMPORTS does not Granger Cause LNINF	0.1261	0.8816	Reject H0
LNINC does not Granger Cause LNTAX	0.0866	0.9171	Reject H0
LNTAX does not Granger Cause LNINC	0.0009	0.9991	Reject H0
LNCAP does not Granger Cause LNTAX	0.0248	0.9756	Reject H0
LNTAX does not Granger Cause LNCAP	0.0081	0.9919	Reject H0
LNDEBT does not Granger Cause LNTAX	0.2320	0.7932	Reject H0
LNTAX does not Granger Cause LNDEBT	0.0655	0.9366	Reject H0
LNINF does not Granger Cause LNTAX	0.2546	0.7755	Reject H0
LNTAX does not Granger Cause LNINF	0.2741	0.7606	Reject H0
LNCAP does not Granger Cause LNINC	0.0967	0.9079	Reject H0
LNINC does not Granger Cause LNCAP	0.0390	0.9617	Reject H0
LNDEBT does not Granger Cause LNINC	5.5908	0.0045***	Accept H0
LNINC does not Granger Cause LNDEBT	0.4271	0.6531	Reject H0



LNINF does not Granger Cause LNINC	0.1171	0.8896	Reject H0
LNINC does not Granger Cause LNINF	0.1800	0.8355	Reject H0
LNDEBT does not Granger Cause LNCAP	0.4983	0.6085	Reject H0
LNCAP does not Granger Cause LNDEBT	0.2002	0.8188	Reject H0
LNINF does not Granger Cause LNCAP	0.0534	0.9481	Reject H0
LNCAP does not Granger Cause LNINF	0.0117	0.9884	Reject H0
LNINF does not Granger Cause LNDEBT	2.1388	0.1211	Reject H0
LNDEBT does not Granger Cause LNINF	0.0068	0.9933	Reject H0

Note: *** indicates 1% significance, ** indicates 5% significance, * indicates 10% significance

5. CONCLUSION

In this paper, we intend to accentuate the danger of confusing the relationship between the selected indicators of international trade and economic growth, proposing the chance to additionally investigate bilateral and unilateral causal impact. The panel data analysis and Granger causality test was utilized within this paper to test causality between the international trade, its indicators and economic growth in 10 African countries over the period 2000–2018.

The study found no unit root within the variables after first differencing but found the presence of long run association between the variables hence confirming a significant and positive effect of the international trade on economic growth. In view of our discoveries from the pairwise granger causality test, it is completely imperative for governmental agencies and institutions to design, create and execute strategies, programs, and policies structured explicitly to empower these countries thrive regarding international trade. At the point when we tested the bidirectional Granger causality between the international trade and economic growth, it affirmed that there are indeed causal linkages from the exports (LNEXPORTS), imports (LNIMPORTS), tax less subsidies on products (LNTAX), primary income payments (LNINC) and capital of formation (LNCAP) to economic growth (LNGNI) and vice versa. The general impression that one can draw from these discoveries is that international trade enhances economic growth through trade policies that are solid to reflect the significance for the economic growth of a country. As such nations which cultivate trade advancement strategies and diversification can profit more from international trade. These findings verify the proof of endogenous growth theories. In light of the finding of the investigation, some arrangement proposals that can be advanced by African countries are:

1. First, plan and execute forward-looking trade progression approaches to upgrade and sustain economic growth.

2. Secondly, these nations need to expand the export of products and services to quicken consistent economic growth. This would involve strategies that assist with improving innovation rate and diminish the importation of products and services.

3) African nations can pay off multilateral obligations gradually and rather enhance their gross formation since there was unidirectional granger causality from the economic growth (LNGNI) to multilateral debt service (LNDEBT) and primary income payment (LNINC) to multilateral debt service (LNDEBT) and not the opposite way. This means countries can only service their debts when incomes are generated and also when there is economic growth.

The study suggests further scholarly researches be conducted using non-linear regression method or the generalized linear model to find out the effect of International trade on economic growth in the East Africa sub-region and perhaps forecast the future patterns.

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METHODS FOR CLEANING Tp-30 TURBINE OIL FROM UNWANTED COMPONENTS

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ABSTRACT

In this paper, we study the Tp-30 turbine brand oil and examine the possibility of its purification from undesirable components, in particular, we consider the issue of regeneration of used oil. At an enlarged laboratory facility, the optimal conditions for the purification of used turbine oil were determined and its purification was carried out. Received 12.5% purified oil. A comparative analysis of the purified turbine oil with the original oil is made. Conducted research on the purification of used oil showed the possibility of degeneration of used oil using an adsorbent. A comparative analysis of the initial and purified by adsorption method showed that the purified oil in almost all physico-chemical parameters is not inferior to the original.

KEY WORDS: *petroleum, petroleum oils, refining, silica gel, component, TP-30 turbine oils, regeneration, used oils, paraffin, benzene, toluene, methyl ethyl ketone.*

1. INTRODUCTION

Petroleum oils are the main type of lubricant designed to reduce friction and wear of rubbing surfaces, to prevent their scuffing. They have long been widely used in various fields of technology, and the reliability and durability of machines, mechanisms and various equipment depend on the correct use of oils. The increase in the speed of machines, the increase in operating temperatures, contact loads and the duration of equipment operation have significantly changed the role and increased requirements for lubricants. The growing importance of petroleum oils for the reliable operation of technology has necessitated a more in-depth study of their nature and properties, and the identification of optimal conditions for their production and use.

2. LUBRICATING OILS

The raw materials for the production of lubricating oils are oil fractions boiling above 350 °C. High molecular weight oil compounds are concentrated in these fractions, which are complex multicomponent mixtures of hydrocarbons of various groups and their hetero derivatives, the molecules of which contain atoms of oxygen, sulfur, nitrogen and some metals (nickel, vanadium and others). The

components of the oil fractions have different properties, and their content in the finished oils can be useful and necessary, or harmful and undesirable. Therefore, the most common way of processing oil fractions to obtain oils is to remove “undesirable” components from them while preserving the “desirable” ones, which can provide the finished products with the necessary physicochemical and operational properties.

The production of oils includes the following operations: A) Obtaining several distillate oil fractions: 300-400 °C, 400-450 °C, tar fraction above 500 °C; B) Purification of fractions from undesirable components and dewaxing, deasphalting of tar using selective solvents. C) Hydrotreating components; D) Mixing the refined components in various proportions with each other and additives. The distillate fractions are purified by selective solvents (phenol), dewaxing (with a solution of methyl ethyl ketone, benzene - toluene), and hydrotreating with catalysts. The residual basic components are obtained in two ways: by deasphalting the tar with propane followed by selective purification with phenol (option 1) or by cleaning the tar with pair solvents (option 2). The residual raffinate is then subjected to dewaxing and post-treatment.



The viscosity and viscosity-temperature properties of oils depend on their fractional and chemical composition. With increasing temperature, the viscosity of the oils decreases. The hydrocarbons contained in the oil have different effects on viscosity and its change with temperature. Paraffin hydrocarbons are characterized by the lowest viscosity. Branched hydrocarbons are characterized by the lowest viscosity. With the branching of the chain, their viscosity increases, and the viscosity-temperature properties deteriorate. Cyclic hydrocarbons (naphthenic and aromatic) are significantly more viscous than paraffinic. With the same structure, the viscosity of naphthenic hydrocarbons is higher than aromatic. In general, the more rings there are in the structure of a molecule, and the branched side chains, the higher the viscosity. Resin-asphaltene substances have the highest viscosity.

The most important characteristic of oils is the change in their viscosity with temperature - viscosity index (VI) or viscosity-temperature characteristic, an indicator of which is the viscosity coefficient (ratio V_{50} / V_{100}). The more gentle the temperature viscosity curve (the lower the viscosity coefficient), the higher the VI value and the better the oil (modern oils should have a viscosity index of at least 90). The viscosity-temperature characteristics of the oil depend on the type and structure of the hydrocarbons included in its composition. The most gentle viscosity-temperature curve and, therefore, the highest VI have paraffinic hydrocarbons. IW from paraffin hydrocarbons is less than normal. Cyclic hydrocarbons are characterized by an improvement in the viscosity-temperature properties with a decrease in the cyclic nature of the molecules and an increase in the length of the side chains.

3. CLASSIFICATION AND CHARACTERIZATION OF OILS

Classification and characterization of oils for various purposes. The operation of lubricating oil in the friction unit is largely dependent on operating conditions (temperature, load, travel speed, environmental composition, etc.) and the nature of the mechanism or machine (constant or variable external influences, stops, etc.). Of greatest importance are: design features of the friction unit (type, size, nature of the movement of the rubbing surfaces, etc.); lubrication system and materials with which the oil is in contact during operation: operating conditions of the friction unit, timing of the oil change.

There are three generally accepted classification of petroleum oils: composition, method of production (or purification method) and purpose.

By their origin, lubricants are divided into vegetable, animal and mineral. The issues of separation and purification of technically important

environmental protection products, improving the quality of products manufactured by industry, increasing the degree of purity of individual chemicals, and many others, are associated with the use of adsorbents. Using adsorption technology, a high vacuum is created, deep and fine purification of gases and liquids, recovery of volatile solvents, purification of environmental pollution, emission of trace amounts of useful substances from mixtures, regulation of the composition of the gaseous medium in agricultural storage facilities, etc.

Active carbon, silica gel and aluminum gel, aluminum silica gel, synthetic zeolites, porous glass, polymer adsorbents, as well as adsorbents of natural origin - montmorillonite, palygorskite clays, flasks, diatomites, zeolites, etc. are widely used in the adsorption technique. Natural mineral sorbents have a specific surface and good absorption capacity, in relation to various substances from steam and liquid media; they are widespread and readily available. The development of effective methods for the directed regulation of the physicochemical properties of the surface and the porous structure allows us to expand the scope of use of these adsorbents.

Engineering calculations of adsorption processes and their regulation are based on the results of theoretical studies of the adsorption phenomenon. A great deal of research has been devoted to the thermodynamics and thermochemistry of adsorption phenomena on activated carbons, zeolites, silica gels, and other synthetic adsorbents. They reveal the essence of adsorption processes, allow one to calculate their energy characteristics, determine the direction of change in the state of the adsorption substance in the adsorption layer, the nature of the formed bonds between the components of the adsorbate-adsorbent system and the role of the surface of adsorbents, their porous structure in the adsorption interaction.

For several years, the IONH AN RUz has been studying the thermodynamics and thermochemistry of adsorption of vapors of polar and nonpolar substances on natural mineral sorbents and on the products of their activation and modification. They are aimed at identifying the mechanisms of the occurrence of adsorption processes, the role of active centers and the porous structure of sorbents in these phenomena, at determining the thermodynamic data of adsorption, the heats of wetting of adsorbents by individual liquids and their mixtures, the phase state of the adsorbate in the adsorption layer, and also at estimating the energy of interlayer adsorption.

When studying capillary condensation on mesoporous adsorbents, the thermodynamic criteria for the applicability of the Kelvin equation are established, equations for calculating the differential heat and adsorption entropy are proposed, which describe well the adsorption energy in the region of capillary condensation from one adsorption isotherm,



and the temperature dependence of the point of the beginning of the sharp rise of the differential condensation, the dependence of the heat of the phase transition (type of melting) of the adsorption substance on its refills on various adsorbents that differ in the nature of the surface.

The established patterns can be used to solve practical problems associated with the use of adsorbents based on natural mineral raw materials in adsorption technology.

And so, petroleum oils or otherwise they are called mineral oils - these are liquid mixtures of high boiling hydrocarbons (boiling point 300-600 °C). Basically, they are obtained by fractional distillation of oil.

Petroleum oils are widely used in various sectors of the economy: as preservation, isolation,

lubricating and process oils. Based on them, plastic greases are widely used in technology and the national economy: these are lubricants for gas cranes, railway lubricants, etc.

4. PURPOSE OF THE WORK

The purpose of this work is to study petroleum oils from local oils, in particular, source and used turbine oil, and to purify used oil from undesirable components.

The object of the study was spent TP-30 turbine oil. For its purification from undesirable components, KSK silica gel was chosen, because industrial silica gel (table. 1.) has a lower capacity, it was activated by a special technique.

Table 1
Technical characteristics of silica gels used in chromatography

№	Mark silicagel	Bulk weight with utensil in g/cm ³	Structure						Moisture absorption in weight% at relative humidity				Note
			surface, m ² /g	true specific weight, g/cm ³	apparent weight, g/cm ³	pore volume cm ³ /g.	average pore radius AA	porosity, %	20	40	60	100	
1.	KSK № 2	0,39	338	2,240	0,011	1,19	70	72,7	2,5	4,6	7,8	119	Calcined
2.	KSK № 2,5	0,46	376	2,244	0,706	0,974	51,6	67,4	2,2	4,6	8,7	97,9	Calcined
3.	KSK № 3	0,50	522	2,236	0,729	0,925	35,4	67,4	2,9	5,7	13,5	87,1	Calcined
4.	KSK № 4	0,58	650	2,235	0,831	0,760	23,4	62,8	2,4	7,4	20,1	70,4	-
5.	KSK № 5	0,66	715	2,250	0,980	0,575	16,1	56,4	4,4	15,5	34,9	56,8	Calcined
6.	KSK №6	0,87	527	2,255	1,353	0,296	11,2	40	5,7	15,2	24,7	26,9	Calcined
7.	KSM-16c.	0,87	624	2,179	1,218	0,362	11,6	44,1	11,3	20,5	33,1	34,8	dry fractions. 2,5-0,5

The waste turbine oil was purified in a glass chromatographic column 1 m high, 1.5 cm in diameter. The silica gel KSK fr., Dried at 160-180 °C, was loaded onto the column. (0.25 - 0.5 mm), filled in oil (100 ml.) And after complete saturation of

the sorbent, the valve was opened and the oil flowing out by gravity (control by refractive index) was collected until clean turbine oil. It turned out 12.5 ml of the remaining oil in quality corresponded to the used oil. The cleaning results are shown in table 2.



Table 2
Physico-chemical characteristics of the source and spent mineral oil TP-30

№	Indicators	Turbine oil	
		Source	Spent
1.	Color	yellow	light brown
2.	Transparency at 0 ° C	transparent	muddy
3.	The moisture content,% of the mass.	out	10,0
4.	Mechanical impurities,% of the mass.	0,005	0,1
5.	Density at 20 ° C, g/cm ³ .	0,8658	0,9253
6.	Viscosity index	90	70
7.	Corrosion on copper plates	withstands	can't stand
8.	Closed cup flash point	192	195
9.	Acid number, mg KOH / g	0,1	0,4
10.	Viscosity at 50 ° C, cSt	23,30	30,30
11.	Refractive index (n_D^{20})	1,4820	1,4850

5. CONCLUSION

1. Based on the analysis of domestic and foreign literature, an information - patent search for work has been done.
2. The appropriate methodology for the study of the quality of petroleum oils has been selected. Along with the use of well-known classical and modern methods of analysis, new research methods are applied that were developed at the IONKh AN RUz, such as the cryoscopic method for determining the dynamic salinity and selectivity of the sorbent.
3. The used TP-30 brand turbine oil was used as an object of study, for which all physicochemical parameters were determined in accordance with GOSTs.
4. The optimal sorbent for purification of used turbine oil was chosen - KSK silica gel, which was worked out according to a special method (activated with hydrochloric acid) to increase the sorption capacity. Its dynamic oil capacity was 2.67% of the mass.
5. At an enlarged laboratory facility, the optimal conditions for the purification of used turbine oil were determined and its purification was carried out. Received 12.5% purified oil. A comparative analysis of the purified turbine oil with the original oil is made. Conducted research on the purification of used oil showed the possibility of degeneration of used oil using an adsorbent. A comparative analysis of the initial and purified by adsorption method showed that the purified oil in almost all physico-chemical parameters is not inferior to the original.

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ABOUT THE HISTORY OF LIBRARIANSHIP IN KARAKALPAKSTAN

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ABSTRACT

The presented article is dedicated to the history of librarianship in Karakalpakstan, which is viewed in the context of cultural development of the society. The first libraries on the territory of Karakalpakstan were private ones and they functioned in traditional schools and madrasahs. At soviet time the librarianship was developed widely. The first public libraries in different forms (movable libraries, reading yurts and others) were formed in the republic in 1920th. The formation of libraries and other cultural and enlightenment establishments was the policy of the soviet government on eliminating the illiteracy. A great number of works had been done for organizing the nets of libraries after the Second World War period. All libraries became state and official ones, there existed movable libraries and small reading houses in villages. As most of the libraries were placed in special buildings there was a great need to educated personnel, who were able to work in these places. Due to the centralization policy of book provision, the libraries were ruled by the government and functioned according to government policy, that's why most of the books were in the Russian language. The national independence was a new milestone in the history of the nation. In the first years of the independence there formed the legislative basis of developing the cultural and educational establishments in the country. On the basis of reforming the librarianship system, all the libraries were reformed into resource centers. In spite of computerization tendency of the whole system of cultural and enlightenment sphere, the books are still in demand of most population of the country at that time.

KEYWORDS: *librarianship, private library, public library, soviet time, centralization policy, movable libraries.*

INTRODUCTION

The cultural history of Karakalpak people goes back to ancient times, it has been developing for thousands of years to the world civilization. Numerous monuments of culture and architecture, oral folk creations and many other sources evidence the existence of civilization, science and culture on the territory of Uzbekistan from ancient times. Today the issues of saving and developing the rich cultural heritage of the nation, which are essential in consolidation of national independence, as well as in upbringing a new generation of people, has been the main task put forward before the historians of the country.

The Central Asia was one of the important centers of world civilization. There lived and created famous scientists and philosophers, who put the basis on many sciences and branches of enlightenment. There were the largest educational establishments and the richest libraries of the world in the cities of

Central Asia. The libraries on the territory of Uzbekistan existed from ancient time and had a great influence on the development of world scientific points.

Despite the time of quick informational flow and the development of communication systems, books are considered one of the archaic forms of transmitting cultural treasures and shaping the spiritual and moral values of the individual. In spite of tendency of computerization the whole system of cultural and enlightenment sphere, the books are still in demand of the most population of the country. In the whole world books are becoming the main attribute of cultural development, that's why the necessity of reading books, mainly among young generation are being propagandized in our country at present time.



MATERIALS AND METHOD

The librarianship is considered essential in the system of cultural and enlightening sphere as one of the means of upbringing the individual. It has deep historical roots, the researching of which gives to the contemporary society a great knowledge and invaluable information about cultural-educational activities of the country. The importance of learning the history of developing the librarianship is mentioned in the "The Strategy on further development of the Republic of Uzbekistan in 2017-2021" adopted on the basis of Presidential Decree on February 7, 2017. Mainly, there mentioned the importance of «upbringing of physically healthy, spiritually and intellectually developed, independently thinking youth, dedicated to homeland with solid life views, improving their social activity in democratic reforms and development of civil society» [1].

At soviet time the scholars of Uzbekistan made a great contribution on the investigation of the history of librarianship. Among the great number of scholars we referred to the works of T.N.Kary-Niyazov, S.Radjapov, X.Mirzaeva, I.Rahmanov, T.Ernazarov, X.Davidov, X.Alimov, R.Karimov, N.Sadikova, A.Valiev, o.Kasimova, M.Rashidova, X.Eштутаров, M.Nurмухамедов and others [2] as on their aspects they are close to our topic.

The librarianship was investigated in the context of "cultural revolution" and the history of public education in Karakalpakstan. In the 1950th a numerous research works were defended and there published a lot of monographs in the country, among which we appreciate the works of J.Urumbaev, R.Timasheva, U.Shalekenova, A. Panabergenova and others, who described the development of librarianship as a part of cultural development of the country [3]. The issues of librarianship in Karakalpakstan were first investigated by B.Yu.Ibragimova, who paid attention to the formation and development of libraries in the republic [4]. In the independence period the article of G.Berdimbetova depicted the activity of librarianship in the country [5, 132-134]. The history of cultural and enlightenment establishments were described in the works of R.Ahmetshin [6]. They gave a lot of statistics about the situation in this sphere after the Second World War period. As we see, the historiography has a valuable information about this sphere, there systematized a huge materials on the current state and the development of cultural and enlightenment establishments in Uzbekistan and Karakalpakstan. The scholars investigated all the fragments of the issue, which gave opportunity to learn the situation in this sphere and the role of libraries in the cultural life of the republic on the whole.

The Results of research

The history of libraries on the territory of nowadays Karakalpakstan has also deep roots. These roots can be learned in three periods- the end of XIX century and the beginning of XX century, the soviet time and the period of national independence.

The first libraries on the territory of Karakalpakstan were mostly private ones and they functioned in traditional schools and madrasahs. These kind of educational establishments were about 3000 (in 1909) on the territory of Karakalpakstan at the beginning of the XX century [7, 161]. The scientific literature of that time libraries consisted of the pedagogical works of muddarists, and famous spiritual peers [8].

The first public library on the territory of Karakalpakstan was opened at the 90th of the XIX century in Turtkul and now it is called Turtkul City Library (at past it was named Petroalexandrian library). The initial book fund consisted of people's donations from their personal libraries. On March 7, 1907 the library was given an official status of the Public City library. In 1912 the library fund consisted of 3300 books and magazines.

When the soviet government came to the power there began the nationalization of former libraries of tsarist officers and big manufacturers. In May of that year the special commission nationalized the private library of Novikov in Turtkul, the library of former tsarist administration and reformed them into city's national library, which had about seven thousand books and other publications.

At soviet time the librarianship developed widely. The first public libraries in different forms (movable libraries, reading yurts and others) were formed in 1920th on the territory of Karakalpakstan. It was due to the situation that during the XX century the development of cultural life mostly depended on the structure of government ruling. The existed administrative-commanding system at that time was characterized by the influence on cultural and spiritual-moral life of the society. The cultural life in Karakalpakstan at that time developed under the influence of soviet power and there spread a new system of cultural values and approaches. The government, which lost much in continuing economic devastation and consequently had cultural backwardness from other developed countries, put forward quick and wide measures on extinction of traditional cultural basis. At the same time the government tried all his best to organize his own cultural life and strengthen his new system of social relationship. One of the important role in this policy played the cultural and educational establishments, among which were the libraries as well. They were in the center of ideological policy in the karakalpak society and served in the development of public views. If there were only 5 clubs, 6 chayxanas and 8



reading-houses in 1921, and in 1933 their numbers increased, mainly 41 chayxanas, 15 clubs, 43 libraries, 71 reading-houses, 25 amateur circles were engaged into the cultural sphere [9, 264-265]. Before the war time there functioned 176 libraries, 121 clubs, museums of Local Lore and Republican library, the fund of which consisted of about 30,5 thousand volumes of books and the number of readers was more than 1157 people in the Karakalpak Republic [10].

This activity was closely connected with the issues of enlightenment and elimination of illiteracy, but the latter issue was not announced openly and was a little bit distorted. At the beginning of the 30th years, the magazine "Enlightenment of nationalities" published the data about the literacy condition of Central Asian people, where there pointed out that the number of literate people covered 3,9 % population of tadjiks, 2 % - of uzbeks, 1 % -of kazakhs, 0,7 % - of turkmens, 0,6 % -of kirgizs, 0,2 % - of karakalpaks [11]. This statistical data served as the basis for a great number of researches and hypothesis, resulted on conducting the governmental policy on enlightenment, which included the libraries into the institutions of enlightenment. In 1920th the Department of Enlightenment began the management over the public education and support of all educational and enlightenment establishments, among which were the libraries as well. There organized the organs of library management, which ruled the system of library service in the country.

In learning the history of Karakalpakstan the librarianship is often investigated in the context of "cultural revolution" and as well as in the history of public education in Karakalpakstan. The process continued till the beginning of the World War II. But after the War the issues of cultural and enlightenment establishments were taken a great attention. The results of the attestation, conducted at the end of 1940 mentioned that there were 176 libraries (1774 in Uzbekistan), among which 1 republican, 16 regional and municipal, 6 rural, 2 children's libraries, 116 pivot chayxanas and reading-houses and others in Karakalpakstan. To the mid of 1950 there functioned 293 libraries and 117 reading-houses in the republic. These facts show us that there existed the net of libraries in 1950th, most of which were valuable in the Republic, as well as in regions and villages, and there also functioned small libraries inside the clubs and other establishments, movable libraries and reading-yurts in Karakalpakstan.

In the second half of the 1950th there were opened new libraries: in 1956-1958 there opened 10 new libraries, more than 70 clubs, which had their own libraries in the republic. The book and magazine fund of the libraries in the republic were increased to 300 thousand copies during these three years [12]. On September 22, 1959 there adopted the decision of the Central Committee of the Communist Party of

the Soviet Union "About conditions and measures on improving the librarianship in the country". By that time there existed about 3205 libraries in Uzbekistan and in 1960 there functioned 305 public libraries, the book and journal fund of which consisted of 1180 thousand copies in Karakalpakstan [13]. In 1962 there opened a Republican Children's Library in Nukus and 5 special libraries, which served the weak-eyed people. There existed the net of libraries in the republic, which included numerous republican, municipal and regional libraries as well as children's libraries, rural, club's libraries, labor union's libraries and collective farms' libraries. There can be noticed the increase of libraries in rural places: from 676 in 1958 to 1176 in 1965. The book and journal fund of public libraries consisted of 23177 thousand copies in 1966, which were increased to 7 million copies compared to 1958 [14]. The book fund of libraries in Karakalpakstan was increased rapidly: if in 1927 the book fund consisted of only 16000 copies, then in 1965 it was increased to 1140810 copies, and in 1978 it was reached to 3125790 copies, book loan was 4452618, the number of readers was 301120 people.

DISCUSSION

The critical analysis of historical evidences on the situation of librarianship in 1960-1980th years show that there developed the net of libraries at that time, but the statistical data does not give information on the quality of service in this sphere, whose activity was limited by ideological policy. There was a lack of professionals in this sphere thereto, and many libraries were located in unequipped buildings. While the libraries in cities had some opportunities to service, but the librarianship in rural places were under bad conditions: shortage of book stacks, restriction in functions, beadedness, weak material and technical basis – all of which influenced on the readers' interest to this kind of establishments. And this kind of amotivation resulted the decrease of social culture and spiritual development of the nation. That's why, the foundation of new social-cultural establishments are essential part of the policy of the country, which is going to be in the list of developed countries with innovative technologies and high level of intellectual potential.

The national independence became a new page in the history of our nation. The cultural and public establishments, as well as libraries had a great role in realizing by people their national identity in the country. At present time there exist 11 thousand information and library establishments, which supply 6,3 million readers with information in Uzbekistan. The total fund of literature consists of 83,6 million copies, among which 3,5 million e-versions of books. All regional information and library centers have local networks, which give opportunity to use the Internet. Such kind of networks involved 1639, or 91



% of all resource centers of the country, among which 1380 are connected with the Internet.

These enlightenment establishments are considered the basis of spreading the culture in our society, increasing the opportunities of population in having enough information about the measures and values of reforms being conducted in Uzbekistan in all spheres of life.

Before the 2000th there were 468 libraries in Karakalpakstan, which influenced on the strengthening of national independence and formation of the basis of national ideology. Let's give some facts on the activity of libraries. In the 1990th there were organized different kinds of meetings, "round tables", book exhibitions and discussions in the libraries of the republic. The Republican library being a methodological center, distributed methodological manuals and bibliographic indicators to 17 central library nets. The topic of works were various, for example, in 1999 there organized an exhibition "At the bound of the XXI century" at the libraries №4 and №9 in Nukus, there also organized book exhibitions devoted to the 800 anniversary of Jaloliddin Manguberdy, 175 anniversary of a great karakaplak poet Ajiniyaz, and a Constitution Day. This kind of exhibitions became annual and were organized every year. In 2001 the people of the republic celebrated the anniversaries of famous uzbek poet Alisher Navoy, famous people of karakalpak culture and literature A.Musaev, S.Nurumbetov, M.Nurmuhammedov, G.Esemuratova, K.Mambetov and others.

While investigating the development of librarianship of this time we also learned the normative-legislative documents, which are the basis of the activities of libraries. From the first days of the independence great attention was paid to the preservation of the national heritage and the development of librarianship in Uzbekistan. According to the Presidential Decree "On the organization of Information and Library support for the population of the Republic" adopted on June 20, 2006 there established information-resource centers in all higher and secondary special educational establishments, as well as in secondary schools, there opened Information-resource centers in the republic of Karakalpakstan, in all regions and in the city of Tashkent. This contributed to the increase of supplying the population with the information, teaching the schoolchildren and students.

The Decree of the President of the Republic of Uzbekistan on February 23, 2011 "On measures for further development of information-resource service on the basis of information-communication technologies during 2011-2015 years" opened new opportunities for developing this sphere using the information-communication technologies, uniting the information and library centers into a whole information area, which is able to satisfy the

intellectual needs of the growing generation, to preserve and develop the cultural and spiritual-moral values of the nation, to develop the system of education and self-education in the country.

The adoption of the Law "About Information and Library activity" on April 14, 2011 was an important step in the sphere of information service of the population, in organizing the activities of information and library establishments in the country.

CONCLUSION

It is still continuing the further development of the system of legal regulation of the activity of information and library establishments basing on the principles and norms of national legislation.

In the Presidential Decree of Sh. Mirziyoev adopted on January 12, 2017 "On creation of the commission for the development of publication and distribution of books, and promoting the culture of reading" there pointed out the importance of increasing of the intellectual potential of the youth, and the role of information-resource centers and information and library centers, the system of e-libraries. The actuality of the presented issue is that enlightenment establishments are the basis of spreading culture in the society, they help to increase the familiarity of the population with the essence and importance of reforms being conducted in all spheres in the republic of Uzbekistan, and also the increase of culture of reading among population, especially among young people.

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THE ROLE AND PLACE OF ENGLISH IN INTERNATIONAL COMMUNICATION

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ABSTRACT

English is one of the world's languages spoken by a large number of people around the world. It is used in politics, economics, business, culture and all areas of life. The article explores the basic principles of using English as the language of international communication and its role in international space.

KEYWORDS: *English, communication, international communication, development, world*

INTRODUCTION

One of the features of the modern information society is the increased attention to the problems of language due to the fact that the main load of the information and communication plan falls on the language. The reasons for the increased interest of social philosophers in the problems of understanding, dialogue of cultures, discourse, etc., are the following factors:

First, language becomes one of the most important means of ethnic identification in conditions when traditional forms of collectivity and cultural and moral regulation that unite people are being destroyed.

Secondly, language is the most important factor in ensuring the stability of communication, focusing on understanding, dialogue, and socio-cultural factors.

Third, language is the only mediating link in dialogic communication, direct emotional and spiritual communication of the "I" and "Other", as an actual event.

Fourth, language reality as a form of expression of intersubjective experience is increasingly invading the human life world, generating a new type of communicative behavior – language interaction, new forms of coordination of human behavior, new management mechanisms: on the one hand – money and power, and on the other – language.

Fifth, the study of communication processes is increasingly focused on the study of language communication, where the essence of a person is associated with the question of language, because

there is no more effective means of forming a person than through language.

OBJECTIVES

In foreign practice, organizations are required to include international communication in the development and implementation of communication policies. This includes coordinating campaigns on an international scale; advising and assisting foreign investors in a given country and local investors abroad; advising and assisting companies, states, state or supranational foreign organizations when communicating with public authorities in a given country and foreign authorities; theoretical development and coordination of international programs on crisis prevention and management. Multipolar intercultural communication is becoming more and more relevant today, which is faced by participants of international conferences, symposiums or meetings, where a special role belongs to the English language, which is the language of international communication, universal lingua franca, and the intermediary language for communication between representatives of different language communities.

For 600 million people, English is either the second official language or a foreign language. One billion people, or 20% of the world's population, speak English. More than 75 % of international correspondence (letters, e-mail) and 90 % of information on Internet sites is presented in English. English is widely used in advertising. The reasons for this are as follows: prestige, high cost, meaningful and attractive appearance. It appears that the reason



for this is the synergistic effect of the following factors: the existence of a large number of former British colonies who have chosen English the official language (Australia, Canada, USA); the traditional study of English local elites in different continents (Hong Kong, Philippines); the use of English as the official language of influential international organizations (UN, UNESCO, etc. – only about 12 and a half thousand); the significant role of English-speaking countries in geopolitics; the rapid spread of English via the Internet.

LITERATURE REVIEW

Researcher S. A. Karasev argues that in the 21st century, a new linguistic phenomenon may appear – international English, which will embody the features of all national versions of the English language, which is facilitated by the growing use of English in such areas as media, advertising, the film industry, pop music, tourism, international business, international security (the creation of unified language systems as Seaspeak, EmergencySpeak, Airspeak), education, international communications [1, P 80-81].

As N. A. Bagdasarova points out, the need for a global language is most acutely felt, first, in academic and business communities. [2, P 80-81]. Scientists in many non-English-speaking countries prefer English to their native language in scientific publications. In the post-war period less than 15% of works in the natural sciences were published in English, by 1990 their number reached 57.6 %, and today this figure has grown to 80 %. This data is not surprising, since researchers calculate the citation of their name only from English-language international journals. In addition, the presence of publications in special English-language journals makes it easier to get into the American science citation Index (SCI).

According to V. Kolesov, the English language has "a vast vocabulary and simplicity of grammatical structure". There are no long phrases and complex rhetorical periods, "English is the language of lyrical poetry and newspaper headlines", and "just because it is easy to use, it is easy to use badly" [3, P 32]. Therefore, the question arises about the features of speech addressed to an international audience, in cases where the working language of the meeting is English. It should be remembered that the uncomfortable language of communication inevitably leads to a negative perception of the speaker, and then the inevitable negative perception of information, which negatively affects the effectiveness of the statement.

According to D. Crystal, English has become the language of global communication in the field of business communication, as this language has simplified the exchange of messages between an ever-growing numbers of communicants around the world [4, P 45-47]. It is noteworthy that in the UK,

companies that specialize in teaching native speakers the linguistic features of communication with foreign partners in order to improve the effectiveness of business contacts are becoming more popular.

METHODOLOGY

While speaking about the special role that English plays in international business communication, it should be mentioned that English is declared the official language of international and multinational corporations (Philips, Bosch). About 50 % of companies in Europe communicate with each other in English. As an example, Philips is a Dutch international company where English was chosen as the language of communication, rather than Dutch, because the company employs relatively few Dutch people. A similar situation is observed in the French company Bosch, where English is preferred to French, despite the fact that the company employs many French people and the fact that French itself is the language of world communication. This possibility will be realized by relying on a system of managerial, intercultural and language competencies. Thus, language competence as a basis for working in an international environment implies:

- the ability to read and perceive specialized texts in foreign languages in real time;
- the ability to perceive and document multimedia information in foreign languages in real time;
- the ability to consecutive and simultaneous translation;
- the ability to linguistic and cultural analysis;
- skills of oral and written presentation in foreign languages;
- ability to conduct scientific research in foreign languages;
- skills of oral presentation in foreign languages, including speeches at the state level, etc.

In addition, it should be noted that communication in the international environment involves a combination of a number of managerial knowledge, abilities and skills with intercultural:

- ability to work with the norms and traditions of other countries;
- ability to work in a multicultural environment;
- knowledge of business and public administration in different countries;
- ability to organize negotiations, including negotiations in a multilingual environment;
- ability to act as an intermediary in business negotiations, in conflict resolution;



- ability to work in international organizations;
- ability to organize a mobile office, maintain the main communication channels in any country of the world;
- ability to effectively present your project or company at international exhibitions and conferences.

According to the researcher S. G. Ter-Minasova, it is possible to achieve such competencies if you study languages functionally, in terms of using them in different spheres of society; "in a synchronous cross-section", i.e. in close connection with the world of the language being studied; and with the help of specialists in international and intercultural communication and public relations [5, P 26].

An important place in international communication is occupied by technical and commercial documentation, special scientific and professional literature, presentations of scientists, specialists and professionals on relevant issues at conferences, meetings and other events of an international nature. To have a stable positive image, it is necessary to create this documentation not only in the international (English) language, but also in the language of the country for which it is intended, in compliance with the parameters of effective written communication.

Researcher T. I. Zharkova considers knowledge of terminological systems of science, culture and business, i.e. a special layer of specially cultivated vocabulary, to be an important condition for the implementation of intercultural communication. The use of business terminology in speech certifies the speaker in social terms more highly, emphasizes the level of awareness, claims superiority in relation to their colleagues. Knowledge and possession of business terminology contributes to the bilingual and bicultural development of the student's personality and facilitates the process of intercultural communication with representatives of various societies [6, P 45-47].

Speech communication is a two-way process, the development of which depends on the degree of mutual understanding between communicants, on their ability to adequately perceive messages. An adequate response to English-language speech is a necessary condition for active two-way contact in the process of communication and implies focusing attention not on the language form of the interlocutor's speech and searching for the direct meaning of the statement, but on its hidden meaning, depending on the communication situation, the relationship of the interlocutor to the communication partner and other extra linguistic factors. For accuracy and speed the actions necessary to form a prediction as a mechanism speech act, because failure

to assess the linguistic situation leads to a decrease in the ability to perceive the individuality of the speech, evaluate its significance and impact. A good command of a foreign language only at the level of speech production does not ensure readiness to participate in speech communication. The lack of the ability to perceive fluent foreign language speech leads communication to a dead end and, accordingly, creates a negative communicative effect.

CONCLUSION

In conclusion, it should be noted that the submission of information requires special knowledge. Information is rapidly becoming a new type of capital. The role of public relations professionals is to help employers cope with the flow of information and change, and to transform the fear of change into productive opportunities that contribute positively to the development of society and the individual at the global and local levels. Today's challenges are in stark contrast to past times when planning was predictable. Today, in addition to communication skills, a specialist needs to be receptive to innovations and radical structural changes, as well as information, knowledge and change management skills.

Thus, an important factor for success in international activities is the availability of specialist competencies that are based on the language and especially English as the "universal language of global culture". Such analytical and communication competencies include: professional management and humanitarian education; foreign language skills, primarily English; communication competence; receptivity to innovation; knowledge of the culture of the countries where the organization carries out public relations; taking into account both real and symbolic values; studying the forms of international communication; creative approach to solving communication problems.

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ANTI-FORENSICS: COUNTERING SENSOR NOISE CAMERA IDENTIFICATION

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ABSTRACT

In simple terms, Anti-Forensics can be told as the techniques used to counter forensic analysis done by forensic investigators. This paper mainly focuses on some of the most used anti-forensics techniques along with the challenges the forensics investigator faces. There are many tools and techniques available that when used properly can be highly effective against the forensic analysis techniques. Various tools assist you against various anti-forensics techniques like Elimination of evidence source, Data hiding, and Trail obfuscation. These techniques are used mainly to make the investigation consume more time and money. Sensor Noise Camera Identification is a way to link a photo with the camera the photo was taken from using a noise signature that is unique for every camera.

KEYWORDS: *Anti-Forensics (AF), Forensic Analysis, Anti-Forensic Techniques, Sensor Noise Camera Identification*

1. INTRODUCTION

Advanced technology has become the integral part of our life. To satisfy the need of the society, almost in each work, we use the technology and its applications. It has many real life applications such as internet of things [1, 2, 3, 4, 5, 6, 7, 8], SPP [9, 10, 11, 12, 13, 14, 15, 16], TP [17, 18, 19], PowerShell [20], uncertainty [21, 22, 23], cloud computing [24], artificial intelligence [25], internet Security [26], and so on. Information Communication Technology (ICT) is the mode by which user can use computers and internet to store, fetch, communicate and utilize the information. So all the organizations, industries and also every individual are using computer systems to preserve and share the information. The internet security plays a major role in all computer related applications. The internet security appears in many real-life applications, e.g., smart parking [27], home security, banking system, education sector, defense system, railway, and so on. In this manuscript we discuss about the protection of authentication which is a part of internet security.

Digital Forensics is gaining a lot of scope in the past few years mainly because Cybercrime is gradually increasing day by day. Digital Forensics is the process of collecting, preserving, analyzing and reporting the evidence found to the court without any tampering of the evidence and finally create a detailed report of the forensic analysis process and the evidence found. Anti-forensics techniques are used by Cybercriminals to be under the radar and make

the forensic process more time consuming and costly. Anti-forensics, on the other hand, deals with the techniques used to cover the tracks or destroy digital data that can be submitted as evidence in the court of law. Some of the techniques used are Data Hiding, Artefact Wiping, Trail obfuscation. There are various digital forensics techniques [28].

- **Data Recovery:** As the name suggests in this technique the forensic investigators try to recover data from the confiscated storage medium if in any case the data in those mediums have been deleted by the attacker. Some of the tools that are used for data recovery are Stellar Data Recovery, PC-3000, SysTools Data Recovery [29].
- **File Carving:** When the data on your storage medium is deleted the data cannot be viewed through the standard file explorer. This is when the concept of file carving comes in handy, it allows you to recover deleted files based on the content that was present in the before deletion. The used for file carving are Autopsy, Foremost [29].
- **Header Analysis:** This technique is used for email related crime investigations. Email Header contains some useful metadata that contains data like the IP address of the device from which the message was sent. This IP address can then be used to track



down the attacker. A tool like Email Tracker Pro can be used for this task [29].

- **Known File Filtering:** This technique is used when you have a large number of files and the investigator has to find specific files. This eliminates the need to go through all the files. Forensic Toolkit (FTK) is one such tool that can be used for this purpose [29].
- **Network Sniffing:** In this technique, the investigator will sniff the traffic that is being transmitted over the network, this is logged and analyzed. Wireshark and tcpdump are the popular tools used for network analysis [29].
- **Sensor Noise Camera Identification:** This technique uses subtle pixel anomalies caused by the camera hardware to identify a unique noise signature for every camera. Camera fingerprinting can be used to match a photo to a camera.

2. LITERATURE REVIEW

Sensor Noise Camera Identification also is known as Camera Fingerprinting this is a problem because it is also a technique for deanonymizing people and this can be done to a high degree of accuracy. Major tech companies and corporations already have this technology. There are many techniques used for countering Sensor Noise Camera Identification namely forgery. Camera fingerprinting is weak against forgery. [30] for example:- The attacker takes two images from two different cameras, after which the attacker can estimate the photo fingerprint and paste the same onto the second image by doing so the attacker makes the second image look like it's taken from the first camera. But this can be countered by making use of Digital X-ray [31] technique.

Sensor noise extracted from images can also be served as the camera fingerprint and this can be done using an approach suggested by Chang-Tsun Li [32, 33] were in he proposed the use of an SPN Enhancer which provides an increased rate of device identification.

So keeping that in mind we use a defense in depth approach by firstly using the method proposed and also chaining it with some of the operational mitigation which I suppose would be a solution for the problems mentioned above.

3. EXISTING SYSTEM

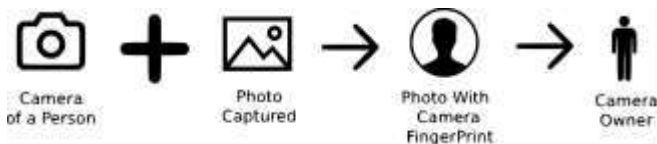


Figure 3.1: Camera Fingerprinting

What is Camera Fingerprinting?

Every camera is unique this is mainly due to something known as production tolerance. Each sensor produced for a smartphone is slightly different from one sensor to another it's these slight differences between the products is what causes the camera fingerprint [34].The noise signature is due to environmental heat and defectiveness on the Charge-coupled device itself which is a type of camera sensor [35]. To find the camera fingerprint each and every picture must be examined pixel by pixel for patterns. This technique works on each and every digital camera produced till date. Analog cameras are not safe either as these kinds of techniques exist for analog camera's too [34].

How does Camera Fingerprinting Work

Step 1: A photo is taken from a camera that belongs to an individual– The camera may be a digital camera or an analog camera that belongs to an individual from which the photo is captured.

Step 2: The photo captured will be generated in combination with a camera fingerprint that is unique for that camera – When the photo captured is generated it is combined with the camera fingerprint which is unique to that camera sensor.

Step 3: The photo-generated by this camera can be used to identify the owner of the camera by extracting and analyzing the camera fingerprint – As told earlier each camera sensor is unique and this can be used to identify the owner of the camera. Ex: If someone had to find who took a particular photo then they could extract the camera fingerprint from image and by inquiring the sensor manufacturer which camera was that sensor used in. Indirectly linking back to the camera owner.

Note:- Camera Fingerprint along with EXIF metadata can be used to identify an individual.

4. ANTI-FORENSICS

- **Encryption:** Encryption is the most commonly used Anti-Forensic technique [36] by attackers to make the data unreadable which can be used as evidence in the court of law. Some of the encryption algorithms are AES, 3DES, RSA, etc.
- **Steganography:** It is the process of hiding confidential data within various types of files such as Image, Video, Audio, etc. Some of the tools that can be used for this purpose are as follows StegHide, Crypture [36]
- **Scrubbing Metadata/Timestamps:** Changing or deleting on metadata and timestamps is another Anti-Forensic technique used. When an image is clicked via a camera the image will contain some data about the image itself such as “When the photo was



clicked”, “GPS coordinates”, “Name of the owner of the photo” etc. So deleting these data is necessary. Some tools used for this purpose are EXIF tool, JPEG & PNG Stripper [36].

- Wiping a Hard Drive: Wiping the hard drive multiple times and filling it with garbage values mostly with zeros. The wiping methods differ for both Solid State Drives and Mechanical Drives. There are different methods of wiping a hard drive but the most common methods are the Gutmann Method and Department of Defense 7 pass method [36].
- Analyzing the Quantification Matrix: For this method to work, a reference image is required in order to compare. Here the quantization matrix of both the images are counted and extracted. This is also known as quantification matrix, basically it is nothing but a set of values that are used for representing the image [37].
- Analyzing of Photo Response Non-Uniformity (PRNU): Photo Response Noise is an unique characteristic of every digital camera sensor. In this technique the PRNU pattern of the images that has to be analyzed is obtained and compared by using a correlation process. Both the images should be flat meaning the lighting condition for both the images should be the same. The photo acquired with the camera in question will have a value close to one and the photo acquired with the camera in question will have the value zero or even negative [37].
- Disable Logging: The system keeps logs of events that have occurred from the installation of software to system crash logs. Some of the tools used for this purpose are Auditpol and Winzapper [36].
- Adding Noise to Images: An image compression history can be used by a forensic investigator in order to determine whether the image has been modified, gain information on the camera from which the image was generated and also to know the regions that were forged [38].

5. PROPOSED SYSTEM

Since Sensor Noise Camera Identification uses unique noise signatures to identify every camera. So the most effective way to remove the noise signatures is by creating more noise.

Step 1: Remove any camera info that can be used to link back to you. Often when a image is clicked using a camera a data file is created this data contains information of the manufacturer of the camera, ISO setting, date and time when the image was captured etc. One way to remove this data is by using a tool such as EXIFtool, but alternatively you can open the image in photoshop and save it to web. When prompted save in JPEG compression with the image quality being no

greated that 60% this adds a lot of random noise which makes it hard to create noise signature [35] .

File Size	284 kB
File Type	JPEG
MIME Type	image/jpeg
Image Width	1200
Image Height	800

Figure 5.1: Remove Camera Information

Step 2: Cleaning your camera lens regularly with a smooth cloth removes dirt that will show up in every image you click and will never change. Thus making it very easy to identify you [35] .



Figure 5.2: Clean the Camera Lens

Step 3: So to avoid this from happening you will have to crop the image this makes the position of the static pixels to shift hence when compared it looks like noise [35].



Figure 5.3: Crop the Image

Step 4: First open the image in an image editor like Gimp or Photoshop and resize the image [35] i.e. if the image is of



1366x768 pixels then resize it to 1600x900 pixels, now that the image is resized save it.



Figure 5.4: Resize the Image

Step 5: Crop the image and save the image using bi-cubic compression [35] .



Figure 5.5: Crop using Bi-Cubic Compression

Step 6: Use the exiftool to remove any EXIF information. By using the command `exiftool.exe -all= "filename.jpg"` [35]

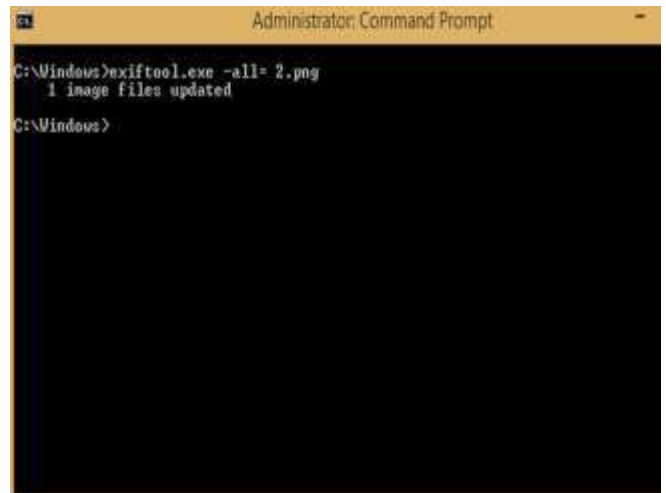


Figure 5.6: Erase EXIF Data using exiftool

Step 7: Next we blur and then deblur the image doing so will remove the camera fingerprint associated with the image [34].



Figure 5.7: Original Image Blurred



Figure 5.8: Original Image Deblurred



Step 8: Now click on Save for Web and reduce the quality of the image to at least 50 this should make the noise unrecognizable [35] [7]



Figure 5.9: Save for Web with Reduced Quality

6. OPERATIONAL MITIGATION AGAINST SENSOR NOISE CAMERA IDENTIFICATION

- USE A SEPARATE CAMERA FOR DIFFERENT PURPOSES. - USING A SEPARATE CAMERA IF YOU DON'T WANT ANY ATTRIBUTED LINKED BACK TO YOU IN THE FUTURE THEN YOU HAVE TO USE A SEPARATE CAMERA.
- Avoid using smartphones as a camera – As mention above already each sensor even if it is built for the same smartphone in the same production area each and every sensor is slightly different then each other which makes it unique for every smartphone.
- Use CyanogenMod if you must use a smartphone camera. - If you are to use a smartphone camera then use the open-source firmware CyanogenMod as preference. One nice tool to use if you are using a smartphone is Obscura Camera available here. In [39] the authors have used a standard camera without a cellular or Wi-Fi connection. - Next use a standard camera that doesn't have any cellular or WiFi connection.
- Leave no money trail between you and the camera you buy – Best way to buy a camera without linking it back to you is by making use

of anonymizing services such as TOR, VPN and the payment should be done using a cryptocurrency such as Monero.

- Don't do anything stupid! - Don't use your personal camera to click pictures that you want to post online. Use a separate camera as suggested above which is purchased using the recommended anonymizing service and payment method.
- Use metadata and EXIF sanitization software. - Use software such as EXIFtool to clear the metadata from the captured images before posting it online.
- Use the TOR browser to post the image anonymously. - If you care about your privacy online the use the TOR browser to post the photos online.
- A film camera can be used as an alternative – You can use a film camera instead of a smartphone or also a digital camera – If you are one of those people who are extremely paranoid then you can use a film camera to capture the photos and scan them with multiple scanners at multiple scanning centres.
- Wait before posting – Finally wait for a few days before posting the image online as this will make it difficult for anyone to link it back to you.
- Don't Cross Contaminate Aliases or your real identity by using your personal camera to post images online.

7. RESULT



Figure 7.1: Original Image

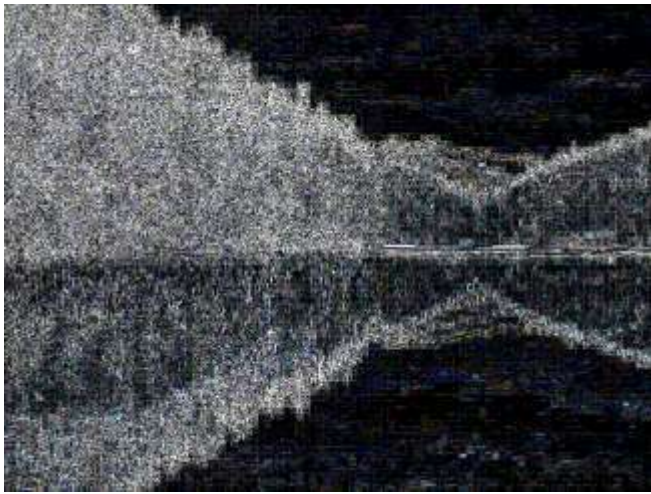


Figure 7.3: Noise Analysis after the use of Proposed Method

8. CONCLUSION

This paper proposes a new anti-forensic technique to counter sensor noise camera identification where in which we make use of image manipulation techniques such as Image resizing, Cropping, Removing Exit Metadata, Image Blurring and Deblurring to scrub the camera fingerprint from the photo-generated. In addition to this we also discuss some operational controls that can be used along with the proposed methodology in order to achieve defence in depth approach.

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FEATURES OF INVESTMENT ACTIVITY IN THE CONSTRUCTION FIELD OF UZBEKISTAN IN MODERN ECONOMIC CONDITIONS

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ABSTRACT

The present article discusses issues on the investment activity in the field of construction and analyzes its features in the modern economic conditions. The general assessment of the investment and construction activities state in modern economic conditions is provided. Alongside with this, the key trends for development and improvement of construction industry are determined.

KEYWORDS: *features, tendencies, investment activity, investments, construction, investor, capital, income.*

INTRODUCTION

Considering the nature of investment activity, it can be noted that its realization is preferable in those fields of activities, where there is a highest return. Construction is one of those industries that can bring a steady income for a long time. The application of the category "investment and construction activity" in Uzbekistan began relatively recently, namely, it became relevant when transiting to market conditions for conducting business activities and implementing it in the course of investment financing.

The investment construction activity can be considered from two positions. The first - as a field of economic activity associated with the expanded reproduction of fixed production and non-production assets. The second - as an independent system of

attracting and using material and financial resources for the preparation, organization and direct realization of the construction and reconstruction of real estate objects. [1]

The investor always plays a key role throughout the entire investment and construction process. He determines the direction of investment, makes a decision on volume and terms of investment, on the particular investment object, on the forms of investment, as well as attracts customers on the competitive base, works out contract terms, carries out financial and credit relations with all participants in the investment process. [2]

Investor's participation and his relations with other links in the investment and construction process is shown in the Fig.1.

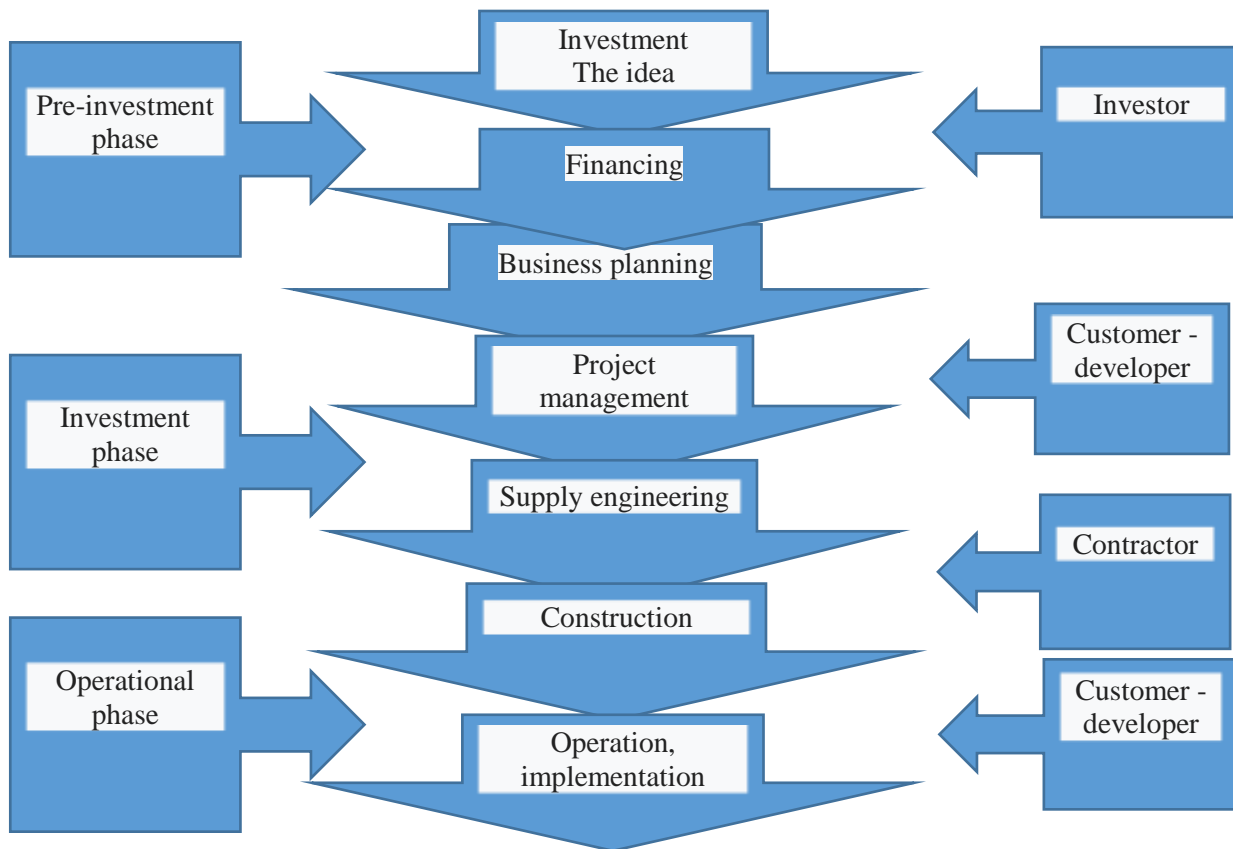


Fig.1. Investor participation in the investment and construction process

The main feature of investment and construction activity, which distinguishes it from other types of activities, is its final product - a real estate object. Real estate investments have significant features compared to

other types of long-term investments. [3] The features of investment activity in construction field are presented in the Table 1.



Table 1.
Features of investment activity in construction

№	Feature	Explanation
1	<i>High degree of dependence on the quality of management</i>	Compared to investment in securities, the return of real estate investment is extremely dependent on the effectiveness of real estate management.
2	<i>High degree of resilience to inflation</i>	Owing to this feature, real estate investments are considered to be a good solution to diversify the investment portfolio, as well as to obtain a favorable ratio of profitability and risk.
3	<i>Greater revenue stream stability</i>	High stability of the income stream from real estate ownership, compared with the cash flow of corporations, often at higher interest rates of return.
4	<i>Time factor</i>	Investing in construction takes a long time for obtaining the final object. Its creation includes not only the stage of building construction, but also the stage of preparation, approval of construction permits, various examinations, the stage of state acceptance of the finished object. The construction period for buildings often exceeds one year, reaching even several years; but by the service life of the building and structure, it is the most durable of all objects created by man.
5	<i>Increased risks</i>	Real estate and construction investments have greater risk. Among these risks there is a possibility of changes in the investing course due to the political situation in the country, economic conditions, natural disasters, emergencies. All of this may prevent the investor from obtaining a finished property or compensate for the costs incurred. Invested capital is exposed not only to standard risks and discount rates, but also to the risk associated with the human factor.
6	<i>High cost</i>	Investments in the construction of real estate are characterized by a number of various costs, such as proprietary, occupational, scientific and technical, which indicates their capital and knowledge intensity. In this regard, the implementation of investment construction activities requires the combination of efforts and capital of many business entities simultaneously.
7	<i>Relatively low liquidity</i>	Investments in construction are less liquid than in securities and other traditional financial assets. Low liquidity of real estate is exacerbated by the long period necessary for the implementation of the object on the market.
8	<i>State regulation of investment activity in construction</i>	As it known, any property that has been invested, as a rule, poses an increased technical, environmental or other danger to the person particularly and society as a whole. This circumstance necessitates the introduction of detailed state regulation of investment activity in construction. Therefore the characteristic feature of the real estate market is the presence of a special regulatory framework.

Such specific investment properties of real estate, undoubtedly, are taken into account by investors, as they allow to achieve the aims set by each of them - to receive income on capital and save invested funds. [4]



Table 2
Fixed capital investment growth dynamics
(in actual prices, billion sums)

	2012	2013	2014	2015	2016	2017	2018	January-December 2019
Republic of Uzbekistan	24455,3	30490,1	37646,2	44810,4	51232,0	72155,2	124231,3	189924,3
Republic of Karakalpakstan	1242,1	2415,0	3990,6	6021,2	3778,3	2822,0	6757,8	8434,6
regions:								
Andijan	1379,9	1462,3	1645,0	1956,5	2188,5	2986,0	4711,9	8183,7
Bukhara	2405,8	2998,7	3583,2	4075,9	5922,9	11613,4	9610,9	9867,0
Jizzakh	792,5	1128,5	1200,9	1304,9	1449,7	1788,2	3606,3	7919,3
Kashkadarya	3072,2	3667,8	4721,8	5894,7	7304,4	11175,3	16518,5	23525,3
Navoi	1688,0	1696,9	1754,1	1809,1	2963,2	3977,9	10579,5	17775,3
Namangan	917,3	1205,1	1807,5	2227,5	2824,5	3586,7	8158,1	12187,0
Samarkand	1586,0	2127,6	2540,4	3237,2	3623,5	4384,2	7061,4	9798,6
Surkhandarya	980,3	1371,0	1509,1	1843,6	2142,4	3551,0	7240,6	12232,4
Syrdarya	663,1	852,8	992,3	1083,3	1322,9	1628,0	2699,3	6129,2
Tashkent	2005,8	3195,2	4021,7	4428,1	4238,7	5938,4	11226,9	16935,1
Fergana	1505,8	2130,0	2295,3	2542,3	2643,6	2954,5	5539,1	9164,2
Khorezm	783,4	1256,9	1614,8	1531,5	1560,5	2175,9	3013,8	5566,8
Tashkent city	5433,1	4977,1	5969,5	6854,6	9268,9	13573,7	26435,7	41497,9

Source: www.stat.uz

The dynamics of the main indicators in the development of the field of investment and construction activities in Uzbekistan during the observed period was multidirectional, let us consider the changes that have occurred:

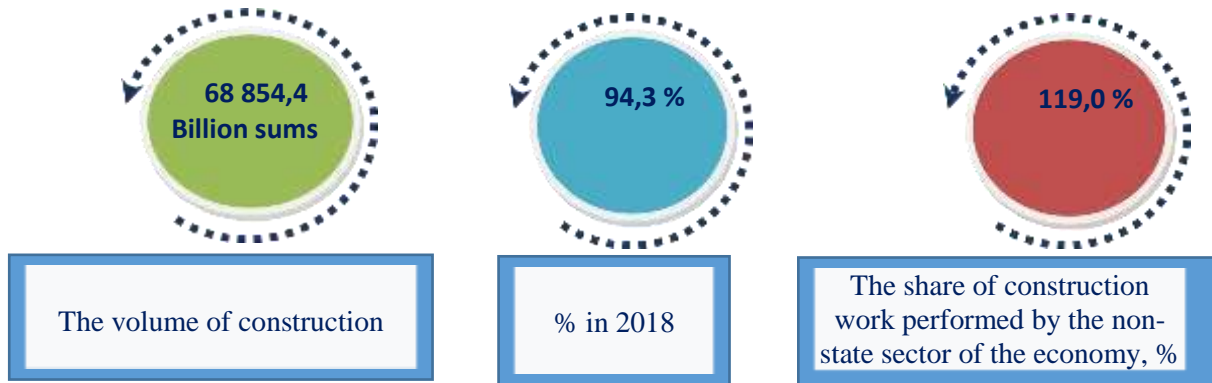
1. The increased demand for construction projects, the growth of real cash incomes of the population, as well as the increasing inflow of export foreign currency earnings – all of this led to a high level of investment activity, significant increase in construction, especially residential buildings, and, as a result, to an intensive growth of all main indicators of investment and construction activities.

2. In January-December 2019, the most of all investments in fixed assets - 52.5% - was spent in four regions of the republic, particularly in Tashkent - 21.8%,

in the Kashkadarya region - 12.4%, in the Navoi region - 9, 4% and in the Tashkent region - 8.9%.

3. High growth rates of disbursed investments in fixed capital were observed in the following regions: in the Jizzakh region - 195.2% (volume of investments in fixed capital - 7919.3 billion sums), the Syrdarya region - 194.3% (6129.2 billion sums), the Khorezm region - 167.1% (5566.8 billion sums), the Surkhandarya region - 148.8% (12232.4 billion sums), the Navoi region - 145.7% (17775.3 billion sums), Tashkent city - 142.5% (41497.9 billion sums), the Andijan region - 142.3% (8183.7 billion sums) and the Ferghana region - 140.1% (9164.2 billion sums).

4. In January-December 2019, construction work was completed for 68854.4 billion sums, and the growth rate made 119.0% compared to 2018.



5. In January-December 2019, high volumes of construction work were completed in the following regions: in Tashkent, the volume of construction work composed 15418.7 billion sums (a share of the total volume of construction work - 22.4%), respectively, in the Tashkent region - 4879, 7 billion sums (7.1%), in the Kashkadarya region - 4665.4 billion sums (6.8%), in the Bukhara region - 4334.6 billion sums (6.3%) and in the Samarkand region - 4096, 8 billion sums (6.0%).

CONCLUSION

Summarizing the above stated, it can be concluded that investment in the field of construction has a greater chance for obtaining a substantial profit. The investor can use the building at his discretion, expand his production, rent out or sell. Moreover, the cost of construction will almost always be lower than the market value of a similar object. A smaller initial investment volume is a greater indicator of their return.

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FROM THE HISTORY OF TRANSFORMATION PROCESSES OF IRRIGATION SYSTEM IN THE FERGHANA VALLEY DURING INDEPENDENT PERIOD

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ABSTRACT

The article analyzes the history of transformation processes in the water management system of the Ferghana Valley during the years of independence, the provision of modern equipment and facilities, protection of water resources, reclamation of irrigated lands, reconstruction, repair of hydraulic structures and increasing capital investment made as well.

KEY WORDS: *Ferghana Valley, irrigation, water shortage, land reclamation, modernization, transformation, credit, irrigation canal, reconstruction, hydraulic structures.*

INTRODUCTION

As we know, during the years of independence, the issues of rational use and protection of water resources in the republic, as well as in the Ferghana Valley, have been focused on as one of the priorities of state policy. Because, agriculture is one of the most important sectors of the economy, most lands are based on irrigated agriculture and land reclamation. More decrees and resolutions adopted by the President of the Republic of Uzbekistan in order to develop the industry and increase its efficiency, as well as the work carried out on their basis, are a clear proof of our opinion. For example, it should be noted that the Address of the President of the Republic of Uzbekistan to the Oliy Majlis on January 24, 2020 includes a number of important areas, such as bringing water management to a new level, the widespread introduction of energy-saving irrigation technologies in agriculture, automation of water resources control and accounting systems. tasks were assigned. In particular, the statement reads: “In 2020, we will introduce water-saving technologies on 44,000 hectares of land, or almost 4 times more than last year. For this purpose, 300 billion soums will be allocated from the state budget. It is also necessary to automate the management of water facilities, water control and

accounting systems. These issues should be reflected in the concept of water management development. Let the Cabinet of Ministers submit the draft concept for approval by April 1 of this year”[1].

RESEARCH METHODS

Also, during the years of independence, some laws have been developed and implemented in order to develop the system and legally guarantee it in the country. Therefore, these legal documents are also aimed at protecting irrigation facilities in the Ferghana Valley. In particular, the Law “On Water and Water Use”, adopted on May 6, 1993, is devoted to the rational use of water resources. In particular, Article 111 states: “The main and basin schedules for integrated water use and protection must be implemented to meet the future water needs of the population and the economy, as well as to protect water and prevent harmful effects of water. and other measures ”[2.p.45]. It is obviously say that during the current reform process, a special program for the development of the country has been developed, which is the basis for the successful solution of socio-economic problems, primarily to meet the needs and requirements of the next generation living in the country to maintain a balanced natural resources and environment creates.



RESULTS AND DISCUSSIONS

We should give more examples of this article. Besides, it should be noted that ensuring the legal effectiveness of the protection of water resources in many respects is the legal basis for this work, in particular, after the independence of Uzbekistan, this issue began to receive serious attention. In particular, great attention was paid to the creation of a legal framework for the protection of nature and water resources and the improvement of legislation in this area. Two direct articles of the Constitution of the Republic of Uzbekistan are devoted to this issue. For example, Article 50 of the Constitution states: "Citizens are obliged to treat the environment with care" [3.p.10] and Article 55 states: "Land, subsoil resources, water, flora and fauna and other natural resources are national wealth, they must be used wisely and they are under the protection of the state" [3.p.11]. Exactly in accordance with the Constitution, a number of laws and regulations have been developed. In particular, the laws "On water and water use" and "Nature protection" are directly aimed at the protection of nature and water resources. Therefore, the Law on Water and Water Use emphasizes the protection of water resources, and Chapter Nineteen directly addresses the use of water bodies for wastewater discharge, for example Article 73: "Permission to use water bodies for wastewater discharge in accordance with the legislation on the use of water bodies for the discharge of industrial, communal, sewage and other wastewater, as well as the state bodies of nature protection, water management sanitary control, the legislative bodies of the State Geology and Mineral Resources, agreed with the permission of the road can be built [2.p.39].

All fields are rising in the years which we investigate. During the years of independence in the Ferghana Valley, the development of irrigation and land reclamation and strengthening the financial support of the system has risen to the level of state policy. In particular, in accordance with the Resolution of the President of the Republic of Uzbekistan dated December 23, 2016 "On the Investment Program of the Republic of Uzbekistan for 2017" [4] in the system of the Ministry of Agriculture and Water Resources in 2017, 131.49 mln. It is planned to use financial and credit funds in the amount of 198.77 million US dollars for these projects this year. Capital investments in the amount of USD (109.5%) were directed and used. In particular, the expenditures for the development of the irrigation system consisted of the following stages. With the support of the World Bank, which has international powers and capabilities, the second phase of the project "Management of water resources in the Ferghana Valley" was implemented by the

President of the Republic on 16 September 2015. It is obvious that during the years of independence a number of important measures have been taken to modernize the irrigation system, to reconstruct irrigation facilities.

One of the special decrees is proclaimed in 2017. Also, President of Uzbekistan Sh. Mirziyoyev on September 16, 2017 "On the management of water resources in the Ferghana Valley". Resolution No. PP-3282 "On measures to implement the project. Phase 2 with the participation of the World Bank". On 30.06.2017, the Board of Directors of the World Bank approved a loan to Uzbekistan in the amount of 144.9 million US dollars for a period of 25 years with a grace period of 5 years [5]. At the same time, an EU grant of \$ 16.4 million is being used to provide additional funding for the project. The total cost of the project is 228.2 million US dollars, of which 83.3 million US dollars - the contribution of Uzbekistan (36.9 million US dollars - in the form of tax and customs benefits). The project will be implemented in Andijan, Namangan and Ferghana regions in 2017-2024. The Ministry of Agriculture and Water Resources has been appointed as the executive body responsible for project implementation, targeted and effective use of loans and achievement of all targets. Management and coordination of the project implementation is entrusted to the Center for Implementation of Investment Projects in Agriculture and Water Resources.

In 2018, 35 water supply systems with a total length of 680 km were created under the project of the Swiss Cooperation Office "Water supply and sanitation in rural areas of Uzbekistan". Residents of Ferghana, Andizhan and Namangan regions have been provided with quality drinking water for 14 years. During this period, as a result of small-scale project activities, 160,000 people were provided with quality drinking water in 24 villages of Ferghana, Andizhan, Namangan and Syrdarya regions, and 687 km of water supply systems were built [6].

The draft State Program on the implementation of the Action Strategy for the five priority areas of development of the Republic of Uzbekistan in 2017-2021 in the "Year of Science, Enlightenment and Digital Economy" with the participation of the general public in order to consistently continue the comprehensive reforms in the interests of the people prepared with detailed discussion. In the course of the discussions, our people, civil society institutions were active, more than a thousand live conversations were organized with them on TV and radio channels, the proposals and recommendations of our citizens were analyzed in depth with the participation of relevant experts and expert groups. On this basis, the Cabinet of Ministers



and the Central Bank of the Republic of Uzbekistan were instructed to ensure the development of concepts for the development of water resources, a program of practical measures for the widespread introduction of digital technologies in agriculture. At the same time, the Cabinet of Ministers of the Republic of Uzbekistan together with the relevant ministries and departments was instructed to ensure the timely implementation of tasks in this area, including the development of draft laws “On water supply and sewerage services”.

Among the ongoing reforms are to ensure the effectiveness of work in the field of water management in the Ferghana Valley, expand and strengthen international relations in the field of water management, timely and quality development of the concept of water management in 2020-2030, implementation of promising projects in the water sector. work on construction, reconstruction and modernization of water facilities by expanding the attraction of investments, loans and grants it is envisaged that the ahas will also be carried out gradually in the future.

CONCLUSION

In conclusion, significant work and important measures have been taken to modernize the irrigation system in the Ferghana Valley. In order to modernize the system, a large amount of capital was spent on it, and this figure has been growing from year to year. As a result, irrigation and land reclamation areas have been provided with modern equipment. During the years of independence, a number of practical measures have been taken to further improve the water supply of arable lands in the valley, the efficient use of land and water resources, the development of the sector, increasing the productivity of agricultural crops.

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THE HISTORY OF CRIMINAL PROCEEDINGS IN UZBEKISTAN

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ABSTRACT

The article covers the development of the institution of the provision of the witness's rights and lawful interests, the usual problems arising under the current legislation. In recent history of Uzbekistan there were several legal monuments which regulating relations in the criminal justice system, they play a special role in the administration of justice in the country. Their historical significance has served to promote public awareness of world-class procedural and legal institutions and the formation of perceptions in the field of justice and criminal practice as well as law enforcement practice.

The existing legal sources in criminal law were the laws prepared and put into practice by the Bolshevik political ideology that came to the cause of the government coup in the Russian Empire in the 17th century. In general, during the Soviet period, criminal procedure codes were received and practiced four times in the area of Uzbekistan. The author reveals the criminal procedure aspects that directly influence the protection of the witness's rights and lawful interests.

KEY WORDS: *history, witness, rights and duties, status, institute, features, practice, national and foreign experience, criminal process, formation, analysis.*

INTRODUCTION

In recent history of Uzbekistan there are several legal monuments which regulating relations in the criminal justice system, they play a special role in the administration of justice in the country. The existing legal sources in criminal law were the laws prepared and put into practice by the Bolshevik political ideology that came to the cause of the government coup in the Russian Empire in the 17th century. In general, during the Soviet period, criminal procedure codes were received and practiced four times in the area of Uzbekistan.

The first of these laws in our country is undoubtedly the CPC of RSFSR adopted in 1922. The reason for this is that after the government coup in the Russian Empire in 1917, there was no legislation in the Soviet Union that could regulate criminal relations. X. N. Bahronov writes that the Soviets first tried to fill this section on the basis of several decrees. However, it was impossible to regulate all the issues that arise, break and end in criminal cases through decrees. For that reason, during the early Soviet period, the Court's statutory

norms of the Russian Empire were used which did not contradict their ideology. A. V. Smirnov writes: The Russian Empire's Court Charter and the CPC codes of the RSFSR are based on a procedural idea in fact the code is a "colorless shadow" of the charter. (Smirnov A. V. 2001) This practice continued until the introduction of the RSFSR CPC in 1922, developed by the Soviets for all regions of the country.

METHODS

The first Soviet CPS was adopted on May 25, 1922. In Russian scientist G. Grigoryev's opinion, the first Soviet CPC in 1922 contained many provisions in the Criminal Code in 1864, as well as the status, rights and obligations of the witness. (Grigoriev F. G. 2008)

According to the conceptual context of this Code, the witness was considered one of the main evidence in criminal proceedings (Clause 62 CPC) (The Code...1922). Like the Court's statute, the RSFSR CPC in 1922 did not in itself formulate norms concerning the understanding of the participants of the criminal procedure, their procedural status, their



rights and obligations. Despite this, some procedural norms in the Code are relevant to the status of the witness. In particular, according to Clause 64 of the CPC, the procedural status of the witness could be based on two aspects. The first is that any person has the necessary information to clarify the circumstances of the criminal case; the second was related to the fact that the person was summoned to formally testify in court or in pretrial detention facilities. Experts could also be summoned for questioning on the conclusions they have made on the basis of their findings (Clause 67 of the CPC). Therefore, refuse to testify on the call of a judge or investigator with knowledge of a criminal case resulted in certain procedural sanctions against the individual (Clause 66 CPC). Based on these rules, an inquiry officer, investigator or judge may have been summoned for disclosure of information related to the case. However, in practice, it was sometimes possible for a person who was informed about the circumstances of the case to appear before the inquiry officer, investigator, prosecutor, or judge and disclose the information he knew.

RESULTS AND DISCUSSIONS

The CPC crime process of the RSFSR in 1922 set the limit for persons who could be present as witness, and the defense of the accused and people with mental or physical disabilities were exempted from such obligation. It is recommended that an expert diagnoses such a physical or mental defect (Clause 65).

As noted above, in the RSFSR CPC in 1922 the rights and obligations of the witness and other participants did not specifically regulate in the proceedings. However, some rights of the witness and responsibilities were reflected in the rules governing the interrogation process. For instance, based on the Clause 167 of the CPC, the witness was obliged not to testify, but to report all information known to the case to the inquiry officer, investigator and the court without distraction.

At the same time, the witness will be able to freely testify his testimony (Clause 168), to testify in his native language and to use the services of an interpreter, and for deaf witnesses to use the assistance of an expert who understands the sign (Clause 170), to familiarize himself (Clause 171), to familiarize himself with the materials of the criminal case concerning the circumstances under which the forensic examiner must give his opinion (Clause 174), to cover the expenses incurred by the inquiry officer, investigator and the court on the summons; the right to demand compensation for work (Clause 69).

Thus, the procedural rules were formed which regulating the witness's presence in the RSFSR CPC in 1922, existed in its territory until the formation of

the Uzbek SSR in 1924. Based on the feedback from this institution, if we clarify the status, rights and responsibilities of the witness, witness is-

- The person who has the information necessary to establish the circumstances of the criminal case;
- The official summons sent by the person conducting the criminal case turns the witness into a criminal proceeding;
- Has certain rights and obligations as a participant of criminal proceedings;
- Limits on the status of the witness.

The peculiarities of the witness doctrine can be seen in the 1926 CPC which is the first historical procedural source in Uzbekistan. "The Criminal Procedure Code of Uzbekistan which adopted in the USSR in 1926 represents an important milestone in the judicial policy pursued by the Soviets in our country. After all, this code is the first written source in the history of our country that has regulated the first national criminal-procedural relationship in the criminal field." (Mukhitdinov F., Islamov B. 2011). The CPC of Uzbekistan in 1926 is not only important as the first historical legal source to regulate criminal justice in the country, but also to a significant contribution to the development of the institution of witness.

For the first time in the CPC of the Uzbek Soviet Socialist Republic in 1926 the concept of the participants of criminal proceedings and the use of positive legal techniques to regulate their rights and obligations in separate norms were used. However, the witness was not recognized as a participant in the criminal proceeding but was seen as a source of evidence. In this section of the CPC "On Evidence" it was noted that the testimony of the witness is the source of evidence (Code of Criminal ... 1927).

The status of the witness is also based on this notion, for this, the person must:

- Availability of relevant information on the circumstances of the criminal case;
- The time and place of arrival of the person conducting the criminal case on the summons;
- To be immune from testifying.

Consequently, the necessary attribute of witness status is that the person has certain information about the circumstances of the criminal case. This information may relate to the crime or the accused and the victim. This information is put in the line of evidence established in the criminal case.

Witness status is the time of condition and characteristics of the person appearing as a criminal entity in the criminal procedure. In criminal proceedings, the witness often enters a procedural relationship based on the summons of the prosecution. It is precisely the information that he or



she possesses is the main objective for the person to acquire witness status.

However, criminal procedure law limits individuals with specific information about the circumstances of the case to be present as witnesses in criminal proceedings. These restrictions apply to the CPC of Uzbekistan in 1926, which relates to:

- Defense of the accused (defendant);
- People with physical or mental disabilities (Article 59 of the CPC).

The fact that the defense is protected from the obligation to be a witness is historic. That is why there is almost no debate about this.

Witness immunity granted to individuals with physical or mental disabilities recognized by the Criminal Procedure Code can also be found in virtually all historical and modern laws. Its main point is that people with a physical disability, such as deaf, blind, visually impaired, old and other persons with physical disabilities, cannot be summoned as witnesses in a criminal case for situations in which certain physical characteristics are required. Individuals with mental disorders may not be able to obtain a witness status because of their legal inability.

The CPC in 1926 did not show in particular the rights and obligations of the participants of the criminal proceedings, as well as the witnesses as previous ones. However, information on the witness's procedural rights and responsibilities can be found in the rules governing the institution. Specifically, Chapter 13 of the CPC under review regulates the rules for questioning witnesses and experts. Its provisions contain some provisions concerning the rights and obligations of the witness. In particular, after the witness receives the summons, he shall appear before the inquiry officer, investigator or court (Clause 123), give true testimony regarding the facts known to him (Clause 163 and 282), refuse to give testimony, and answer questions raised by the parties. (Clause 224)

Moreover, the witness has procedural rights, including the assistance of an interpreter or gossip specialist who knows the language of the criminal case or who is physically defective (deaf and dumb), see the official record of the investigative action, the right to require the appropriate modifications and additions to the testimony contained therein, to make manual statements (Clause 166).

One of the cases envisaged by the CPC of Uzbekistan in 1926 was the strict limits of the testimony, which established that the accuracy of the testimony and the accuracy of the witness information was determined. According to Article 164 of the CPC, the witness could be interrogated only in the circumstances surrounding the criminal case and in the disclosure of the identity of the accused.

Thus, the first criminal procedure of Uzbekistan in 1926 during the Soviet period did not substantially alter the issues related to the procedural status of the witness. The procedural rules, in fact, the institution of testimony were virtually indistinguishable from the principles of the Judicial Charter of the Russian Empire of 1864 relating to this matter and the regulation of the Court. The main difference was due to the ideological approach to criminal-procedural relations. In particular, the Soviets considered the religious doctrine to be outdated and therefore narrowed the rules to restrict the testimony of witnesses based on their religious, national, or service affiliation.

These issues were clarified in the 1929 CPC's second written source, which regulates criminal-procedural relations in Uzbekistan. In general, researchers had a negative attitude towards the CPC of Uzbekistan in 1929, which they believe was based on the reduction of criminal procedural guarantees. For example, G. A. Abdumazhidov suggested this kind of idea. He wrote that the CPC in 1926 of the Uzbek SSR had some significant theoretical shortcomings, but instead of reducing them, the CPC in 1929 substantially increased (Abdumazhidov F.A. 1974)

However, there are points that do not agree with such an idea. Including H. N. Bakhronov noted that while the CPC in 1929 did not solve all the issues arising from the legal regulation of procedural relations, but it should say that it improved certain procedural rules and regulations in 1926 and regulated some of the structural elements in a more logical manner (Bakhronov H. N. 2007).

On the basis of these scientific considerations, if we analyze the rules governing the witness's proceedings in the CPC in 1929, this CPC has also taken the lead in the evidence system, so the procedural status of the witness remains at the object of evidence. Article 22 of the CPC provides the notion of evidence, according to which individual or cumulative factual information confirming or denying the facts of a crime is evidence. Accordingly, the testimony of the witness, among other evidence, constitutes an important source of evidence. The status of the witness was also linked to the notion of the status of the person who had the information confirming or denying the facts of the criminal case.

That is why this CPC stipulates that the witness may be interrogated only on the facts known to him and on the identity of the perpetrator (Clause 26). Interrogation was mainly carried out at the crime scene, and sometimes witnesses could be summoned to testify to the inquiry officer, investigator or court (Clause 23 of the CPC).

At the same time, the CPC in 1929 established a strict range of people who could not be present as



witnesses in the criminal case. Article 24 of the Penal Code includes such individuals - people with physical or mental disabilities, children under ten years of age. However, the involvement of children under the age of ten as witnesses is permitted only when necessary. Although the procedural law does not disclose the content of "necessary circumstances", individuals of this age could be questioned, mainly because they were witnesses of the crime and could not otherwise prove the facts of the crime (Clause 24, Part 2).

An essential aspect of this historical source regarding the questioning of the witness was that it set out the rules enforcing the principle of controversy during the trial. According to Article 116 of the CPC, witnesses could initially be questioned by the party that invited them.

Thus, the Criminal Procedure Code in 1929, which exists in the history of Uzbekistan's judicial practice, attempted to link the nature of the procedural task (that is, an important source of evidence) to witnesses in criminal proceedings. Undoubtedly, when the present Code was in effect the "queen" of proof was officially recognized by the defendant as his "confession" (Vishinsky A.Ya. 1950). Therefore, the witness was often viewed as a regular evidence in the criminal case, rather than as a participant in the proceeding with specific information about the crime. The Code specifies neither the rights nor obligations of the witness.

An important law in the history of criminal justice in our country is the Criminal Procedure Code of the Uzbek SSR, adopted in 1959.

According to I.L.Petrukhin's opinion exactly this code is.... (Petrukhin I.L)

H.N. Bahronov also wrote that "the new and post-Soviet CPJ legislation adopted in 1959 differs from previous laws by establishing prosecutorial oversight of criminal-procedural relations and only the judicial review and resolution of criminal cases." (Bakhronov H. N. 2007)

At the same time, the analyzed procedural law, in contrast to its previous ones, could be seen as attempting to construct the procedural relationships regulated by certain principles. One of them is the Article 14 of the CPC, which states that "the court, prosecutor, investigator and inquiry officer shall take all measures prescribed by law for comprehensive, complete and impartial investigation of a criminal case, both in respect of the accused and his acquittal, it must also determine the aggravating and mitigating circumstance" (Criminal Procedure ... (1978).

For the first time in the procedural and legal sphere of Uzbekistan specific aspects of the procedural status of the witness were laid on the basis of the same procedure. Articles 53-55 of the CPC in 1959 were devoted to the establishment of the institution of witness. Specifically, part 53 of Article

53 clarifies the notion of a witness, which states that a witness is "any person who is aware of any facts of a criminal case or of the personal characteristics of the accused."

This kind of person to have witness status in criminal proceedings, he had to be summoned by the inquiry officer, investigator, procurator or the court to testify.

In this CPC the issue of witness rights was left open and its obligations were emphasized. According to Article 54 of the CPC, the witness is "obliged to give testimony about the facts that are known to him in the case and facts that characterize the accused." Therefore, it is an important social duty to provide testimony by a person with specific knowledge of the case, and also to present only the facts of crime in their testimony. Therefore, the witness was not obliged to give up his duty and to give false testimony. These obligations were subject to the threat of liability provided by Articles 161 and 162 of the Criminal Code (1982).

The witness was also obliged to appear at the designated time by the call of the investigator. Article 134 of the CPC specifies the procedure for forcing a witness to appear without summons. According to this, a police officer forcing a witness to evade his arrest was ordered by police to order him

Following people were free from obligations above:

- Individuals who are unable to properly recall the facts and events that are relevant to the criminal case due to their physical or mental illness and are unable to give correct testimonies;

- Defense of the accused - on the circumstances of the case learned in connection with his defense.

Unlike previous criminal and procedural laws, the CPC in 1929 of Uzbekistan has narrowed the scope of witness immunity. The close relatives of the accused (the suspect, the defendant), the clergy and the judges (in relation to the secret of the consultation) were not infected by the witness's immunity.

Some new rules could also be seen in the witness interrogation procedure. According to Article 135 of the CPC, the witness could verbalize all the facts known to him, and then, if necessary, the investigator could ask him questions.

All testimony provided by the witness during the interrogation had to be recorded verbatim, whenever possible. Sometimes, at the request of the witness, he could write down his own testimony. The investigator could familiarize himself with the witness's own testimony, ask questions, and the answers could be written by the witness. The protocol was signed by witnesses, investigators and people



present during the interrogation (Clause 136 of the Criminal Code).

The Code also specifies the rules for interrogating juvenile witnesses, and the teacher, at the discretion of the investigator, may participate in the interrogation of witnesses between the ages of 14 and 16. In minor cases, close relatives of the minor witness could also be summoned during the interrogation. Persons participating in the interrogation of a minor witness had the right to ask questions, with the permission of the investigator (Clause 137 of the CPC).

The rules of questioning witnesses during the trial were of a particular nature. The witness was required to speak freely in court, and the trial participants were asked to clarify questions, and if the witness was summoned at the request of one of the participants, that person would first question the witness (Clause 263 of the CPC).

At the same time, if the witness's testimony relates to information that is difficult to remember, the criminal procedure law permits the use of paperwork (Clause 264 of the CPC), if there is a conflict between the testimony of the witness and the testimony in the preliminary investigation, and the witness has the opportunity to appear. In the event of his failure to appear in court, his testimony was read out (Clause 266 of the Criminal Code). At this stage the criminal procedure of the witness was coming to an end. Because the criminal procedure legislation of the Soviet period restricts the participation of witnesses at other stages of legal proceedings, the fate of the case was decided only in the light of the collected evidence and the written testimony of the witness.

CONCLUSION

Thus, a recent study of the characteristics of the institution of witnesses in criminal proceedings gives us the following conclusions:

- Witness - a person with specific knowledge of criminal cases;
- The witness may be involved in the criminal case on the basis of summon or inquiry of the inquiry officer, investigator or the court;
- The witness's testimony issued by the prosecution is an important object of evidence;
- The testimony of the witness demonstrates his / her ability to understand subjectively the circumstances surrounding the criminal case;
- However, the witness is recognized as an important participant in every criminal case;
- The testimony of the witness is therefore evaluated by the court that decides the case;
- There are two important identities of the witness, one of which is his or her identity and the other is information he / she has on the case;

- Therefore, one of these cases may be the basis for establishing a witness to a criminal trial.

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ENHANCING ACCELERATED NATIONAL DEVELOPMENT THROUGH VOCATIONAL AND TECHNICAL EDUCATION IN TERTIARY INSTITUTION

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ABSTRACT

Vocational and technical education gives individuals the skills to live, learn and work as productive citizens in a global society. The need for concerted education that can produce self-reliant, innovative and entrepreneurial citizens. This paper examined the need for Vocational and Technical Education for self reliance and national development in Nigeria and achieving accelerated national development through Vocational and Technical Education. This paper conceptualizes and highlights the importance of Vocational and Technical Education as a programme that provides students with proficiency through which graduates can be self reliant leading to effective utilization of natural resources and hence accelerating national development and productivity. Therefore, vocational and technical Education becomes imperative in Nigeria following current trend of unemployment among youths who would always rely on government for provision of employment. The paper submits among others that acquisition of vocational skills is a tool for shaping individuals to be productive. It was recommended that graduates of various institutions in Nigeria should be encouraged to acquire vocational skills that can lead to improvement in productivity thereby enhancing accelerated national development.

KEYWORDS: *National Development, Vocational and Technical Education.*

INTRODUCTION

Nigeria is one of the developing countries that are burdened with lots of challenges ranging from unemployment, poverty, youth restiveness and population explosion. Higher institutions graduates thousands of alumnae annually but the available jobs remain insufficient to meet the needs of jobseekers. With the present level of unemployment, there is the need for shifting away from the general education that encourages mere acquisition of certificates to skill-based education which centers on what one can do and

the ability to apply requisite skill in real work environment.

The objective of national development is to ensure that lives of the populace gets better within the framework of emergent economy and an emphasis on the wellbeing of the community as a whole. Graduates from most of the tertiary institutions are not educated in anyway as applicants abound our streets and roads that do not fit into any employment. The situation of unemployment in Nigeria is indeed alarming. This is owing to the fact that, thousands of unemployable youths are roaming the streets seeking government



enhanced jobs, while the higher institutions keep producing graduates on yearly bases, not compatible with new jobs or vacancies to absorb these new job seekers (Nwaigburu & Eneogwe, 2013)

The reason for this deplorable development in the nation's educational problem may not be farfetched. The educational system lacks entrepreneurial competencies also the curricula is not competency-base; and as a result of these, many students lack saleable skills to stimulate self-reliance. This implies that something has to be done urgently in relation to the system of education (Okoye & Okwelle, 2017).

Education is recognized as a vital tool for transforming and empowering the populace. The education sector has responsibility for producing and supplying the personnel required to drive and enhance national development. The goals of self-reliance, employment generation, poverty reduction, and value reorientation can be effectively pursued, attained, and sustained through an efficient and functional education system. Before now, the education system in Nigeria emphasizes theoretical knowledge at the expense of technical and vocational education which is more relevant and practice oriented.

For a developing country like Nigeria to be economically self-reliant, she must necessarily diversify her economy as well as encourage the youth to embrace self-employment through appropriate favourable policy environment that would facilitate skills acquisition, entrepreneurship, and self-reliance. The place of skill acquisition cannot be overemphasized in the rapid development of other sectors of the economy (Iroegbu, 2017). Vocational and Technical Education (VTE) can be described as an education that prepares individuals to be able to work in a trade or a craft as a technician. Vocational education is sometimes referred to as career education or technical education. The primary purpose of Vocational Education is to prepare citizens for employment in recognized occupations. Vocational and technical education is any form of education that provides the skills, knowledge and attitudes necessary for effective employment in specific occupations. Vocational Education assumes that a choice of an occupation has been made and that appropriate training is necessary for effective employment in an occupation or vocation. The central process of Vocational Education is to get people into jobs requiring specialized training.

Bawa (2016) stated that the term national development is very comprehensive. It includes all

aspects of the life of an individual and the nation. National development is a process of reconstruction and development in various dimensions of a nation and development of individuals. It includes full-growth and expansion of our industries, agriculture, and education, social, religious and cultural institutions. Thus, national development implies development of a nation as a whole. It can be best defined as the all-round and balanced development of different aspects and facets of the nation viz. political, economic, social, cultural, scientific and material. National development is the ability of country to improve the social welfare of the people by providing social facilities, good education, medical care, infrastructure (Sivachitappa, 2017).

It could therefore be deduced from the aims and objectives of the education policy that vocational and technical education prepares youths for employment in industries, commerce and enterprises by exposing them to experiences that provides the manipulative, cognitive and attitudinal skills that make them qualify for it. This was collaborated by Ayeni and Kolawole (2016) asserts that an untrained labour (individual) will not be able to perform beyond his knowledge and cannot harness the resources derivable from the land effectively. An entrepreneur also on the other hand cannot record reasonable productivity if he cannot derived resources effectively and manage it. All this and more is what vocational and technical Education tends to offer.

Except for the primary school levels, each level of education is expected to give the graduates the foundation and vocational skills for employment. At the secondary school level, science and technology education is aimed at developing the capacity and interest of students to live effectively in our modern age of science and technology. At the tertiary level, it is about skill acquisition and the use of the skill in the society for the benefit of everyone. It is therefore the intention of this paper to emphasize that vocational and technical education helps in employment generation, improve productivity and subsequently improve the growth of the economy.

The arrangement of this discourse shall adopt a comprehensive approach which includes to highlight vocational and Technical Education as a programme that provides students with skills and proficiency for self-reliant, examine the impact of vocational education in enhancing national development in Nigeria and draw attention to the challenges of Vocational Education in Nigeria. The study made use of the ethnography type of qualitative research. The researchers have been a



participant observer in the vocational education setting for years in Nigeria to understand the goals, cultures, challenges of the area under discussion. The study also involves the review of current situation especially existing in vocational education and how it relates to national development. The researchers made use of library and the internet for the secondary data collected. The findings were discussed based on emerging issues.

CONCEPT OF VOCATIONAL AND TECHNICAL EDUCATION AND NATIONAL DEVELOPMENT

In Nigeria, Vocational education had a slow start and development than other forms of education. This was partly because the voluntary agencies which pioneered Western education were unable to increase or popularized vocational education on the same scale as literary or liberal education since the former is much more expensive in terms of staffing and equipment. In the pre-colonial Nigeria, economic resources depended largely on agriculture and the bulk of the population was engaged in farming. However, there was a form of vocational training in traditional society which was largely run on the apprenticeship system at that time. The children were not trained by their parents but by relatives, master-craftsmen in specified vocations in order to ensure discipline and concentration (Fafunwa, 1974).

Organized vocational education started with the establishment of training course in some departments. In 1932, the Yaba Higher College was established specifically for engineering course for post secondary schools leavers. The Railway Training Institute and the U.A.C. Training school were established in 1954. Other vocational Institutions included the Hope Waddell Institute, Calabar, Women Training Centre, Idi Aba, Abeokuta. Trade Centres were established in the old Western Region to cater for the products of the Secondary Modern Schools. Shortly after the independence in October 1960, Agricultural Science was introduced to secondary schools (Osuala, 2004). Formal, recognition was given to Vocational Education when the University of Nigeria, Nsukka was established in 1960 with the inclusion of the Department of Vocational Teacher Education. The conscious efforts of that department in projecting the image of Vocational Education led to the prominence given to Vocational Education in Nigeria (Osuala, 2004).

Akaninwor (2004) stated that vocational education is a type of education or training designed for

preparing the individual learner to earn a living (to be self-reliant). Vocational Education may be regarded as that aspect of the total education process that focuses on getting people ready and keeping them ready for the types of services needed by the society. Its function is to provide knowledge, develop skills and inculcate the attitudes that are necessary for entry and progress in an occupation. Okorie (2001) asserts that vocational and technical education is an educational process involving

the acquisition of practical skills, attitude understanding and knowledge relating to occupations in various sectors of economic and social life. Vocational Education is usually viewed as consisting of these major areas –They are Agricultural Education, Business Education which is also an umbrella to Secretarial or Office Education, Accounting Education, Computer Education, Distributive/ Marketing Education. Another area is the Industrial and Technology which has Electrical Education, Mechanical Education, Building Education, Woodwork Education and Metal work Education. Others are Home Economics and Fine and Applied Arts.

Vocational and Technical Education plays a major role in promoting community and national development. It facilitates the acquisition of applied skills and basic scientific knowledge. It is a planned programme of course and learning experiences that begin with the exploration of career options, supports basic, academic and life skills, and enables the achievement of high academic standards, leadership, preparation for industry and continuing education (Ozoemena, 2013). Vocational and technical education is “any form of education whose primary purpose is to improve persons for employment in recognised occupations (Oguejiofor & Ezeabasili, 2014). According to the National Policy on Education (2013) the goal of technical and vocational education includes the provision of trained manpower in the applied sciences, technology and business particularly at craft, advance craft and technical levels and to give training and impart the necessary skill to individual who shall be self-reliant economically among others.

Vocational technical education can also be defined as an educational training which comprehends knowledge, skills, competencies, structural activities, abilities, capabilities and all other structural experiences acquired through formal, on-the-job or off-the job which is capable of enhancing recipients opportunity for securing jobs in various sector of the economy or



even enabling the person to be self-dependent by being a job creator (Masaruf Magaji 2015). For vocational education to be self-reliant and productive, it needs not be operated in a vacuum. It has to be hooked unto factors that will help learners and all stakeholders in vocational technical education to be practical and not only theoretical in their approach to making vocational technical education meaningful and life-long.

ACHIEVING ACCELERATED NATIONAL DEVELOPMENT THROUGH VOCATIONAL AND TECHNICAL EDUCATION

Education is an investment in the acquisition of skills and knowledge which will increase earnings as well as provide other long-term benefits. The importance of vocational and technical education in transforming Nigerian economy cannot be over-emphasized. Technical and vocational education adequately prepares the individual in skills, techniques, knowledge and attitudes for effective employment in the world of work place. In Nigeria, full participation in the economic activities requires vocational and technical education at all levels of our educational system, which will equip the populace with different skills and abilities and give an equal opportunity to all and sundry to prepare for work.

Vocational and Technical Education (VTE) systems play a crucial role in the social and economic development of a nation. Owing to their dynamic nature, they are continuously subject to the forces driving change in the schools, industry and society. Mechanized farming requires technical skills that could be obtained in technical and vocational schools. The real tests of success of VTE are the employability of the graduates, personal development, opportunities for further education and career development, public acceptance and image. Ultimately, the effectiveness and responsiveness of a VTE system would be measured by its impact on the social and economic development of the nation Masaruf Magaji 2015.

Vocational and Technical Education is a programme that provides students with skills and proficiency for self-reliant. The programme help to solve the problems of unemployment and reduces the number of people who depend on government for job. When the youths and adults are trained to acquire the necessary skills, it would enable them to be self-reliant in different areas. Vocational and technical education is always serving as a motivating force in individuals to

work for the nation because it stimulates technological and industrial development through the production of competent and honest workers who are capable of utilizing the abundant natural and human resources available in a country for economy and industrial growth and development. Through vocational and technical education, local technology can be developed by indigenous technicians and technologists. These relevant skills can be used to solve peculiar problems of the given society. Therefore, it will take the ingenuity of local artisans, craftsmen, technicians and technologists to design and fabricate tools, equipment and simple or complex machines to solve local problems. This eventually will save the nation billions of Naira or Dollars in foreign currency that would have been used in importing machines.

Vocational and technical education is needed in every aspect of our natural life. The problem of juvenile delinquency and crime can be reduced if the youths are given the necessary vocational training that will keep them busy. Ukuma, Tiough and Amenger (2016) opined that strategizing vocational and technical education would bring about new methods of instructions, new approaches, materials and development: it would also increase the rate of production of goods and services in our industries companies and institutions of learning, occupational needs are all indicators of globally dynamic technological progress.

Vocational education acts as a means of reducing social vices in the sense that those who graduates from business education never depend on white collar job only. Rather they go into business and ensure that they earn a living. Also the magnitude of social vices could be reduced through functional business education, which should be integrated into school curriculum right from primary school to enable the students to develop vocational skills that will make them to be self-employed even if they find it difficult to proceed to higher level (Nwogu & Oguejiofor, 2016).

CHALLENGES OF VOCATIONAL EDUCATION

There are many challenges facing vocational and technical education in Nigeria. Titilayo (2002) stated that Technical and vocational education in Nigeria today is in shambles. The system is creeping to a point that, if nothing is done, it may collapse. This accounts for why technical and vocational education as



it is in Nigeria today remains one of the country's problems of development.

Many people do not know that vocational and technical education is the only branch of education that can provide gainful and immediate employment to graduates, and that liberal arts education only makes graduates to be job seekers. This is due to erroneous belief that the course is offered to the never-do-well members of the society and it has greatly affected the interest of students in both secondary and tertiary schools towards vocational and technical education (Ukuma & Deke 2010).

Oni (2006) was of the view that Nigerians need to create a new approach for the concept of technical and vocational education and its purpose to the society. This is because technical and vocational education, for some decades now has been perceived to mean the education for the mentally retarded, physically handicapped and socially maladjusted students. It is regrettable that many Nigerians still believe that technical and vocational education is for students with low intelligence and dropouts from formal school system.

Vocational and technical education is expensive as it is capital intensive. Funding is a serious problem affecting Vocational Education. Where there is inadequate funding it is virtually difficult for vocational education to meet up with societal expectations. Ukuma and Deke (2010) argued that, vocational and technical education cannot be effectively and efficiently repositioned for sustainable national development, unless 26% (percent) of the Federal Republic of Nigeria annual budget is allocated for the upliftment of education sector and out of the 26% (percent) of the annual budget, 18% (percent) should be allocated to vocational and technical education subsector to enhance better performance and higher productivity of the Nigerian economy so as to meet global challenges. If vocational and technical education is not positioned, no meaningful development can take place in Nigeria.

Vocational institutions are inadequately equipped with laboratories/workshops, which house the tools, machines, and equipment required for the training of students, are hardly available and the available ones are obsolete. This is why many vocational and technical education teachers resort to theoretical teaching. Where few functioning equipment or machines are available, students are divided into groups. This system is not effective, as many students do not have access to

such equipment for practice as much as they want. Robert (1996) also observed that classrooms and desks, workshops, laboratories, libraries are inadequate for effective teaching and learning. Tools and Equipment necessary for imparting knowledge are inadequate. The ones available are obsolete. Vocational Education cannot achieve much in producing quality skilled human resources when facilities necessary for the training are inadequate.

Another problem of vocational and technical education is the use of untrained teachers. If subjects are taught by unqualified teachers skills acquisition becomes a problem as graduates are half baked. Uwaifor (2009) stated that most schools lack qualified personnel who can teach the vocational subjects, as a result of this, the products of some schools are half backed and cannot perform to the optimum level required in the world of work. Osu (2010) confirmed that Nigeria has been experiencing brain drain in technical and vocational education which has adversely affected institutions of learning over the years. The receding influence of the academia ever since has had a severe implication on our national development because our poorly-staffed universities, polytechnics and colleges of education today produce half-baked products who are supposed to be future leaders of our country.

CONCLUSION

Education is the most valuable treasure any nation can give to its citizens. Education should be functional and should be geared towards the acquisition of knowledge and as well as relevant competencies (skills, attitudes, and aptitudes). Effective education therefore should go beyond mere literacy - ability to read and write. It should incorporate ability to "do" and "apply" that is, it should equip the learners with some form of technical know-how. West African countries are referred to as developing nations and therefore should endeavour to make vocational and technical education programmes functional in order to enhance economic development. Nigeria's economy will be left untapped unless Nigerian institutions of learning start to graduate people in technical and vocational education and utilize them effectively. Therefore, the economy needs competent, skilled personnel's in technical and vocational education to enhance accelerated development and in Nigeria.



Recommendations

The following recommendations are made:

- i. Government and management of vocational and technical institution should provide a conducive environment for learning, this is because vocational education will be efficient in proportion as the environment in which the learner is trained is a replica of the environment in which he must subsequently work (Prossers ,1949)
- ii. Policy makers, policy implementers governments at all levels should ensure effective counseling in the formative stage in order to avoid wastage of resources. Entrants into vocational educations should be carefully selected to ensure that they have the interest and aptitude to benefit from the training. Only those who are genuinely interested in entering should be considered for training.
- iii. The management of tertiary institutions should pay more attention to full implementation of school curriculum in ensuring effective compliance with curriculum implementation guidelines through effective classroom practices. Lecturers should be encouraged to cover the contents of the curriculum so that the students can acquire the necessary skills. They should be acquainted with the distinctive role plays by technical and vocational education in national development growth.
- iv. Lecturers should be encouraged continually to adopt teaching strategies that would enhance learning for better academic performance of the students. More emphasis should also be laid on classroom attendance and assignment.
- v. Government at all levels in Nigeria should provide adequate support for continuous training of teachers of vocational and technical education in Nigerian institutions. This could be in form of attending seminars, workshops and conferences so as to prepare them for greater challenges and to make them more knowledgeable, better skilled and more experienced.
- vi. Facilities which are necessary for effective learning should be adequately provided to aid teaching and learning for better skill acquisition and teachers should ensure that the

recommended resources provided for teaching are adequately utilized.

- vii. The need for adequate funding of the educational system should continuously be the priority of government, private organizations and the totality of the Nigerian citizenry. Central to these issues of enhancing entrepreneurship education in vocational programmes is adequate funding. Since vocational education is capital intensive, a deliberate intervention policy must be made towards the funding of vocational education. Government should establish a monitoring unit to ensure that funds allocated are utilized for the purpose for which they were made available in the institutions.

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OPERATIONAL STRATEGIES AND MANAGEMENT OF KFC: AN ENQUIRY

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ABSTRACT

This is a business case report on one of the world largest fast food chain restaurants Kentucky Fried chicken (KFC) in accordance on its operation management and strategy. As the course requirement, the company has been selected on the preference of my own with a prior approval of the unit leader. The report critically analysis three operation management decision areas as design of goods and services, quality management and supply chain management of KFC with suggestions to better performance. Furthermore, it evaluates the strengths and weaknesses as well as strategies with recommendations for achieving competitive advantages. Finally, the report draws a conclusion with wrapping up the findings.

KEYWORDS: *Managing Quality, Supply Chain Management, SWOT Analysis, CSR*

1. INTRODUCTION

The role of operational management has become more diverse and challenging due to present global business context, and rapid product development for customer requirements. Without the effective performance of operations and process management, no company can be sustained and succeed in long term (Slake et al, 2015). Furthermore, Heizer et al, 2017 mentioned that operation management is the costly part of an organization.

Operations management is the set of activities to manage the resources that produces goods and services (Harrison, 1996; Vilder, 2001; Slack, Jones and Johnston, 2013). Operation strategy treat as a mixture of actions and decisions that focuses on visions, goals and capacity of operations which attain the competitive advantages of organization (Slake et al, 2015).

KFC, a subsidiary of YUM! Brands is one of the world largest restaurant chains, maintain the business from Kentucky in United States with 21487 outlets including own managed (3%) and franchising

(97%) over the 131countries (Yum, 2018). It is well known for its original fried chicken recipe. (KFC, 2018)

2. OBJECTIVES

The report critically analyses the design of goods and services, quality management and supply chain management operation decision areas of KFC. Report also evaluates strengths and weaknesses as well as competitive advantages with recommendations to improve the performance of KFC.

3. METHODOLOGY

The study was documentary analysis type. Data were collected from secondary sources like books, research reports, journal, internet etc. The study adopted a critical review method along with the SWOT analysis to depict the fortes and limitations of KFC's operational strategies and management. Data were collected directly from the KFC's official websites.



4. DISCUSSION AND ANALYSES: THREE OPERATIONS MANAGEMENT DECISION AREAS OF KFC

Heizer et al, (2017) identified ten operation management decision areas for business organization. These are design of goods and services, managing quality, process strategy, location strategy, layout strategies, human resources, supply chain management, inventory management, scheduling and maintenance. Among them design of goods and services, supply chain management and managing quality in KFC are chosen for critical analysis.

4.1. Design of Goods and services

Strong product and services play an important role in operation management in the competitive global market. The goal of product design is to develop and implement of the product strategy to achieve the competitive advantages over the counter parts (Heizer et al, 2017). KFC is a Brand that specializes in fried chicken which utilizes the product selection, product definition and product design strategies.

4.1.1. Product selection

From the very beginning the founder of the KFC selected the chicken rather than lamb, mutton or beef as a product. Since that KFC provides the goods and services to the customer (KFC, 2018). To maximize success, each of every company focus on limited product such as Honda famous for engines, Intel for microprocessors and Michelin well known for tyres (Waddington, 2018).

4.1.2. Product Definition

KFC offers a distinct high-quality product to global market. Shouldice Hospital in USA has expertise on hernia repairs; it is distinct reputation from others (Waddington, 2018). As like as KFC offers a sole product that comes from unique recipe chicken with a blend of 11 herbs and spices (KFC, 2018). The ingredients and taste make the distinct and high-quality product that represents a trade secret.

4.1.3. Product Design

Customer needs influence the product design. Due to customer demands, KFC has enriched its menu with other products such as chicken burgers and wraps, salads, desserts, side dishes and soft drinks (KFC, 2018).

A global marketing strategy is varied from local because consumer's preferences differ spontaneously in the world (Peng, 2014). From the product perspective, KFC first identifies the consumer's likes and dislikes and culture before introducing new product. For cultural point of view KFC introduce new strategies that known as 'Go Global, Act Local' (Simmons and Crawford, 2013 cited in Azman et al, 2014). For instance, Malaysia and Indonesia KFC considering the religion perspective, it introduces the Muslim Halal Food. In addition, lack of potato in both countries, KFC start rice item as side dishes (Azman et al, 2014). More over KFC considered the Islamic issue they introduce Halal food in worldwide. Besides this KFC do some innovations on introducing drive-through window, kiosk and express units. Above all initiatives indicates that KFC business focuses on product and mass customization. However, for the purpose of maintaining brand image, they are keeping consistent with original recipe remained unchanged (CSOFT International, 2013 cited in Azman et al, 2014).

4.1.3.1. Generating new products

KFC has a product improvement team that primarily creates thoughts. Then test the idea is feasible or not. After that, develop the product specification as well as manufacturing and cooking method. Then reviewing the findings and developing the desired food and it also evaluate whether the product meets the customer needs. Finally, the new menu is introduced in competitive markets. It is noticeable that, Yum expensed \$22 million, \$24 million, and \$25 million in 2017, 2016 and 2015 for research and development (Yum, 2018). So, the product development stage covers the concept, feasibility, customer requirements, functional specifications, product specifications, design review, test market, introduction and evaluation with the scopes for teams of product development and the team for design and engineering.

4.1.4. Suggestions to improve product design performance

Product decisions are based on one or combination of selection, definition and design of products. Also, it is inevitable that every product experienced the decline phase of its life cycle and company gains most of the profit in maturity stage. (Heizer et al, 2017). Figure-1 shows the maturity level. At maturity points of view organization should take the opportunity as much as possible. KFC should make continuous improvement and innovation in its local side dishes by adding new flavor and taste. Moreover, KFC should add breakfast menu especially for students. This



advantage opens a new window for organization. Finally, KFC can introduce Six Step decision model

and avoid uncertainty environments which are mentioned it Heizer et al 2017.

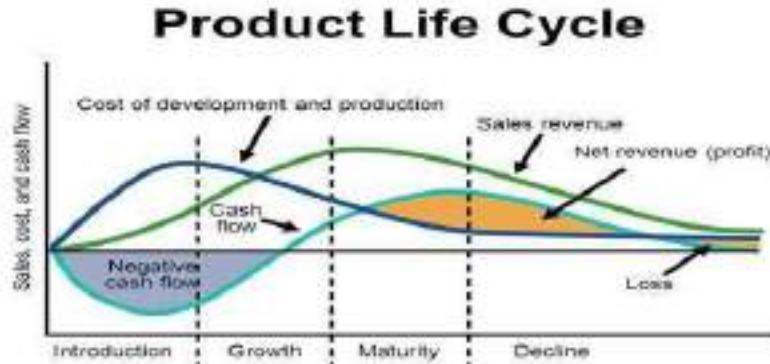


Figure-1: Product life cycle

4.2. Managing Quality

Quality management is important for successfully running business activities through keeping customer satisfied. American Society for Quality defines ‘The Totality of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs’ (Waddington, 2018). Improve quality increases productivity through gain and reduced cost (Heizer et al, 2017). For instance ‘The Swiss Army Knife’, and ‘The Four Seasons Hotel CannaryWharf2’ are well known for quality. On other side bed quality as ‘fat fingers syndrome’ affected the organisation like Swiss Bank in 2009 (Slake et al, 2015). Deming 14 points approach focuses first quality and then global business (Bank, 2000). Considering the Deming 14 points, globally it divided into seven concepts as continuous improvement, six-sigma, employment empowerment, benchmarking, just-in-time, taguchi, and knowledge of TQM tools.

4.2.1. Continuous Improvement

Fried Chicken is KFC specialize products and it also continuously making in products and services. For instance, they introduce meat free menu especially for vegetarian. This vegetarian menu helps the brand to be more attractive to a larger section of customers. Now ‘So Veg, So Good’ slogan is treated as part of KFC promotion strategy in India (KFC,2018). In addition, KFC new innovation in product is Nashville Hot Chicken and considering the services is kiosks as well as express out lets. Its drive-through-window operation improves the speed of service (Apte and Renolds, 1995). Yum expended huge amount money on research and development which represent the Shewhart’s PDCA (Plan, DO, Check, Act) model.

4.2.2. Six-Sigma (3.4 defects per million)

It is applied in KFC by maintaining precision and reducing defects in all products and services. For example, KFC is popular for its original recipe chicken with secret blend of 11 herbs and spices to customers even after more than 70 years for its innovation that proves distinct feature (KFC, 2018).

4.2.3. Employee empowerment

Working environment is very important of employees to utilize their skills and capabilities. KFC belongs to a good image in this area. For quality improvement, Yum first develop the employment opportunity like introduce the pension, retire medical and retire savings plan (Yum, 2018). Training and motivational activities boost up the capability that increase the productivity. The restaurants service time cut more than half by improving labor productivity (Apte and Renolds, 1995).

4.2.4. Quality policy and guideline

KFC has own quality standards guideline that narrate require direction for food safety and quality as well as quality risk, product production procedure, equipment maintenance, facility standards and accounting control procedures (Yum, 2018; KFC, 2018). An integrated quality approach introduces like, cleanliness, hospitality, accuracy, maintenance, product quality and service along with training, rewarding employee performance. But if the expectations are higher than performance then perceived quality is lower than satisfactory that’s leads the customer



dissatisfactions (Parasuraman et al, 1985 cited in Nguyen, 2018).

4.2.5. Suggestions to improve the performance

KFC should apply TQM tools and techniques for quality management. These includes the fish bone diagram for identifying process element, pareto chart for organizing data, check list for generating ideas, histogram for identifying problems finally statistical process control for defect prevention. KFC may introduce the Body Shop customer focus slogan ‘Smile Dammit Smile’ that treat customer as potential friend, acknowledge the presence, talk within 3 minutes, offer product advice, always smile with thanks. Moreover, KFC should consider the food safety especially for children. Finally, it is suggested that research, training

and development program should be continued for employees.

4.3. Supply Chain Management

Supply chain management (SCM) is the combination of activities that purchase, outsource or hire materials or services, later transform them into intermediate goods as sellable final product for consumer (The supply chain council cited in Millar, 2015).

In general, KFC maintains three phases in supply chain. Primarily materials are purchased from multiple suppliers and stored in two different warehouses like normal and cold storage. Then products grounding is done and sold to the customers in desired outlet or locations. In final phase outlets are replenished three times a week through warehouse. Figure-2 shows the phases as an example:

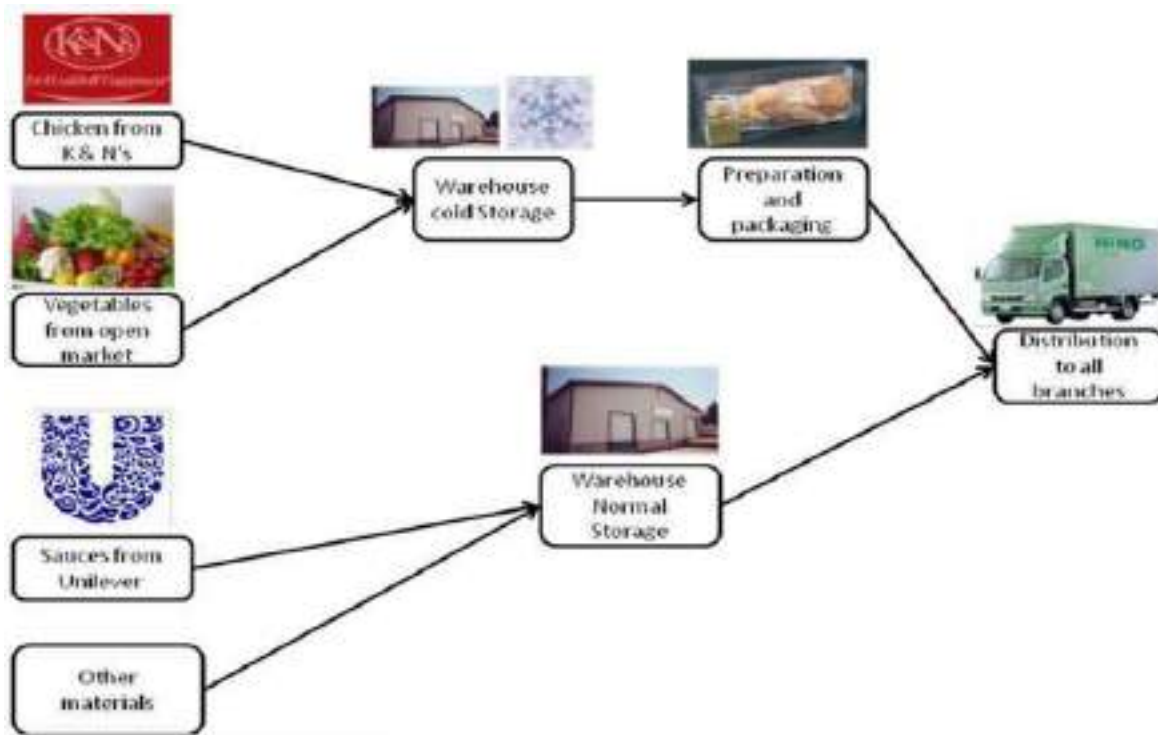


Figure-2: KFC Supply chain phase

KFC and its franchises have approximately 6400 food and paper supplier KFC and franchisers purchased the principle items include chicken, cheese, beef and pork products, paper, packaging materials and

outsource or hiring the logistic and warehouse (Yum, 2018).

Buying decision makes the company profitable by lower pricing, reducing quality and inventory cost as well as management cost. As a restaurant business buy



decision is appropriate. In addition, it is noted that KFC follow the leverage products which is mention in Kraljic portfolio purchasing model (1983).

Considering the six sourcing strategies, KFC chosen the many suppliers’ strategy. UK generally sources chicken from local poultry suppliers and rest of the chicken procure from EU, Brazil and Thailand (KFC, 2018). KFC in US and own restaurants main supplier is McLane Food service Inc (Yum, 2018). Pakistan Venky, VH group, K&N etc are mains suppliers of India division and china procure a major portion from OIS group. In terms logistic chain KFC worked with DHL, QSL and Bidvest logistics.

KFC supply chain risk reduction tactics are effective for multiple suppliers which reduces the dependency, monopoly and risk. Another tactic is careful supplier selection, certification and monitoring. In UK suppliers fulfill the welfare standard, and RSCS select supplier and monitor the activities in UK. Furthermore, KFC reduces the political, economic and legal issues in supply chain by franchising. But the recent experience of UK is not satisfactory. Due to change in supply chain, it faces chicken shortage that causes 900 out lets were faced troubled in February 2018(The Guardian, 2018). This happened for communication and relationship gap. Wilding (2018) mention that it is important to managing relationship with existing or former and implication for upcoming partners as well as collaborations.

4.3.1. Suggestion to improve performance

KFC should build the supply base stages like supplier evaluation through supplier certification, supplier development, Negotiations and contracting. Supplier should be more integrated in operations approach through training. Moreover, multiple transportation and warehouse are prerequisite to overcome the supply risk. Furthermore, before changing in supply change, they should allocate proper budget on contingency. Finally, KFC should give more attention on sustainable eco friendly supplier and build up collaboration as well as relationship.

5. SWOT ANALYSIS AND ACHIEVING COMPETITIVE ADVANTAGES IN KFC: A CRITICAL OVERVIEW

SWOT analysis reflects, how well a company’s strategy is working, a proper understanding of the resource capabilities and deficiencies, it’s market opportunity, and the external threats to its future is essential. Figure-3 shows the competitive advantage which focuses on differentiation, cost and response (Heizer, Render and Monson, 2016). According to slack et al. (2015), the five competitive priorities are cost, quality, speed, flexibility and dependability that’s relating to operations strategy. In addition, ‘PESTEL’ analyses helps to identify the external factors for setting strategies. Table-1 shows the Strengths and Weaknesses of KFC.

Table-1: SWOT analysis of KFC

Strengths	Weaknesses
1. One of the largest restaurant chains. 2.Brand Image 3. Product Uniqueness/ Differentiation. 4.High quality foods 5. Quick service 6.Strong research and development activities 7. Environment friendly 8.Corporate Social Responsibility (CSR)	1. High price 2. Some unethical supplier 3. Logistic supply chain
Opportunities	Threats
1.Franchises 2.Cross Culture 3.Innovations in new idea 4.Collaboration and partnership	1.Market competitors 2.Substitute product 2.Avian flue 3.High calorie food

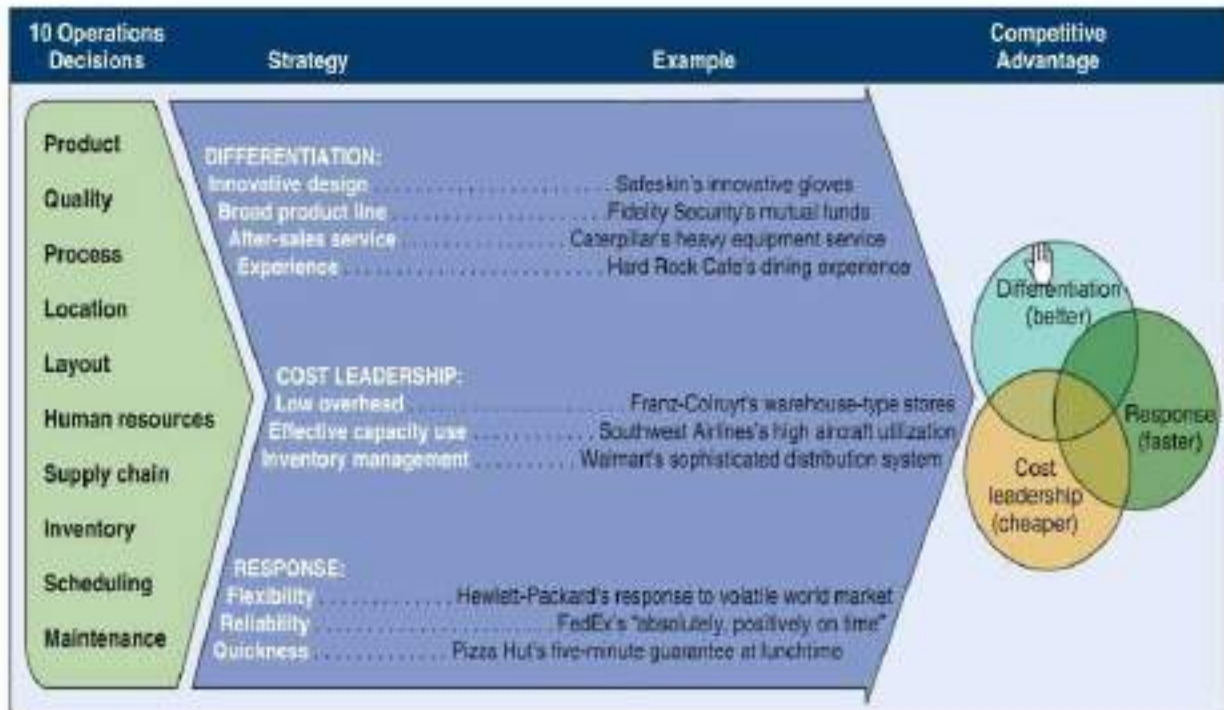


Figure 3: Operation Decision, Strategy and Competitive Advantage

5.1. Product Uniqueness/Differentiation

Differentiation is interlinked with ensuring and providing uniqueness in goods and services. In order to grab market and consumers satisfaction, organizations try to make product different in nature. From the starting of KFC, their product is popular to the fast food lovers due to its original chicken recipe which still remain unchanged (Yum, 2018). This secret recipe, outstanding quality and taste made differentiation and increase brand image that leads the competitive advantages. For instance, Crittenden et al (2015) mention that food and beverage secrets dominate the business –to-customer marketplace. Moreover, brand image can use intellectual property as strategic weapons (Reitzig, 2004).

5.2. Cost leadership

An organisation attains advantages by delivering low cost products to the customers. In this strategy, KFC is not performing well. Final products price is dependent raw materials prices. KFC price strategy is if the ingredients price increase, the extra amount pass to the customers (Yum, 2018). But any price increase might lead to consumer switching the other fast food or stop buying (Azman et al, 2014)

5.3. Responsive

Responsive is referred to flexibility, reliability and quickness in product development and delivery. In this regard, before introducing a new product they conducted survey the customer requirements (Yum, 2018; Simmons & Crawford, 2013 cited in Azman et al, 2014). On other side, KFC now introduce collectrametric, a pressure fryer to prepare fried chicken quickly. It also maintains the dependability through quick delivery promise.

5.4. Market competitor

Peter's five forces model focuses on immediate rivals, potential entrants, customers, suppliers and substituted products. KFC immediate rivals are McDonald, Subway, Burger King, Dominos, Pizza Hut and Taco Bell. In UK 50% of the fast food restaurants has managed by McDonald (28.8%), KFC (12.5%) and Subway (8.7%) (Nguyen et al, 2018). Each of every company tries to increase the participation ratio by introducing cheapest quality product. At the same time customer taste is changing and preferable one takes the competitive advantages (Shuailing and Zhi, 2015). Adequate information on rivals can reduce the competitive disadvantages.



5.5. Product quality and fast service delivery

Now a day's product quality and fast service delivery is prerequisite for business strategies.KFC is famous for quality and service in chain restaurant. If any customer becomes ill due to food safety issues, authority temporarily close the out late (Yum, 2018). By the quality improvement program 'drive-through-window, KFC profit margin increase from 5-9 percent, labor productivity increases 12.3% in test program (Apte and Reynolds,1995 cited in Russell and Taylor,1998). KFC restaurant try to win customers expectations by giving better services for creating a loyal customer base (Rahman et al, 2017). But in china, Chicken supplier are criticized for using excessive antibiotics and growth hormones in poultry which is unethical (Bloomberg view, 2014). Moreover, KFC

suppliers have been criticized for using soybean which was cultivated in Amazon rain forest.

5.6. Corporate Social Responsibility (CSR)

KFC has corporate social responsibility as student scholarship, sponsorship, and hunger relief effort to the interest of mass people (KFC, 2018). For instance, in 2014, after earthquake Lu Dian, China, KFC donate two million yuan to disaster area and China KFC Dawn fund helped the 15000 poor students (Shuailing and Zhi, 2015). According to Archie Carroll's model (Figure-4), CSR increase the Company's sustainability of business and corporate citizenship. It helps to develop the relationship among the suppliers, business partner, employees and community that leads to enhance the long-term advantages.



Source: Carroll (1996)

Figure-4: Archie Carroll's model

6. CONCLUSION AND RECOMMENDATIONS

In conclusion, this report finds that the global business is becoming more complex and competitive in terms operations decision areas and strategy. It also finds, operations management and strategy make the competitive advantage. Every decisions areas and strategy are distinct from other. Thus, right choice of decisions areas and their appropriate strategy are highly important for advantages.

From this report it is identified that KFC biggest strength is its brand image based on colonel's legacy and its product design and quality of original chicken recipe which makes the market leadership. But considering the challenges, it is recommended that KFC

should give more attention on supply chain and cost effectiveness.

After analyzing all the issues, the study finally recommends the following points:

- a. Considering the food safety and quality KFC should not have any relationship with any unethical organization to avoid all negative criticism. KFC should introduce small improvement through total quality management. Besides this packaging materials should be used environment friendly.
- b. KFC will be able to take more advantages by its original recipe product as an intellectual property.



- c. KFC need to more emphasis on CSR. It will be able to increase brand image which will hit the sails gain and competitive advantage.

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ATHLETICS AND ITS BASIC RULES

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ANNOTATION

Athletics, also called track-and-field sports or track and field, a variety of competitions in running, walking, jumping, and throwing events. Although these contests are called track and field (or simply track) in the United States, they are generally designated as athletics elsewhere. This article covers the history, the organization, and the administration of the sports, the conduct of competitions, the rules and techniques of the individual events, and some of the sports' most prominent athletes. In this article the following issues are discussed.

KEY WORDS: *running, walking, jumping, physical culture*

DISCUSSION

Track-and-field athletics are the oldest forms of organized sport, having developed out of the most basic human activities—running, walking, jumping, and throwing. Athletics have become the most truly international of sports, with nearly every country in the world engaging in some form of competition. Most nations send teams of men and women to the quadrennial Olympic Games and to the official World Championships of track and field. There also are several continental and intercontinental championship meets held, including the European, Commonwealth, African, Pan-American, and Asian.

Athletics is a discipline that teaches the theory, practice and methodology of teaching this sport in specialized physical education institutions and pedagogical institutes and in the physical culture faculty. Athletics is a Greek word that means wrestling, exercise, competition. In ancient Greece there were contests between the strong and the fast. Those who participated in these competitions were called athletes. But now we call the strongest men the athletes who are mature.

Millions of people are involved in track and field athletics in our country. The variety of exercises, the simplicity of the equipment used, the high efficiency of them, and the wide range of physical workloads allow them to manage. Therefore, athletics is so popular that it is not called a spotless

weapon. Athletics enhances walking, running, jumping, throwing, strength, speed and endurance, improves mobility, and has a positive impact on the training of willpower. Its exercises enhance the functionality of the body, its ability to function. Classes are usually held outdoors - in the stadium, in the park.

Athletic training is of great educational importance and it helps athletes to feel a sense of community and responsibility. Skills and ability acquired through athletics will help a person in his day-to-day work, as well as help prepare young people to serve in the army. Exercises in this sport are widely included in the physical education program for students of secondary special educational institutions and are included in all stages of the special tests "Alpomish" and "Barchinoy". Most of them are used by athletes engaged in other sports. Running and jogging is a popular and common exercise. They have a positive effect on the overall physical development of a person and serve as an excellent tool for maintaining good health and active recreation. It is used in many sports and changes in speed can lead to the desired effect on the body of athletes. Athletics is a science in this field.

Running: It's a natural way for a person to move from place to place. It is the most common type of exercise that involves many sports (football, basketball, handball, etc.). Many types of running are



organic parts of different kinds of athletics. There are many types of track and field running, relay racing, and natural running. Different types of running include distance, mid-distance and marathon running depending on distance.

Jumping - is a natural way of getting through the obstacles and is characterized by maximal nerve muscle strength in a short period of time. Athletics and jumping skills improve the ability of athletes to manage their bodies and build their strength. Strength, speed, agility, bravery are average. Jumping is one of the best exercises to strengthen your legs and body muscles and build leverage, and is required not only for athletics, but also for other sports. Athletics jumping is divided into two types.

1. To the extent possible in order to jump higher vertical jump obstacles and jump pole.

2. Jump across the horizontal barrier and jump in triple jumps as far as possible.

Throwing: The results of these are determined in meters and centimeters. Discharge is characterized by a short maximum of nerve tension. In athletics, throws are divided into three types depending on the method of execution:

1. Throwing from the head (spear and grenade).

2. Scroll (discus)

3. Shock (core)

The difference in these methods depends on the shape and weight of the rounds. Easy-to-use shells can be rushed straight from the head to the rear. It is better to throw heavier shells around. It is easier to cast a heavy shell core without a special handle.

Athletics consists of five sections: walking, running, jumping, throwing and many struggles, each of which is divided into different types. They are a great exercise for people. When running long and smooth, almost all the muscles in the body work, and the cardiovascular, respiratory and other systems in the body become more active, resulting in increased metabolism. Exercise as a physical exercise is of paramount importance. They are taught to walk in childhood. But it is not enough. All people should be able to walk beautifully. In addition to regular hiking, there are other types of hiking. It is technically the most difficult but the most useful type of athletics. For this reason, athletes have to deal with a leisure walk a considerable impact on the body, its organs and their systems strengthen, increase their ability to work, have a positive impact on the development of strength and endurance, and teach them to be volatile. Therefore, walking competitions are held on stadium sidewalks (in the opposite direction of the clock) and on normal roads (along the streets and lanes, etc.) from 3 to 50 km. Runners must adhere to the specifics of the walking technique

prescribed by the rules. The main thing is to prevent both feet from falling off the ground at the same time, even for a moment.

An athlete is considered to be in jogging when there is a chance that his feet will not touch the ground. Athletes who violate this rule are disqualified by special referees. Runners must adhere to the specifics of the walking technique prescribed by the rules. The main thing is to keep both feet away from the ground at the same time, even for a moment. The requirement for the ability of the whole organism to run is greater than when it runs. Because when running, almost all of the muscles in the body are activated, cardiovascular, respiratory and other systems are activated, and metabolism is greatly increased. Depending on the abilities of the trainees, varying the amount of work by changing the distance and running speed can influence the development of a person's endurance, speed, and other qualities. For example, it is not so fast, but long-distance running (especially in woods or amusement parks and gardens) is of great hygienic value and is one of the best health remedies. High-speed jogging increases the demand for trainees, especially their cardiovascular and respiratory systems, and is an excellent tool for developing endurance. And running at very high speeds will be included in special training sessions for speed development. Running process to deal with the obstacles to redistribute the power to strengthen the will of the people, know, outdoor-oriented to obtain the ability to be formed.

Running is one of the main tools for comprehensive physical development. That is why great attention is paid to the training of lightweight athletes of all specialties, as well as other sports, as well as the importance of running as a means of active leisure, health and work habits. Running is the most popular exercise in all types of athletics. Different types of track and field relay have a leading role in track and field athletics, and the audience is keenly interested in them. Therefore, the race for the best campaign and is one of the promotional tools. In track and field athletics, there are many kinds of running, running over obstacles, relay racing and running in natural conditions. Variations of running and distance options are shown in the table. Smooth running is carried out at a certain distance or time interval on the treadmill (in the opposite direction of the clock). At a distance of 400 meters or less, a separate lane is provided for each runner. The rest will be run on a common track. The time taken to travel a specified distance is measured in seconds. The running time is limited to one hour and two hours, and the result is measured in meters as the distance traveled. There are two variants of running over obstacles:



1) Running over obstacles - running at a distance of 60 to 400m, exceeding the same type of obstacles placed at certain distances on the treadmill; each athlete will run separately;

2) Running over 3,000m fences where the runway runs over the fenced-in barriers, overflowing ditches in one of the stadium sectors.

Running the Relay - Runs in Teams; the more runners in a team, the more distances are divided into stages. The purpose of the relay race is to extend the baton to each other and bring it as fast as possible, from start to finish. The range of steps can be the same (short and medium distances) or (at different mixed distances). Running in the relay is most common on the stadium sidewalks and sometimes on city streets (circular and star-studded races). Under natural conditions, it is possible to run in low open areas, and run 15 km or more on roads (along the highway, on sidewalks). The longest run in track and field athletics, the marathon, is 42 km -195 m.

Jumping is a natural way to cross obstacles and is characterized by maximal nerve muscle strength in a short period of time. In athletic jumping exercises, athletes' ability to control their bodies and build their abilities improves, while strength, speed, agility and bravery increase. Jumping is one of the best exercises to strengthen your legs and body muscles and build leverage, and is a must for not only athletes, but also basketball players, football players and handball players. Athletic jumping is divided into two types:

1) Jumping vertical (vertical) obstructions to jump as high as possible and jump with anchor;

2) Crossing the pillow (horizontal) to jump as far as possible - jump in length and triple jump.

The jump results are measured in meters. The jumps will come from where they stand and run. Casting is the practice of pushing and throwing special equipment remotely. The results of these are determined in meters and centimeters. Nerve and muscle disposal of high voltage for a short time (maximum) to be characterized. Not only the muscles of the arm, shoulder and body, but also the leg muscles are involved. Athletics throw away from the instruments of power, speed, agility developed at a high level and you need to know to gather their strength. Exercise training not only promotes these essential qualities, but also promotes the harmonious development of the entire body muscles. Athletic throws are divided into three types depending on the method of execution :

1) Throwing from behind the head (spear and grenade);

2) Tossing around (lapel, lice);

3) Loss (core).

The difference in installation methods depends on the shape and weight of the equipment. Lightweight, easy-to-use tools can be run straight and thrown away from the back of the head: heavier tools are easier to spin; It has a special handle, and the heavier core is easier to absorb.

In conclusion, after the independence of the Republic, the process of renewal and development is being implemented in all spheres. In addition, great attention is paid to the development of physical culture and sports. It is not accidental that the President of the Republic of Uzbekistan signed on January 14, 1992 "On Physical Education and Sport", 1993 "On Establishment of a Healthy Generation Fund". Such examples are more, Decree of the President of the Republic of Uzbekistan "On the State Program on Reforming the Health Care System of the Republic of Uzbekistan" dated October 10, 1998 and the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated May 27, 1999 and Resolution of the Board of the Ministry of Higher and Secondary Special Education of March 29, 1999 "On the Development of Physical Culture and Sports". Law of the Republic of Uzbekistan "On Physical Culture and Sports" of 2000 and the Presidential Decree of October 24, 2002 "On Establishment of Children's Sports Development Fund of Uzbekistan" Decree of the President of the Republic of Uzbekistan The decision of the Ministry of Education of the Ministry of Education dated January 4, 2003 - all of these documents indicate that the popularity of physical culture and sports among the population and the involvement of young people in sports is a nationwide task. teams. All new laws, decrees define new health promotion objectives, including broad involvement of children in physical education, especially from early childhood, especially for healthy, strong, resilient. There is a particular emphasis on the need to pay serious attention to the growth of the agile. This is one of the most pressing issues. In his speeches, President Shavkat Mirziyoyev repeatedly stresses that upbringing a healthy generation in our country is a state matter. In the performance of this honorable task, the development of physical culture and sports also plays an important role. At the same time, measures are being taken to reflect our national ideology and values in physical education. That is, along with the development of sports, it is considered as an important task to instill and bring up our national values and Uzbek customs into the life of the younger generation.

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ISSUES OF PHYSICAL AND SPIRITUAL UNITY IN DEFINING A HEALTHY LIFESTYLE

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ANNOTATION

If we pay attention to the historical sources of the formation of a healthy lifestyle in the socio-philosophical, moral and aesthetic views of the countries of the East, we will see that they were first expressed. In this regard, we can see that the ancient Indian Vedas developed the basic principles of healthy living. One such principle is the achievements in the field of stability of the human psyche. In this article the abovementioned ideas are discussed.

KEY WORDS: *philosophy, lifestyle, politics, challenge, reproductive*

DISCUSSION

The full spiritual freedom of man is the first and most necessary condition for achieving such stability. The Upanishads emphasize the ethics of personal perfection, "because society is a stabilizing phenomenon," writes J. Nehru, "and the human mind has always thought of personal perfection." Indeed, the spiritual satisfaction in man, the recognition of spiritual stability, and on this basis the appeal to his inner world, was one of the main features of ancient Indian philosophy. The issue of the physical and mental unity of man has a special place in Eastern philosophy in determining the way of life. Ancient Chinese thinkers believed that mental imbalances caused the malfunction in the human body when talking about a healthy lifestyle. In this sense, they have previously questioned the idea of five distressing moods, such as irritability, frustration, grief, anxiety, and nervousness. According to them, giving in to such moods can destroy not only certain organs of a person, but also the whole body, as well as the way of life. Therefore, as long as a person lives, he should realize that the cause of all failures is ignorance, and the source that energizes the body and enriches the content of a healthy lifestyle is happiness.

Concepts about the healthy foundations of lifestyle are common in ancient Greek philosophy. In his pamphlet *On Healthy Lifestyles*, Hippocrates examines this phenomenon from a medical point of view, focusing it primarily on human physical health, as well as external environmental factors such as

climate, soil, water, people's lifestyles, country laws, and explains the effect of the properties. According to F. Asmus, when thinking about lifestyle, Democritus first of all puts forward the idea of meeting material needs, considers them to be the root cause of all changes in the development of society, and the material causes of changes in society are consistent with the realization of interests. concludes.

It should be noted that the issue of building a healthy lifestyle on a healthy basis had its own traditions of antiquity. It has been declared that even a physically immature teenager does not deserve higher education, as his health and well-being are the main criteria in the intellectual upbringing and development of the next generation, in the implementation of a sustainable lifestyle. It is known from history that in ancient Greece, the status of the body was strictly discussed within the framework of state laws in accordance with the requirements of physical education. For the Greeks, the pursuit of physical perfection was one of the most important areas of personal development, and the idea that the more beautiful a person's body, the more perfect he or she would be, dominated society. The gods of Olympus have always been patrons of people who strive to strengthen their health, beautify their bodies and become energetic. The idealization of the fit body of an energetic man has a worthy place in the political and religious imaginations of society. Because the gods are portrayed as highly healthy, beautiful, and energetic, the Athenian warrior found gratitude for his health, delicacy, and physical perfection behind his



devotion to his athletic appearance.

At the same time, the first concepts of a rational lifestyle, such as "know yourself", "take care of yourself" appear. According to the concept of 'self-care', each person should have a unique way of working, accordingly taking care of himself, changing his life and perfecting himself. Thus, the 'sense of harmony' created images of life in the ancient Greeks, and physicality was an integral part of them. In Eastern philosophy, the preservation of the balance between the physical and spiritual state of man is considered an important principle. The "good thought, the good word, the good deed" described in the great Avesto was the basic principle in understanding and organizing the essence of the human way of life of Eastern wisdom. Such a balance has been expressed not only by Eastern, but also by Central Asian thinkers. It is self-evident that the original signs of the way of life are reflected in the ancient Turkic monuments and memoirs, in the examples of folklore, in the philosophy of mysticism, in the system of values of Jadidism. Due to historical development, especially in the following centuries, extremely diverse factors and means have entered the structure of human life, socio-technical discoveries such as electricity, television, modern transport, computer technology, the Internet have changed its nature. At the same time, there are deep imbalances in the natural, social and spiritual spheres of human activity, the living environment.

As a result, the subject of lifestyle has undergone profound qualitative changes in the human mind, previously it was both a producer and consumer of various goods, but now there is a sharp stratification in these functions, which affects his life, health, lifestyle caused certain changes in their relationship as well. The achievements of the scientific and technological revolution have not reduced man's ability to adapt to changes in the natural and socio-industrial environment. On the contrary, the more automated the production, the more the human being enjoys it, the more his life, his living conditions, especially the body's defenses, become stressed.

As a result of the rapid development of production, environmental problems have arisen, and those concerned with nature conservation have begun to forget that they are part of the environment and that natural conditions are their living space, and that all efforts are now focused on preserving and improving the environment. Thus, the problem of environmental security has gone beyond the national and regional framework and has become a common problem of all mankind. The above shows that the concept of "lifestyle" is formed as a category that represents a specific mixture of historical development and natural conditions of human life, a variety of activities.

As we begin to explore the problem of a healthy lifestyle and its sustainability in society, it should be noted that it cannot be properly understood without linking it to the general scientific and philosophical concepts that have emerged in this area. Consequently, the basic concept of a healthy lifestyle is a qualitatively concrete expression of a 'lifestyle'.

Lifestyle is, first of all, a complex phenomenon that manifests itself in an integral connection with the holistic life activities of people. Lifestyle not only reflects the essence of the diversity in the behavior of people operating in a general environment, the social nature of its active assimilation, but also a form, a way to change it. Summarizing the views expressed, lifestyle is, on the one hand, a biosocial category determined by the type of human activity in the spiritual and material spheres, and reflects the type of vital activity or method of material and intangible (spiritual) activity, its historically conditioned type. In this case, the way of life consists of a set of typical methods of material and spiritual activity of people, which are inextricably linked with the nature and social conditions. Lifestyle, on the other hand, is a system in which man interacts with himself and with external factors, and is an integral way of looking at the existence of the individual in the unity of external and internal aspects.

Thus, if we summarize the definitions given by many researchers to lifestyle, we see that they reflect the unity of the following components: lifestyle is, first, the creative activity that transforms nature, society, and man himself; second, it is a way of satisfying material and spiritual needs; third, it is a form of people's participation in the sphere of socio-political activity and in the management of the state; fourth, cognitive activity at the theoretical, empirical, and value-level levels; fifth, communicative activity, which involves communication between people operating within society and its social systems (people, class, family, etc.); sixth, it is an activity aimed at the physical and spiritual development of man.

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INFORMALITY OF WORK, POVERTY AND FEMINIZATION OF WORKFORCE: IMPLICATIONS OF NEOLIBERALISM

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ABSTRACT

Neo-liberalism sets an era where the restrictions towards paid employment for women have lessened with opening of new job opportunities. Yet, a large number of women are working in informal sectors have been fighting and struggling for better pay. According to recent statistics, bulk of female work-force in India is employed under highly informal condition with no written contracts, no provision for social security and legal protection for the employees. In the attempt to deliberate on different aspects of feminization of labour force in view of rising informalization of workforce, the article investigates the discourse on neoliberal trends and its succeeding policy packages in implicating change in the agency of women.

While reflecting on the cause of feminization of poverty based on the field observation of women in Sonitpur District of Assam, the article attempts to find out if informality of work could adequately serve in meeting diverse needs of woman.

KEYWORDS: *Neo-liberalism, Women employment, feminization of labourforce, Feminization of Poverty, Informal economy*

INTRODUCTION

The decade of 1980s is marked by labour de-regularization and a renewed surge of feminization of labour activity with growth of employment opportunities for women with growing numbers of low wage women workers (Standing, 1999). Feminization of labour force is treated as one of the implications of Neo-liberal policy that has arrived into the locus of discussion among academicians and development practitioners since early 21st century (Seth, 2001; McClean, 2000; McILwaine and Datta, 2003).

Structural adjustment and economic recession over the past two decades have resulted cutbacks in public sector and wage reduction that has further swelled the informal economy. Sluggish and unproductive formal sector has led to the growth of informal sector which is regulated by market demand and wages. Informal economy is no longer considered as a feudal remnant or a parasite that grows from the retarding advancement of the formal sector, as described by Hart during an ILO employment mission to Ghana and Kenya (Hart, 1973).

Features that define informal economy include labor-intensive work, use of skills acquired outside the formal seminary system, minimal capital investment and maximum use of family labor and so on. The umbrella concept 'informal economy' encompasses broad range of unregulated activities including self-employment, casual work and home-based production and so on. Often the term is conceived and taken into consideration for different interpretations such as 'black economy', 'shadow economy', 'hidden economy' and 'real economy' (Allen, 2003).

NEO-LIBERAL REFORMS AND TRENDS

Neoliberal paradigm, is strengthened by the "packages of reform" or "best practices" chosen by the IMF (International Monetary Fund), the World Bank, and the World Trade Organization that is mellowed rapidly to most parts of the world in the form of political and economic policies (Martin, 2004). Vision of neoliberalism gained ground since 1970s in political economic practices. Since 1991, allegiance to IMF-WB



(International Monetary Fund-World Bank) orchestrated economic reforms including structural adjustment programme. That is succeeded by adoption of New Economic Policy by India in 1990 which further encouraged foreign direct investment, deregulation, watering-down of social, welfare, health, labour and environmental laws, and opening domestic markets to foreign competitors, simultaneously increasing corporate influence and involvement in governance. Countries that adopted neo liberal policy are susceptible to conditional ties of donor agencies while providing aids to the borrower country. Neo liberalism envisaged a roll back of state unlike classical liberalism while putting greater reliance on market friendly policies. In India, major initiatives were taken to reorient and restructure the public sector units (PSUs) and sporadic attempts have been made towards disinvestment in public sector enterprises in the midst of controversies. In India, a number of studies demonstrate how India has witnessed macro-economic political transformations in sectors like trade, construction, transport, financial services and information and communication technologies (Ghosh, 2005; Gupta, 2005). Further, neo-liberalism focuses on reinventing the government by transforming the role of public administration.

Neo-liberalism sets an era that lessens the restrictions towards paid employment for women with opening of new job opportunities for women in the growing service sector however, paid work opportunities for women have been highly uneven.

Two parallel trends hit the informal sectors together. Firstly, feminization of labour force, secondly, steep rise in informal sector workers with a predictably higher share of women inflow in unorganized sector. Unlike West, proletariat class labourforce is mostly feminized in India in the unorganized sectors, majority of them are younger female workers.

Some policymakers label informal economy as 'women sector' due to its capacity to accommodate majority of female workers. However, the factors such as lack of proper education, restricted entry of women into the formal sector, lowering demands of women labour in formal sector compel women to enter into informal economy have equal contribution to make it women specific sector. Labour force in India in agricultural and manufacturing sectors of the informal economy is highly feminized. Ghosh (2005) in his study stated that service industry in urban areas that was previously branded as organized sector economy has gradually been getting feminized and informalised. Large number of small, unregistered enterprises has commonly become a large source of employment for women.

PARADOXES IN WOMEN LABOUR PARTICIPATION IN INDIA

Although Government has claimed that participation of women in labour force has increased over the years, paradoxes are found in claims and actual trends of women in workforce. A notable paradoxes came to light in terms of the falling engagement of women in labour force, despite growth in economy, rising level of wages and income. In India, women participation in the labour force stands at around 26 percent, fall from 36.7 percent in 2005, a score that is much lower than any other country of G-20 [1] except for Saudi Arabia. There is a huge difference in employment pattern between men and women, the occupation, men and women choose to enter alongside their financial returns. Majority of women in workforce is consolidated in low paying dead end job.

Womenforce in agriculture have been increasing over the years, yet majority of women in farm lack control and ownership of land and productive resources which impede further to access to credit facilities and available subsidies. Increasing numbers of female workers in agriculture cant enjoy better access to market information nor could they exercise decision making role in their respective families which render them more vulnerable to economic vagaries.

With gradually sinking jobs in agriculture and increasing educational qualifications of women, made aspired younger women to prefer manufacturing and service sector than agricultural sector for immediate job opportunities. On the other hand, there is a rise in the share of women in non-farm sectors; the share of women in non-farm sector in wage reated job has increased from 18 percent during 2004-05 to 24 percent in 2015. Female participation in workforce varies across states in India. Participation is lower in those states where there is less initiative to sponsor wage labor for women with a weak tradition of female wage labor. The intervention schemes in rural India, i.e. National Employment Guarantee Scheme have increased the demand for wage labor among poorer households. This scheme, exceeding the minimum quota requirement has appealed many women to do job, registered a strong demand for work among women (Labour Bureau Report, 2012-13).

FALL IN HUMAN CAPITAL AND FEMINIZATION OF POVERTY

A noticeably sharp difference is found in indicators of level of education between men and women. In the group of 'medium human development' countries, 67.3 percent of adult women are literate as against 83.3 percent of men. Whereas in the 'low



human development countries', 35.8 percent females are recorded as literate as against 57.2 percent males. Even the school enrollment percentages (combining all three levels) record 60 percent for females and 68 percent for males in medium development countries, whereas 33 percent for females and 44 percent for males in low human development countries during 2014 (UNDP Human Development Report, 2015).

Sectorial distribution of level of primary and secondary education of women in India reveals that 30 percent of rural women are educated till middle school and only 18 percent of the rural working women are educated up to primary level. 63 percent of the rural women with education till secondary level are still engaged in agricultural activities and 23 percent of graduate women are working in agriculture and allied field. 52 percent of the rural women who are engaged in educational sector have education up to higher secondary and above. On the other hand, 10 percent of rural women engaged in education sector are illiterate and 17 percent of them have education till middle school level. About 26 percent of women who are engaged in public administration, health and social work have education up to secondary level.

50 percent of the women engaged as domestic workers in urban areas are illiterate and 28 percent of women workers employed in private households as domestic staff are literate up to primary level. According to government statistics, 58 percent of rural women workers are illiterate while 28 percent of male workers are illiterate. 30 percent of urban women workers are illiterate as compared to 11 percent of men (India labour and employment report, 2014). With a low level of education, majority of women cannot enjoy the legal entitlements for better opportunity to move upward.

Even in the terrain of Technical and Vocational Education and Training (TVET), rural-urban disparity is accompanied by greater gender based disparity. Men women division in attainment of technical education e.g. engineering, medicine etc in urban areas is found to exist 2.9 percent of technically educated women as compared to 7 percent of men. In terms of vocational training, a sharp gender disparity appears with 3.6 percent of women in rural India as compared to 8 percent of men and 6.5 percent of women in urban India as compared to 14.4 percent of men. The benefit of vocational training in availing opportunities in the labour market is also not very promising (Kannan, 2011).

FEMINIZATION OF POVERTY: IMPLICATIONS IN FEMINIZATION OF LABOUR FORCE

Poverty is an inalienable cause to explain the massive women first informal sector. Majority of rural women are susceptible to disastrous impact of poverty that drives them to engage in unorganized economic activities e.g. domestic work, construction work, small trades like brick making, coir and basket weaving, other agricultural activities, dairy, fisheries etc. to eke out a living. Then, the question arises if informal sector is the ideal sector for poor women to survive? Why many women prefer to enter into informal economy? An apparent factor that determines women's engagement in this sector is the ability the sector that makes women easily switch in and mix reproductive and productive tasks. Women can prepare food for sale, simultaneously can feed their families.

Women's association to informal economy is driven by enabling the use of indigenous resources, ease of entry, small scale of operation of informal economy.

Poverty has been feminized, a trend that is characterized by low level of asset building by women. Martha Nussbaum and Amartya Sen termed this trend, 'feminization of poverty', an extremely "troubling" societal tendency that can only lead to "capabilities failure" of women. For poor, labour is the primary asset at their disposal and labour markets are the crucial transmission apparatus that give them the exposure to translate labour into paid work. The wages, salaries and paid work are further translated into growth related benefits that are prerequisites for a decent standard of living, an improvement from impoverishment. The building blocks of gender empowerment and gender equality can not be sustained when there are increasing incidences of unemployment and an insatiable addiction to work only with the primary sectors.

In enmesh of poverty, housewives are found to fall into a complex set of deprivations: malnutrition and bad health, lack of access to the job market, low mobility, low level of trust, reciprocity and cooperation, low skills, incomplete education and so on. The poor are habitually being denounced and stigmatized as "lazy poor" who don't know how to grab the opportunities when offered and made accessible to them. Amartya Sen in his book "Well-being and Critical Voice" states, "Poverty of a life lies not merely in the impoverished state in which the person actually lives, but also in the lack of real opportunity given by social constraints as well as personal circumstances to choose other types of living." Lack of access to productive resources and credit, poor health care facilities, illiteracy and absence



of access to social services are found to be some major causes of poverty among rural women.

Gross and Miller, in their study attempts to explain poverty in terms of lack of income, both covert and manifest and lack of asset and availability of resources, e.g. educational, medical and recreational.

The commonality of poor rural women includes no claim or loss of entitlement to resources, capability deprivation, vulnerability to natural disasters, i.e. flood and financial inability to live everyday life. Poor housewives don't know and fail to learn the cause of their miserable conditions.

Apart from this, gaps in wages, prevalence of low-paid occupations in a lowly family support atmosphere for work, various challenges that women face in accessing public benefits are some factors that place women at high risk of poverty. Women who are into construction work carry bricks and water, do earth work on day to day basis are lowly paid. Contractual nature of construction work results insecurities among women and made them susceptible to the risk of loss of job. Women are conditioned to get low wages which is not as per the work hours they spend on field.

Pay inequality among women despite increasing number of women in work, has expediated occupational gender segregation. Even distribution of skills and training for women reinforces a gender stereotypical attitude. Women are mostly found to be engaged in hairdressing or tailoring while men are engaged in diverse forms of employments that include mechanics, carpenters, tailors, craft workers and metal workers and so on. Work such as painting, masonry, or other specialized trades are predominantly under men's domain and women are hardly encouraged to learn such skills. Such occupational segregation has created a division of wages among male and female when women are paid lesser than men. Women's access to employment is found only in the job of lower echelons of the hierarchy (Report on Adult literacy rate, UNESCO, Institute for statistics).

Women entertain fewer training opportunities than men. Male literacy rate was pegged at 82.14 percent compared to 65.46 percent female literacy rate in urban areas as per 2011 census.

Less income for women compared to men is symptomatic to educational deprivation, want of health care facilities. This has created a cycle of poverty among women and further incapacitated women. Female headed households, or single mother households are at the top risk or susceptible to poverty because they have fewer income earners to afford financial backing for their household. As per UN women report, 2019, India inhabites 12.5 percent single parents, 4.5 percent of all households are single mother

households with poverty rate of 38 percent among lone mother household.

Another statistics on growing numbers of single mother households across developing countries could also contribute to poverty in women due to their lack of access to critical resources for livelihood. It is also found that children of single mother households in rural areas are often deprived of availing the prospects to attain a decent life and meet the basic needs i.e. health and education. Another equally perilous trend in rural areas is emotional instability while parenting for which poverty and deprivation could be primarily blamed for. The burden of informal care work or child nurturing falls predominantly on women, which made them work longer and harder than men. Prevalent social bias is equally responsible for women facing trouble to obtain formal employment and less wages. This in turn deepens the cycle of poverty for women.

The society imposed ideas on family leads women to a biased and unfavorable condition where women perform crucial work, often, without pay and without due recognition. The sense and feel of failure is apparent in every other areas of her life including attaining citizenship of a country, enjoying employment benefits, practicing self-actualization through play and self-expression.

Neo liberal trends further accentuates stereotypical patriarchal beliefs that made women work harder, yet, consume and spend fewer resources on themselves, i.e. leisure time, holidays etc. Mere reflection of the gender disparity is seen even in exercising of equal autonomy by a woman in household as compared to her male counterpart. Bradley's (1999) work suggests that how working women face constraints in reconciling paid employment, family and reproductive work. Constraints related to the distance and proximity of the place of paid work to home (Gregson and Lowe, 1993) and of everyday coordination limit the available opportunities of women.

NEOLIBERALISM: SHUNNING OR SHINING TRANSFORMATIVE CAPACITY OF WOMEN

Economic implication of neo-liberalism is found in increased competition among rural families and households that further demands extra efficiency, more productivity, sustainable production systems and quality control. In a patriarchal arrangement, women are made to become 'efficient' neoliberal subjects that defy the traditional role of Indian women. The quality reform that coincided in educational expansion, training and extension services made rural women prepare for the "free" market. Liberalization claims to have



eliminated socio-cultural constraints to woman's work and productivity, dismantled legal barriers to woman's access to and control over resources such as inheritance of land, access to financial services and credit etc. Nevertheless, female educational attainment and participation of women in labor force have increased over the last three decades (OCED report, 2011).

Professionalism' has become one of the popular market trends promoted by Neoliberal policies, considering individual as an agent of development (Nightingale, 2005). Some parallel trends of neoliberal policies count improving literacy rate among women with increasing enrollment in education, feminization of labour force and women in paid work (Gupta, 2005; Raghuram, 2001). Neoliberalism (alongside globalization) has transformed the requisite set of skills for employment with centering focus on digital literacy, business and marketable skills, media and communication etc. (Ghosh,1996).

Critical dialogues on the perspective of neoliberalism in academic circles focus on the contradictory nature of neoliberal policies that could disrupt the development. Women are gradually excluded from fruitful productive job and pushed towards occupation in the fringe (Mathew, 1995). Although the rate of employability has been positively increased among women as a result of neoliberalism, certain sections of population especially the lower middle class women have been encumbered by the adverse consequences of neo liberalism.

The framework of neoliberalism assigns 'responsibilities' in a consumerist fashion to women by providing them the opportunities to mobilize themselves through collective struggle with a transformative agenda, saying that it is actually a condition to enjoy prerogatives and 'rights'. As per what David Harvey (2005) postulates, neoliberalism is a sum of propositions that consider the progress of human welfare through development of individual entrepreneurial skills. The association of women in informal economy can harness the transformative capacity of housewives of the rural dwelling households. A sweeping change in personal agency apparently found among women after they participated in village club, community groups or SHGs.

The strategies employed in microcredit programs is criticized for perpetuating unequal relations between lender and borrowers. The 'underlying gender ideology' embedded in the programs of state-sponsored Self Help Groups (SHGs) in the Indian context ensure compensation or repayment by only targeting women. A publication by Nirantar (2007) cited, "women can be located easily...they cannot run away, leaving their

homes; they can be persuaded to repay more easily as they feel shame more quickly and consider non-repayment a matter of family honour." Lamia Karim (2011) in her book explains how notions like 'shame and honour' are treated as 'collateral' in ensuring loan repayment in Grameen Bank schemes in Bangladesh. A flock of women suicide in Andhra Pradesh in the last decade are treated as the implication of microfinance. Arunachalam, (2011) in his book uncovered the process, further, see-through the amount of pressure by moneylender on women as debilitating results of microfinance model.

According to critics of neo-liberalism, in an arrangement to organize housewives and poor rural women through community organization, the confused ideas of 'co-management and co-responsibility', 'cost recovery', 'co-financing' could only shift the burden of responsibility onto poor women. Molyneux, (2012) is of the view that community participation and voluntary work make women directly subordinated to the disciplines of the market.

CONCLUSION

Sudha Deshpande (1993) argues on the same context, "Exploitation of women in the labour market is bad. Yet, women not to be exploited in the labour market will be worse." However, increasing employability of women is not consistent with the rights enjoyed by them. Deregulation of labour markets and fragmentation of production processes have generated demand for casual (less secured), low skilled, informal contracts which put further implication on the adverse circumstances for female labour with meager pay for huge labour (Kundu,1997; Chanda and Sahu, 2002). Although a large gender gap is found to exist in employment and earnings, women's participation in the labour market is required not only to attain economic independence but also owing to the fact that mother's participation in labor market could limit the outcome of relative child poverty rate by increasing total household income. Woman's access to market and earnings has far greater impact on the well-being of children.

Neo liberalism, instead, leads to gradual makeover of women with new liabilities, the roles that women play are not changing; rather the space they are living becomes chaotic with competing identities.

Without state intervention, unregulated market freedom harping on profit-at-any-cost principle could susceptible to nurture more inequality by serving the interest of the ultra-rich section. Poor woman as constructed to be 'rational economic agent' to exercise choices under the framework of neo-liberalism is dubious. Deprivation and destitution of woman usually



affect the rationale self of women. Poverty makes this starta of women too confused to perceive what constitute their wellbeing and development.

The state centric choice based intervention is one path the author would like to recommend in order to ensure equal distribution of wealth and income for women, educational opportunities, health care, employment opportunities, life expectancy, infant mortality, land rights and so on . For those women who prioritize information and education over other development needs, empowerment lies only in socialization, meeting the needs of the family and those who are in close knit. Women who prefer to be economically independent have to learn their rights in order to have a sense of equal worth and about the avenues opened to pursue their goal. The practical approach to look into the problem for an explanation can be found in identifying the actual needs of the needy through gathering of facts and analyzing the problem in informal sectors. Ideal solution rests in creating a conducive environment for women with strategic planning that involves community voluteers with an aim to develop certain need based strategies and making women both consumer recipient and producer of services.

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Footnotes:

[1]G 20: is group of major economies of developing nations emerges at the 5th ministerial WTO conference, held in Mexico in August 2003. The original group of signatories went through changes and took different names as G 21, G 22 or G 23.



EXPERIMENTAL INVESTIGATION ON CONVENTIONAL CONCRETE BY PARTIAL REPLACEMENT OF CEMENT WITH GLASS POWDER

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ABSTRACT

Due to global warming the need to cut down energy consumption has increased. The effect of global warming has impacted everyone on the planet and is a well-recognized concept. High levels of energy are needed to produce cement, which release large amount of carbon dioxide (CO₂) and also contributes to the green house gases. Atmospheric levels of carbon dioxide have risen by about 30 percent over the past 200 years. Each year approximately 111 million tons of controlled waste from household, commercial and industrial waste is disposed of in landfill sites in worldwide causing a rise in landfill costs and environmental problem. The use of recycled waste glass in Portland cement and concrete has attracted a lot of interest worldwide due to the increased disposal cost and environmental concern. Glass used for containers, jars and bottle is soda lime silica counts for 80 percent of the recycled glass based application. In this project the effect of the use of 'Glass Powder' as replacement of cement to assess the pozzolanic nature of fine glass powder. Number of test were conducted to study the effect of 10%, 20% and 30% replacement of cement by glass powder on compressive strength and split tensile strength.

KEY WORDS: Glass powder, recycled waste, workability, Compressive strength.

1. INTRODUCTION

A major component of concrete is cement, which has its own environmental and social impacts and contributes largely to those of concrete. The cement industry is one of the primary industrial producers of carbon dioxide (CO₂), creating up to 5% of worldwide man-made emissions of this gas, of which 50% is from the chemical process and 40% from burning fuel. Glass is an amorphous solid that has been found in various forms for thousands of years and has been manufactured for human use since 12,000 BC. Glass is one the most versatile substances on Earth, used in many applications and in a wide variety of forms, from plain clear glass to tempered and tinted varieties, and so forth. The interest of the construction community in using waste or recycled materials in concrete is increasing because of the emphasis placed on sustainable construction. Glass is an inert material which could be recycled and used many times without changing its chemical property. This paper

reports the results of an experimental investigation on the use of glass powder in partially replacement cement in concrete applications and summarized the behaviour of concrete involving partial replacement of cement by waste glass powder 10% to 30% at interval of 10% each.

In this research, the aim is to study the usage of glass in powdered form as a partial replacement of cement and its impact on compressive strength and split tensile strength of concrete. However, most of the studies are related predominantly to the partial replacement of glass powder in cement. Use of waste and by- product as cement is of great practical significance; because of about 25% of concrete comprises cement. There are various types of waste materials that can be considered for use as cement. The experimental study for preparing nine cubes of seven different mixes using cement partially replaced by waste glass powder at varying percentage of 10%, 20%, 30%, and to study the compressive strength and split tensile properties.



1.1 Objective of the work

- To study the existing methods of disposal of glass waste.
- To economically compare conventional concrete with the concrete modified using glass waste.
- To investigate the practicality, versatility and Feasibility of utilizing recycled glass as a partial replacement to cement.
- To identify the effects of adding waste glass powder on the fresh properties of concrete mixes such as workability by slump measures.
- To study the influence of waste glass on hardened properties of concrete mixes such as: density and compressive strength, and split tensile strength.

1.2 Scope of the Work:

- To know the effect of the different types of glass powder on concrete strength.
- Effect of glass powder on high strength concrete with various w/c ratios.
- Effect of glass powder on strength of concrete with combination of glass powder with different strengthening agent.
- To know the exact reason behind the increment in strength of concrete.
- To know the effect of glass powder on bond strength between inter-materials and between materials and steel.

2.MATERIALS USED

2.1 CEMENT

Cement is an extremely fine-grounded material with adhesive and cohesive properties and acts as a binding material in concrete.

The properties of concrete are very much influenced with the properties of cement, hence if it of worth importance to know the cement properties. Following are the main tests conducted to know the cement properties.

- Standard consistency test.
- Initial setting time
- Final setting time
- Specific gravity.

Table No.1 Properties of Cement

PROPERTY TEST	RESULTS	REQUIREMENT OF IS: 8112 - 1989
Setting time: a) Initial b) Final	50min 10Hr	Should not be Less than Should not exceed 30 Min 600Min
Standard Consistency	32%	-
Specific Gravity	3.15	-
% of Fineness	6%	-

2.2 AGGREGATES

Aggregates are important constituents of concrete and they constitute 75 to 80% of total volume of concrete. They reduce shrinkage and effect economy to a great extent. As aggregates are main part of a body in concrete, its properties affect the economy to a great extent.

Following are the properties of aggregates, which effect concrete.

i. Size

Largest maximum size that can be under given set of conditions should be used. Using largest size will result in:

- Reduction in water content.
- Reduction in drying shrinkage.

Generally 80mm is the largest size of aggregates in concrete, which is generally used.

ii. Shape: Shape of aggregate is an important characteristic since it affects workability of concrete. As per shape they are classified as rounded irregular or partly rounded, angular, flaky. The angular aggregates are generally preferred as compared to other due to their durability and strength in concrete and good binding capacity.

iii. Texture

Generally rough texture aggregates are preferred as compared to smooth due to their good binding capacity. Rough texture increases the surface area, which increases the bonding strength of concrete.

iv. Strength

Strength of aggregates is defined as the resistance to given set of forces. It is measured as its crushing value i.e. resistance to crushing loads and impact value.

Table No.2 Properties of Aggregates

PROPERTY TEST	RESULTS	
	Coarse Aggregate	Fine Aggregate
Specific gravity	2.79	2.61

2.3 Glass Powder

Glass powder is an extremely fine powder made from ground glass. It can be used in a number of industrial and craft applications and is often available through supplier of glass and industrial supplies. High precision machining equipment is necessary to prepare it, as it needs to be very uniform, with an even consistency. Costs vary, depending on the level of grind and the applications.

Some companies use recycled glass to make their glass powders, while others may use specially made glass. The process can involve dry or wet grinding to achieve particles of the desired size. Pigments can be



added to make coloured glass powders, and companies can also work with coloured glass if they want to make powders of a particular colour, like blue. The finished product can be hazardous and must be handled with care.

Specific gravity of glass powder = 2.31

3. EXPERIMENTAL METHODOLOGY

The following tasks are to be carried out in order to achieve the research objectives:

1. Properties of all ingredient materials cement, sand, aggregates, glass powder are studied experimentally.
2. The design of the required concrete mix is made.
3. In order to improve the performance of concrete the glass powder is partially replaced in cement.
4. For different doses of glass powders the concrete parameters such as compressive strength and split tensile strength is determined.

In this experimentation, an attempt would be made to find out the properties of concrete produced by replacing the cement with waste glass powder in various percentage ranging from 10% to 30% increments of 10% (10%, 20% and 30%). The experimental investigation would include casting and testing of cubes specimens to study the compressive and split tensile strength of concrete cubes. The Grade of concrete will be M₂₀.

3.1 Mix Calculations:

- volume of concrete = 1 m³
- volume of cement = 0.135 m³
- volume of water = 0.1836 m³
- volume of all in aggregates = 1 - (0.135 + 0.186) = 0.679 m³
- mass of coarse aggregate = 0.679 * 0.634 * 2.79 * 1000 = 1201.05 kg
- mass of fine aggregate = 0.678 * 0.366 * 2.61 * 1000 = 647.66 kg

Therefore, [C: FA: CA: W] - [1:1.42:2.58:0.43]

- Required quantity of cement = 250 kg
- Fine aggregate required f a = 356 kg
- Coarse aggregate required C a = 540 kg
- Glass powder = 29.52 kg

Table No. 3 Mix Proportions

Ingredients	Quantity
Cement (C)	383 kg/m ³
Sand (FA)	727 kg/m ³
Coarse aggregate (CA)	1103 kg/m ³
W/C Ratio	0.5

4. RESULTS AND DISCUSSIONS

In these concrete cubes of size 150 x 150 x 150 mm, cylinders of size 150 mm diameter and 300 mm length are casted in ISCM moulds as per obtained mix proportions and respective grades.

The concrete cubes & cylinders are tested under Compression Testing Machine (CTM) for 7 days, 14 days and 28 days of curing to know the compressive and split tensile strengths. The results obtained of the various tests have been systematically represented in the form of tables and comparative study has been taken up at the required stages and has been indicated in the form of graphs.

4.1 Compressive strength test results:

Compressive strength = (ultimate load / area of loading) in N/mm²



Figure 1: Compressive strength testing of a cube

Table No.4 Compressive strength test results

%Glass powder	Compressive strength for 7 days	Compressive strength for 14 days	Compressive strength for 28 days
0	16.64	19.34	24.08
10	16.95	20.14	25.31
20	17.54	21.22	26.96
30	16.98	20.65	25.14

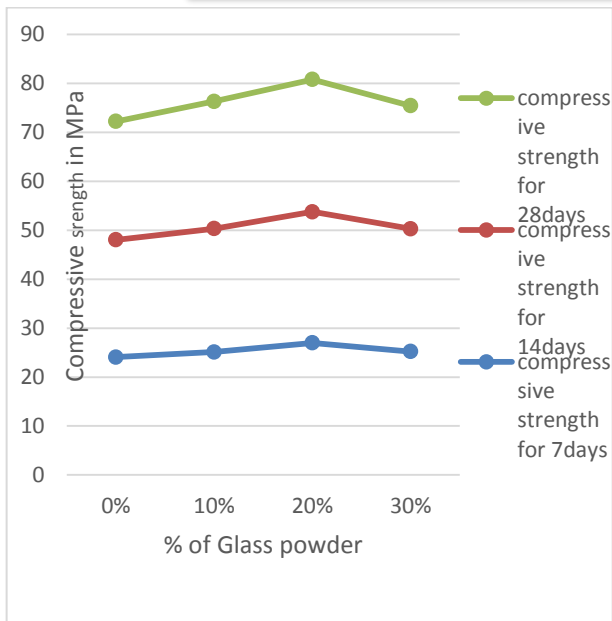


Figure.2 Graph showing compressive strength results

By comparing conventional concrete with glass powder the strength increases at some dosage. The optimum dosage of glass powder is 20% and then the strength decreases.

Table No. 5 Comparison of optimum dosage Glass powder with conventional concrete

% Glass powder	Mean compressive strength for 7 days in MPa	Mean compressive strength for 14 days in MPa	Mean compressive strength for 28 days in MPa
0	16.64	19.34	24.08
20	17.44	21.22	26.96

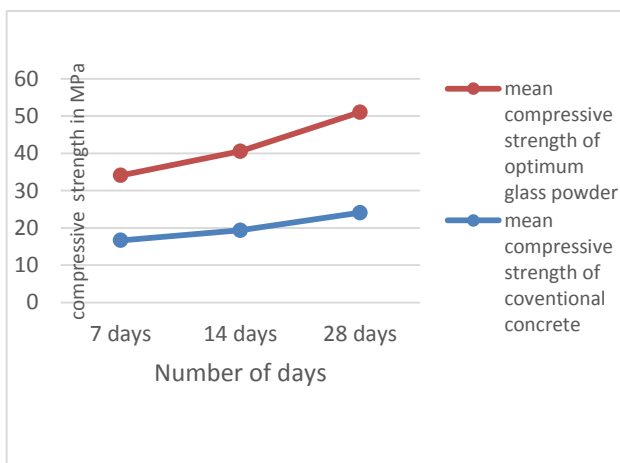


Figure.3 Graph comparing conventional concrete with optimum Glass powder

4.2 Split Tensile Strength:

$$f_t = (2p/\pi LD)$$



Figure-4 split tensile strength testing of a cylinder

Table no.6 Split tensile strength Results

%Glass powder	Split Tensile strength for 7days	Split Tensile strength for 14days	Split tensile strength for 28days
0	1.38	1.89	2.98
10	1.44	2.02	3.42
20	1.55	2.42	3.98
30	1.47	2	3.38

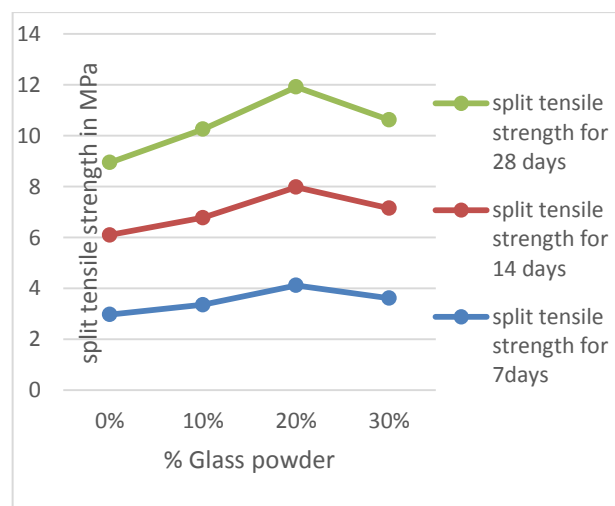


Figure.5 Graph showing Split tensile strength results



By comparing conventional concrete with glass powder the strength will be increases at some dosage. The optimum dosage of glass powder is 20% and then the strength decreases.

Table No.7 Comparison of optimum dosage Glass powder with conventional concrete

% Glass powder	Mean Tensile strength for 7days	Mean Tensile strength for 14days	Mean Tensile strength for 28days
0	1.38	1.89	2.98
20	1.55	2.42	3.98

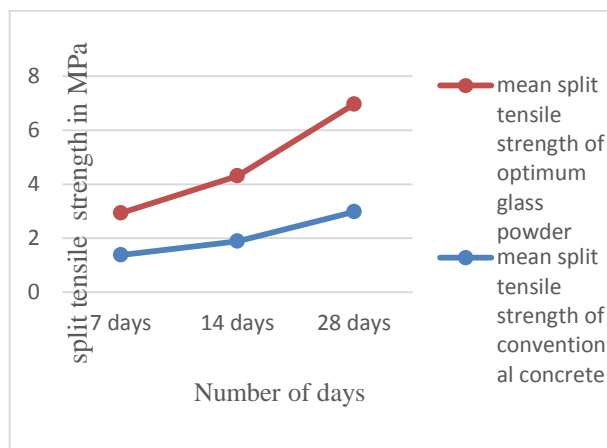


Figure.6 Graph comparing conventional concrete with optimum Glass powder

5. CONCLUSIONS

- Glass powder in concrete increase the compressive and split tensile strength effectively when compared to conventional concrete.
- The compressive strength for 28 days of conventional concrete is 24.08KN/mm², and by the tests conducted 10% and 20% replacement of glass powder shows strength of 25.31 KN/mm² and 26.96 KN/mm² respectively.
- The compressive strength for 30% replacement is 25.14 KN/mm² the compressive strength is reduced.
- The split tensile strength for 28 days of conventional concrete is 2.98 KN/mm², and by the tests conducted 10% and 20% replacement of glass powder shows strength of 3.42 KN/mm² and 3.98 KN/mm² respectively.
- The split tensile strength for 30% replacement is 3.54 KN/mm² the strength is reduced when compared to 10% and 20% replacement.

- The split tensile strength and compressive strength for 30% replacement is reduced due to hydration and binding property of concrete.
- The workability of Glass powder concrete has been found to decrease with increase in Glass powder content replacement.

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CLASSIFICATION OF HEAD AND NECK CANCER TYPES USING MACHINE LEARNING ALGORITHM

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ABSTRACT

The worldwide incidence of head and neck cancer exceeds half a million cases annually. The morbidity and mortality of head and neck cancers considering thyroid, nasopharyngeal, sinonasal and laryngeal were reported high. The degree of facial disfigurement is unrivalled. Information Gain and Chi Square, Decision and Naïve Bayes were deployed for the study. The dataset was divided into training and test data. The results showed that the performance of Naïve Bayes outperformed Decision Trees. With the application of machine learning algorithms, head and neck cancer can be classified.

KEYWORDS: *Head and Neck, thyroid, Chi Square, Information Gain*

INTRODUCTION

Cancer occurs because of mutations in the genes responsible for cell multiplication and repair (National Cancer Institute, 2015). Head and neck cancer begin with the mutation of healthy cells and grows without control around head and neck regions in the human body. The prevalence of primary head and neck tumors in Port Harcourt had increased. Sinonasal was adjudged the commonest site of cancer of head and neck cancer (Onotai and Nwogbo, 2012).

Akinkugbe *et al.*, (2010) hinted that 8.2 million people die from cancer worldwide every year (Head and Neck Cancers (HNC) inclusive); 4 million people die prematurely. 12.5% of all deaths were attributed to

cancer. If this continues, 16 million new cases would be diagnosed yearly; 70% out of the 16 million would be in developing countries.

HNCs are on the increase in Africa because of late presentation. Like many other diseases in Africans, cancer does not form part of governments' priority list. This may be due to lack of awareness of the real burden of the disease because the prevalence still remains largely undetermined in this environment. The epidemiology of cancer increases every year especially in developing countries like Nigeria.

The epidemiological information of HNC calls for in-depth research where computing methods can be



adopted to diagnose without delay so that the morbidity and mortality associated with late presentation could be drastically reduced.

RELATED WORK

Researches had shown the prevalence of head and neck cancer, different approaches on the use of diseases are presented below:

It was reported that more than 70% of throat cancers are at an advanced stage when discovered due to late presentation (American Cancer Society, 2002). Head and neck cancer specifically, nasopharyngeal cancer was the commonest cause of death in young men in Southeast China and Taiwan (*Titcomb, 2001*). Laryngeal cancer incidence is higher in African Americans, Asian and Hispanic populations and there is a lower survival rate for similar tumor states in African Americans with head and neck cancer (*Gourin et al., 2006*).

Heikki (2002) averred that the effect of professional diagnostic delays was a strong predictor of survival of patients of laryngeal cancer (squamous cell carcinoma). The method used was a population-based sample of 66 patients with Laryngeal Cancer Squamous Cell Carcinoma (LSCC) in Northern Finland between 1990 and 1995 which were investigated using statistical analysis.

Jajroudi *et al.* (2014) predicted the survival of thyroid cancer where ANN (Artificial Neural Network) and Logistic Regression were used. Effective features in thyroid cancer had been selected based on supervision by radiation oncologists. After data pruning, 7706 samples were studied with 16 attributes.

Amanda *et al.* (2018) evaluated the prediction model for weight loss (WL) in head and neck cancer (HNC) patients who were treated with radiation therapy (RT). Two prediction modes at different time points were developed to predict weight loss ≥ 5 kg at 3 months post-radiation therapy which were: during radiation therapy planning and at the end of treatment (EOT) using additional on-treatment toxicities and quality of life data. CART algorithm was used on the two prediction models. The study deduced that the potential value of an informatics had facilitated insight into the prediction of weight loss using the CART algorithm.

Fabio *et al.* (2017) used a predictive model to distinguish between malignant and benign thyroid nodules. Chi-square test was for categorical variables and t-test for continuous variables. Logistic regression was used to identify features independently associated with malignancy (dependent variable).

Adisa *et al.* (2012) conducted a study on the implications for treatment planning in limited resource settings on pediatric head and neck cancers in Nigeria. A retrospective study using data from the University College Hospital (UCH) Ibadan between 1990 and 2008 was conducted. Statistical analysis was used on the categorical data which were expressed as percentages and Chi-square statistics. Continuous data were summarized using mean, standard deviation (SD) and confidence intervals. The data were further compared using *t*-test and/or one-way analysis of variance test as appropriate. The outcome was that head and neck cancer occurred in children.

Renske *et al.* (2010) reported the knowledge of general practitioners about nasopharyngeal cancer at the Puskesmas in Yogyakarta, Indonesia. The level of awareness of general practitioners in prompt diagnosis of nasopharyngeal cancer was shallow.

The study of Jyoti *et al.* (2011) tends to achieve development of a predictive data mining for heart disease diagnosis. Three different supervised machine learning algorithms i.e. Naïve Bayes, K-NN, Decision List algorithm were used for analyzing the dataset. The use of Naïve Bayes performed best among K-NN and Decision Tree to predict heart disease.

Anurag and Sudsanshu (2010) compared two data mining techniques on thyroid cancer dataset. C4.5 and C5.0 data mining techniques were compared such that tree size of C4.5 was very large compared to C5.0. After pruning C5.0 tree generated more accurate rule set than C4.5.

Dursun (2009) worked on analysis of prostate cancer data using a data mining approach. Three popular data mining techniques such as decision trees, artificial neural networks and support vector machines along with the most commonly used statistical analysis technique logistic regression to develop prediction models for prostate cancer survivability.

METHODS

Head and neck cancers types can be classified using machine learning algorithms which consists of different components such as data collection, data preprocessing, feature selection methods (Filter-based methods) and building of models and predictive result.



HNC Diagnosis Model

The features of HNC are considered to predict the type of cancer in head and neck region a patient has.

Hence diagnosis of HNC is directly related to the features (x) of HNC in patient where the features are represented by x_1, x_2, \dots, x_n .

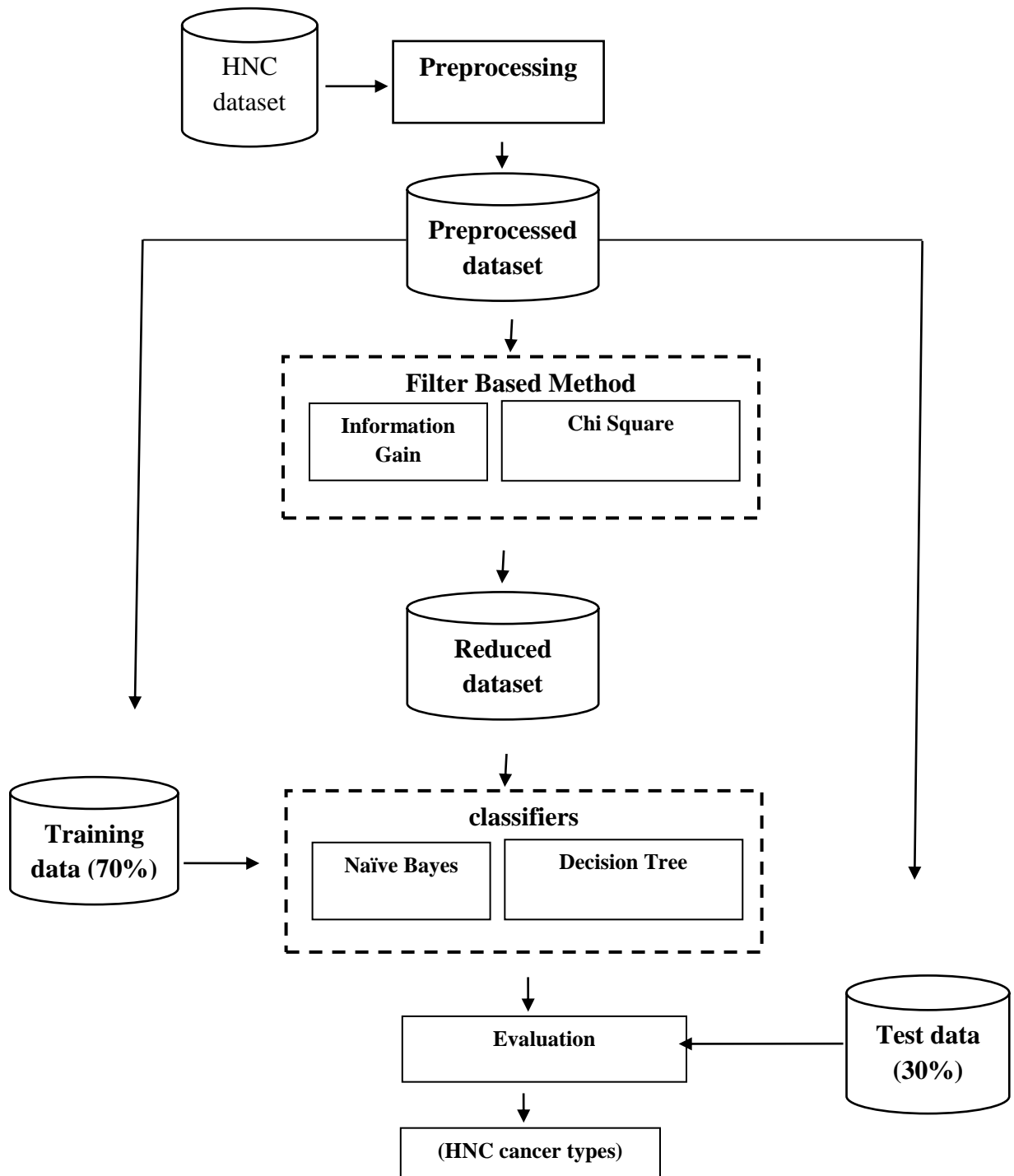


Figure 1: Architecture of HNC diagnosis model



HNC Data Set

The raw data were collected from three hospitals: University of Medical Sciences, Teaching Hospital, Akure, Federal Medical Centre, Owo, Ondo

State and Obafemi Awolowo University Teaching Hospital Complex, Ile-Ife, Nigeria.

The dataset consists of four classes which include Nasopharyngeal cancer, sinonasal cancer, laryngeal cancer and thyroid cancer, eighteen features

Table 1: Data Set

s/n	Feature	Attribute value
1	Bleeding	Mild/ moderate/severe/?
2	Poor appetite (Anorexia)	Yes/no
3	Weight loss	Yes/no
4	Snoring	Yes/no
5	Swelling	Small/medium/large
6	Nasal blockage	Yes/no
7	Mouth breathing	Yes/no
8	Hyponasal speech (poor speech)	Yes/no
9	Halithosis (mouth odour)	Yes/no
10	Facial Asymmetry	Yes/no
11	Fatigue	Yes/no
12	Hoarseness	Yes/no
13	Dyspnoea (difficult breathing)	Yes/no
14	Tinnitus (abnormal sound in the ear)	Yes/no
15	Haemoptosis (coughing out blood)	Yes/no
16	Proptosis (bulging eye)	Yes/no
17	Odynophagia (painful swallowing)	Yes/no
18	Dysphagia	Yes/no
	Class- Cancer type	Sinonasal/nasopharyngeal/ laryngeal/ thyroid

FEATURE SELECTION METHOD

After the data collection and preprocessing, filter -based methods followed:

Feature selection is the process of selecting a subset of relevant features for use in model construction (Jason, 2014). The reason for performing feature selection is to remove attributes that do not contribute to the efficacy and the efficiency of the models.

Two feature selection methods deployed were information Gain and chi square. They are described as follows:

I.Information Gain: Information Gain (IG) measures how much information a feature gives about the class. Features that perfectly partition should give maximal information. Unrelated features should give no information. The features with highest information gain are rated above the lowest features.

The Information Gain can be calculated using Equation 1 to find the entropy of the features and classes and use Equation 2 to calculate the Information Gain of each features in the HNC dataset.:

$$E = - \sum_{i=1}^n p_i \log_2 p_i \tag{1}$$

where P_i is the proportion of examples in HNC that belongs to the i-th class

n is number of classes, E is entropy

The gain of this test is

$$\text{Gain} = \text{Info (Class: cancer type)} - \text{Info (Attribute: for example Bleeding)} \tag{2}$$

II. Chi Square Test

Chi-square test was used to select relevant attributes in the dataset. It is a test to measure dependence between features, using this function “weeds out” the features that are the most likely to be independent of class.



Calculate Chi square (χ^2) statistic using Equation 4

$$\chi^2 = \sum \frac{(O-E)^2}{E} \quad 3$$

O is the observed frequency/count

E is the expected frequency/count

χ^2 is the Chi Square

Σ is the sum of above across all cells

SELECTING THE MODELS MODELS

After the filter-based method, the HNC data set consists of 1473 records and 18 features. The dataset was divided into: training data and testing data. 1031 records were used for training data while 442 records were used for test data. The training data or cases were assumed to be represented as a pair $[x_1, x_2, x_3, \dots, x_n \rightarrow y]$ where $x_1, x_2, x_3 \dots, x_n$ are vectors of attribute values describing some cases while y is the appropriate class or target.

The models considered for head and neck cancer prediction are: Naïve Bayes and Decision Tree.

A. Naïve Bayes

Naive Bayes is a probabilistic classification algorithm that is based on Bayes' Theorem. Naïve Bayes is a conditional probability model where the features are independent of each other.

It is a conditional probability model that enables conditional predictions. Bayes theorem provides a way of calculating posterior probability $P(c|x)$ from $P(c)$, $P(x)$ and $P(x|c)$ using the Equation 5

$$P(c|x) = \frac{P(x|c)P(c)}{P(x)} \quad 5$$

$P(c|x)$ is the posterior probability of class (target) given predictor (attribute) of class.

$P(c)$ is called the prior probability of class.

$P(x|c)$ is the likelihood which is the probability of predictor of given class.

$P(x)$ is the prior probability of predictor of class.

It combines this model (conditional probability) with a decision rule. One common rule is to pick the hypothesis that is most probable; this is known as the Maximum a Posteriori (MAP) decision rule.

Bayes Algorithm has three phases: learning phase, testing phase and estimate class phase for categorical distribution as presented below:

Algorithm

Learning phase

For each class value C_m

 Compute $P(C_m)$ //compute class /HNC types

For each attribute X_n

 // categorical distribution for C_m and x_n

 if $P(x_n|C_m) = 0$ then compute $P(x_j|C_m)$

$$P(x_j|C_m) = \frac{\text{count}(T, C_m, x_j) + 1}{\text{count}(T, C_m) + k}$$

 Else

$$P(x_n|C_m) = \frac{\text{count}(T, C_m, x_j)}{\text{count}(T, C_m)}$$

$P(C_m|x) = P(x_1, x_2, \dots, x_n|C_m)$ // compute distribution $D_{m,n}$

 // Using the chain Rule of the conditional probability

$$P(C_m|x) =$$

$$P(x_1|C_m)P(x_2|C_m, x_1)P(x_3|C_m, x_1, x_2)$$

$$\dots P(x_n|C_m, x_1, x_2, \dots, x_{n-1})$$

Testing phase

$$\text{Given unknown } x' = [x'_1, x'_2, \dots, x'_n]$$

Estimate class

$$\text{Return } C_m = \text{argmax}_{C_m} = P(x|C_m)$$

B. Decision Tree

A decision tree is a decision support tool that uses a tree-like graph or model of decisions and their possible consequences. Decision tree is a predictive model to go from observations about an item (represented in the branches) to conclusions about the item's target value (represented in the leaves).

The goal of decision tree is to create a model that predicts the value of a target variable based on several input variables. A tree can be "learned" by splitting the source set into subsets based on an attribute value test. This process is repeated on each derived subset in a recursive manner called recursive partitioning. Decision tree is constructed in a top-down recursive divide-and-conquer manner. (Jiawei *et al*, 2011; Ian and Eibe, 2005).

RESULT AND DISCUSSION

Results of the Information Gain on Decision Tree (C45) and Naïve Bayes

The Information Gain of the features and Chi Square values are presented in Table 2.



Table 2: Information Gain and Chi Square results

Information Gain		Chi Square	
Features	Gain Values	Features	Values
Nasal Blockage	0.791	Dyspnea	0.959
Dyspnoea	0.757	Haemoptysis	0.959
Haemoptysis	0.757	Nasal Blockage	0.814
Snoring	0.749	Hoarseness	0.784
Hoarseness	0.74	Snoring	0.752
Facial Asymmetry	0.542	Fatigue	0.577
Fatigue	0.362	Poor Appetite	0.561
Hyponasal Speech	0.335	Odynophagia	0.559
Proptosis	0.325	Facial Asymmetry	0.557
Tinnitus	0.317	Tinnitus	0.494
Poor Appetite	0.305	Hyponasal Speech	0.364
Odynophagia	0.303	Mouth Breathing	0.338
Mouth Breathing	0.302	Proptosis	0.332
Halithosis	0.269	Halithosis	0.312
Swelling	0.236	Dysphagia	0.237
Bleeding	0.225		
Dysphagia	0.206		

After the methods had been set up experimentally, we considered the performance metrics of the models using accuracy, precision, recall and F1score. The selected features by the Information Gain were trained on Decision Tree (C45) and Naïve Bayes

models. The result is given in Table 3. Figures 2 and 3 show the graphical representation of accuracies of the classifiers with both Information Gain and Chi Square methods.

Table 3: Result of the performance evaluation for the models using Information Gain method

Model	Accuracy	Precision	Recall	F1 Score
Decision Tree	93.21%	0.943	0.932	0.931
Naïve Bayes	94.12%	0.945	0.941	0.941

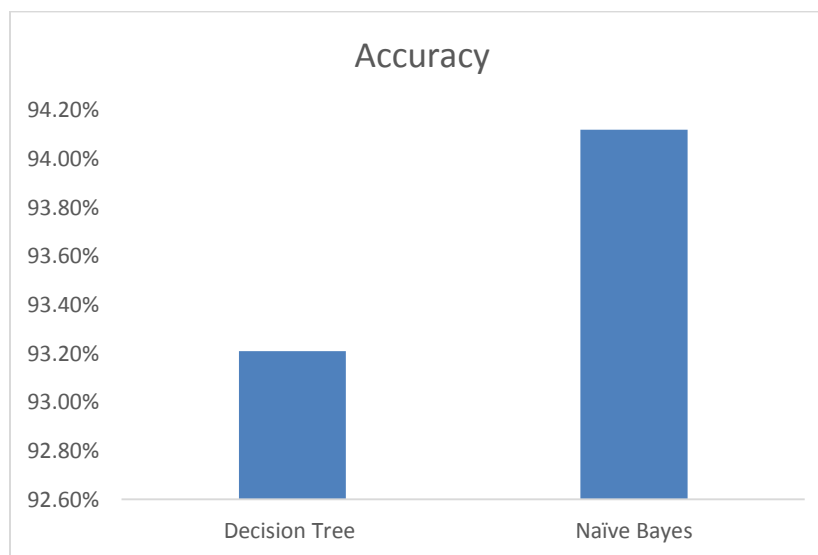


Figure 2: Accuracy of the learning algorithms (models) with information gain



Results of the Chi Square on Decision Tree (C45) and Naïve Bayes

Using Chi Square feature selection method, the features selected based on Chi Square were trained on Decision Tree and Naïve Bayes. Table 3 shows the performance metrics of the classifiers.

Table 3: Result of the performance evaluation for the models using Chi Square method

Models	Accuracy	Precision	Recall	F1 Score
Decision Tree	92.76%	0.932	0.928	0.927
Naïve Bayes	93.89%	0.942	0.939	0.939

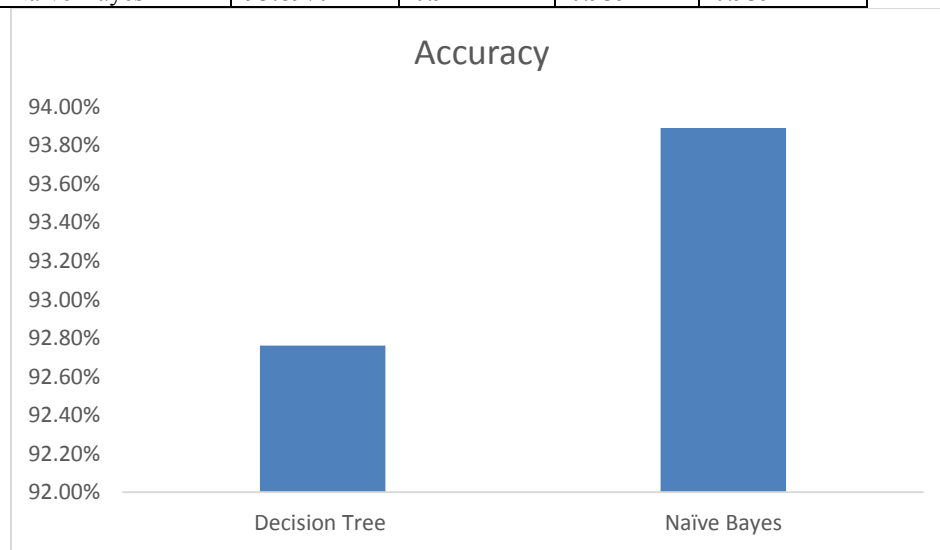


Figure 3: Accuracy of the learning algorithms (Models/Classifiers) with Chi Square

Discussion on the Performance Metrics of Head and Neck Dataset

The results of the models: Decision Tree (C4.5) and Naïve Bayes when feature selection methods such as Information Gain and Chi Square were performed, the inferences were stated below:

The HNC dataset was trained on Information Gain method with models namely Decision Tree, and Naïve Bayes. The result showed that the accuracy of Decision Tree (C4.5) was 93.21% and Naïve Bayes with accuracy of 94.12%. Naïve Bayes had higher Precision, Recall and F1 Score than Decision Tree. Based on the performance metrics, Naïve Bayes performed better than Decision Tree. This implied that Naïve Bayes was a better predictive model to predict or diagnose the type of HNC when Information Gain method was applied.

The HNC dataset was trained with Chi Square method with models namely Decision Tree and Naïve Bayes. The results showed that the accuracy of Decision Tree (C4.5) and Naïve Bayes were 92.76%

and 93.89% respectively. Naïve Bayes had higher Precision, Recall and F1 Score than Decision Tree. This means that Naïve Bayes had higher performance metrics than Decision Tree. The application of Chi Square method showed that Naïve Bayes model outperformed better than Decision Tree as depicted in Figures 2 and 3 respectively.

CONCLUSION

Cancer in head and neck regions is deadly. Late presentation and lack of access to the specialists cause a great challenge in early diagnosis in the healthcare system in developing countries. Two feature selection methods namely Information Gain and Chi Square and supervised learning algorithms namely Decision and Naïve Bayes were deployed for the study. The results showed that the model performance of Naïve Bayes outperformed Decision Trees when feature selection methods were applied. Naïve Bayes model could be employed to classify head and neck cancer types. This helps the non-specialist doctors and other primary health care workers who are not in the field of ENT to



diagnose and make referral early without delay to the appropriate specialists (ENT doctors).

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GENRE PREDICTION FOR MUSIC RECOMMENDATION USING MACHINE LEARNING

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ABSTRACT

Music applications are one of the most used applications in the world. Consumers can hear the song they like but difficult for them to find songs from the vast number of songs list. The flow of this paper is to increase the efficiency of music recommendation in terms of the genre based on the decision-tree which helps the users to get the music according to their preferences.

This model uses age and gender as an input set and genre as output. The model will predict the genre according to age and gender and the decision tree helps to reduce the complexity of the model.

1. INTRODUCTION

For every person music has a very special place in his heart and today's internet world made music easily accessible to people, nowadays people do not need to go a specific place to listen to music, they can listen anywhere easily in their mobile and they can even download in minimal charges.

Advanced technology has become the integral part of our life. To satisfy the need of the society, almost in each work, we use the technology. In current era computer science is major subject. It has many real life applications such as cloud computing [1], artificial intelligence [2], remote monitoring [3], internet of things [4, 5, 6, 7, 8, 9, 10, 11], SPP [12, 13, 14, 15, 16, 17, 18, 19], TP [20, 21, 22], internet Security [23], uncertainty [24, 25, 26] and so on. Technology is the mode by which user can store, fetch, communicate and utilize the information. So, all the organizations, industries and also every individual are using computer systems to preserve and share the information. The internet security plays a major role in all computer related applications. The internet security appears in many real-life applications, e.g., home security, banking system, education sector, defence system, Railway, and so on. In this manuscript we discuss about the protection of authentication which is a part of internet security.

Today internet world made listening music very cheap in old day's people has to buy Audio Cassette and music CD in addition with specific player and sometimes Audio Cassette and music CD of a company is not compatible with different company but now internet world made music easily accessible many company like gaana.com, Spotify, wink music, YouTube music etc.

They charge on monthly and yearly based with very minimal price and has many plans like family plan and student plan and some even give this feature for free.

Music is one of the most used mediums for entertainment. Music genre is used for optimizing the time of the users. Genre helps to classify the vast number of tracks and allocate them in the different categories. In many different ways, music can be divided into different genres, such as in mainstream music and art music, or religious music and secular music.

Genre helps the user to easily shortlist the track or music of their interest. Music is one of the vast spread industry shortlisting music tracks according to user's preference is difficult. The task is to classify various properties of provided music recordings, based on extracted sound characteristics. Music genres forecast: In this challenge, we invite you to create an



algorithm to identify the art genre of certain music track fragments

In this paper the dataset is divided into age and gender as an input set and genre is predicted as output set. In gender column “male” is denoted as ‘1’ and “female” is denoted as ‘0’. The data is used for prediction of genre based on the dataset. This helps the customer to reduce the time and can easily search for the music from the massive amount of tracks.

In a music streaming app or web application age and gender of user is input at the time of registration. With the help of algorithm, age and gender as an input genre will be predicted and music tracks are recommended according to the genre.

Decision Tree algorithm is part of the supervised learning algorithms family. Unlike other supervised learning algorithms, algorithms for decision tree can also be used to solve regression and classification problems. Decision tree helps in prediction on the given input set by certain patterns while model training.

Forms of Decision Trees Decision trees Styles are based on what kind of goal variable we have. It may be of two types:

- Categorical Variable Decision Tree: Decision Tree that has a categorical goal variable is labelled as Categorical Variable Decision Tree.
- Continuous Variable Decision Tree: Decision Tree has a constant target variable and is then called Continuous Variable Decision

The Pseudocode of Decision Tree Algorithm

- Place the best attribute of the dataset at the **root** of the tree.
- Split the training set into **subsets**. Subsets should be made in such a way that each subset contains data with the same value for an attribute.
- Repeat step 1 and step 2 on each subset until you find **leaf nodes** in all the branches of the tree.

This helps in reducing the complexity of the music streaming app. All the data is stored and the music is recommended to make the application user friendly. In order to predict the music our work recorded the data from users for better recommendation by applying feedback from users and learning their music listening behaviours.

1.1. MOTIVATION

In some papers we have found some problems searching for tracks. In our proposed work we overcome the drawback in other application. The main drawback is that recommendation of music is done according to common genre and languages. This technique is not sufficient of optimization. Even though several music recommendation systems have overcome much of the consumer preference issues, issues have been missed is recommendation of music with respect to age factor of user.

2. LITERATURE REVIEW

Generally, the recommendation system serves as information filtering and customization tool. The recommendation in our work sorts the music playlists according to user’s age. With the help of decision tree algorithm. Some scholars proposed recommendation based on content. In these type of proposed work recommendation is generated by categorizing user’s content. This works by extracting the previous preferred content. M. Daniel and J. C. Sally [27] uses lyrics features in music as content to identify the pattern of user for recommendation but that causes conflict and social issues. Steffen P. [28] proposed to create content-based analysis based on user’s playlist according to customer playlist and feedback. Advantage to content based filtering is that it is capable of recommending similar music tracks. No requirement of others profiles and feedback. The main disadvantage to content based filtering is that the content feature cannot be presented in application.

Collaborative filtering is another type of technique used by scholars for effective recommendation. This filtering approach uses correlation of users according to their profile. This filtering technique is widely used in music recommendation systems. The uses with common interest are used to recommend each other. M. Balabanovic and Y. Shoham [29] uses automated web browser of experimenting this approach. J. L. Herlocker and J. A. Konstan [30] uses task force recommendation. Task force recommendation assigns specific task. This uses both interest rating and interest association. The advantages of these type of filtering is it avoid inaccurate prediction of music items by trusting on other users browsing experience. Recommendation can be done for the users those content is not easy to analyse. In spite of the fact that collaborative filtering is widely used there are many problems which remain unsolved such as it is difficult to start recommendation which result as not an optimum performance.

Due to this advantages and disadvantages of both filtering technique. Some researchers proposed a hybrid filtering technique which combines both content based analysis and collaborative based analysis technique. Claudiu, W. N. Firan and P. Raluca [31] proposed a system in which users are collaboratively grouped together based on users rating and profile. And they recommendation is done based on content this reduce the time. H. Wang, W. Wang, J. Yang and P. S. Yu [32] uses clustering technique to form similar patterns among the users. The main advantage is that combination of these filtering technique effectively reduces the time for calculation.

2.1. DATASET DESCRIPTION

Dataset used in this project is classified in three column that is age, gender and genre. Data is collected by different survey and through feedback taken form

people and other online sources. This dataset is divided in two parts input set and output set. Age and gender are taken as input by the customer at the time of registration or login and genre is predicted according to the customer. Then music is recommended according to the prediction made by the proposed work.

Gender is denoted as 1 for **male** 0 for **female**. Genre which are used for working are Hip Hop, Jazz, classical.

This table is named as “music.csv”

Age	Gender	genre
20	1	Hip hop
23	1	Hip hop
21	0	Hip hop
24	0	Hip hop
32	1	classical
34	0	classical

Table 1. Data Set

central architecture, in which music recommendation is done based on age. During the lack of initial recommendation there is poor results in recommending music to new users in others work to overcome this problem we used age as a factor for recommendation. Further users’ feedback can be acquired to determine the music taste of new user. The core of the recommendation system is decision tree classification. With the help of this classification data set is divided into two tables. One is input set with consist of age and gender and other is output set with consist on genre. This work is divided into 2 phases.

In first phase gathering user’s personal information at the time of registration. Information such as age, gender and preferred music type. Then with these preferred types of music recommendation is done at initial phase for new uses. This problem of initial recommendation of music to new users is solved in second phase.

3. PROPOSED METHODOLOGY

The study discussed in this paper extends the understanding of decision-tree classification as its

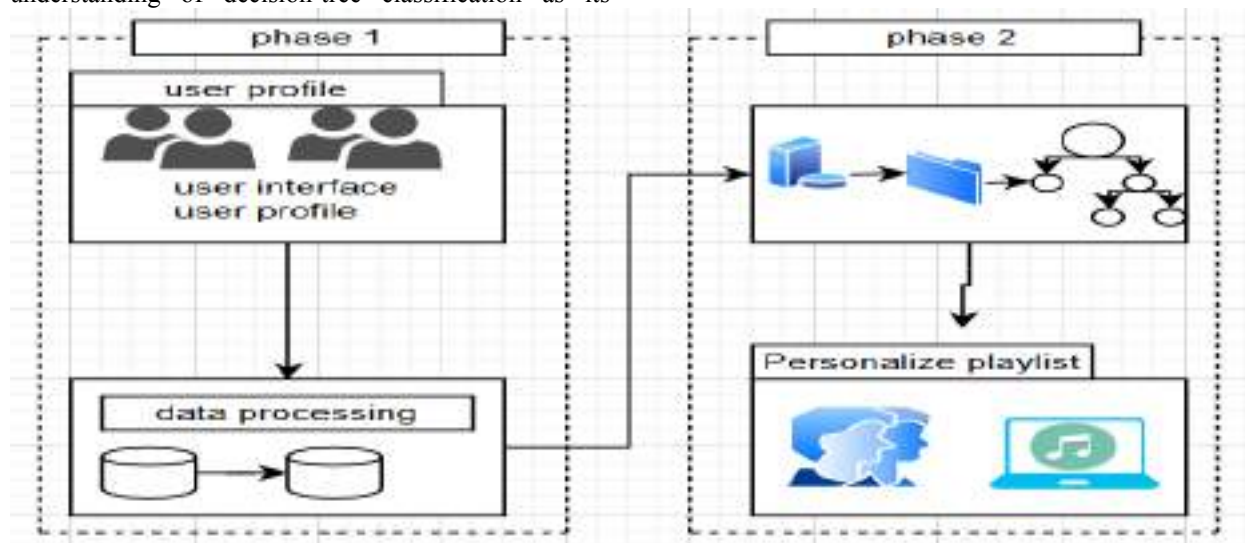


Figure 1 Two phases

In order to solve this problem, the proposed recommendation system uses information (age and gender) of the users which was gathered at the time of registration and predict the genre of the user for personalised user and then music is recommended according to the prediction made. This data used from the feedback of customers helps in making prediction with more accuracy which in results give good performance and optimize time as compared to others work.

3.1. DECISION TREE GENERATION

The allocation of data set to root node the data set is spliced into two different table. This action is

known as splitting action. This action is performed at the time of results generated by root node. For solving the attribute selection problem, researcher works and derive a solution which is getting information gain, Gini index. This function will calculate the value of each attribute and sort them and place them with respect to their values i.e., the attribute with higher value is the root node.

In decision tree classifier the data set is divided into two parts one is training set and other is testing set. This training set is then used of building the model and testing set is then used to test the accuracy of the model. Information gain or IG is a statistical property which measures how well the training examples are

differentiated by a given attribute according to their target classification.

Information gain (Y, X) = E (Y) - E (Y|X)
 Mathematical representation of information gain

$$Entropy = -\sum_j p_j \log_2 p_j$$

The Gini index can be interpreted as a cost feature used to determine splits in the dataset. It is determined by subtracting the sum of each class's squared percentages from one.

$$Gini = 1 - \sum_j p_j^2$$

3.2. BUILDING MODEL

Building the model for prediction is the practical approach for testing the accuracy of prediction. In this firstly the csv file of data set is fetched from the database. Then the attribute with high information gain is dropped from the original table. The model is build and then load for testing without keeping the expectation for high accuracy. The goal is to keep the system easy and simple for implementation. Getting of root and leaf nodes will help in understanding the model rules.

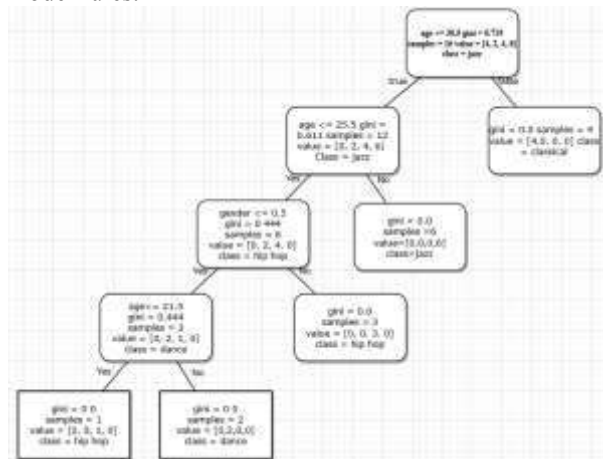


Figure 2 Decision tree algorithm

4. RESULT

In this proposed work the data is divides in two sets and test data set is used for checking the accuracy. The accuracy of model is checked by input the value form test data set and then results are compared to the predicted results.

Accuracy= (TP + TN) / (Total number of observation)

```
Out[1]: array(['hip hop', 'dance'], dtype=object)
```

Figure 3 prediction by model

In this work the prediction is made on the basis of data set give with respect to age and gender and predict the genre.

Plot graph representation of accuracy:

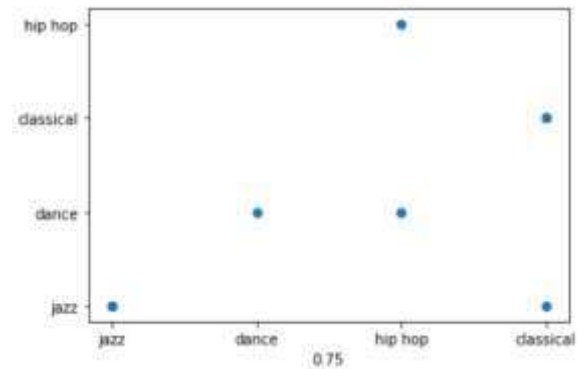


Figure 4 Accuracy Graph

5. CONCLUSION

In this paper, prediction of genre for music recommendation model is simple. Proposed system can be used to reduce problem faced during initial recommendation of music to new user. According to the results the proposed model overcome some drawbacks. The future scope of improvement includes:

1. There is no user interface provided in this project.
2. There can be more factors which will help in recommendation of music more effectively.

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EFFECT OF CASH TURNOVER, RECEIVABLES TURNOVER AND INVENTORY TURNOVER ON THE LEVEL OF LIQUIDITY

(Empirical Study of Property, Real Estate, and Building Construction Companies that Go Public in Kompas 100 Index 2013-2018)

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ABSTRACT

This research was conducted with the aim of: 1) To analyze the effect of cash turnover on liquidity; 2) To analyze the effect of accounts receivable turnover on liquidity; 3) To analyze the effect of inventory turnover on liquidity.

This type of research used in this study is casual associative research (causal associative research). The population of this research are property, real estate, and building construction companies which are included in the Kompas 100 index which are listed on the Indonesia Stock Exchange (IDX) in the period 2013-2018. The sampling technique is using purposive sampling technique. The analytical method used to test hypotheses is multiple regression analysis.

The results of the study show that: 1) cash turnover has a negative effect on liquidity measured by cash ratio; 2) accounts receivable turnover has a positive effect on liquidity measured by cash; 3) inventory turnover has an influence on liquidity measured by cash ratio.

KEYWORDS: *Cash Turnover, Receivable Turnover, Inventory Turnover, Cash Ratio, Liquidity*

INTRODUCTION

The more developed the business world, the higher the competition that companies will face, especially those with similar businesses. In facing such intense competition, companies are required to be able to maintain the continuity of their businesses in various ways. Among them by making decisions that support the achievement of corporate goals in the future, so the company can continue to improve its ability to compete. The survival of a company can be measured by the level of liquidity.

Kasmir (2013) argues that liquidity ratios are financial analyzes related to a company's ability to pay debts or obligations. The ideal level of liquidity is a condition desired by every company. To achieve this, a company needs to prepare a measuring tool that shows that the value of current assets (which can immediately be turned into money) can be used to assess the ideal level of liquidity. Sutrisno (2009) suggested that the cash ratio is a ratio that compares cash and current assets that can immediately become cash with current debt. Assets that immediately become cash are securities or securities. So it can be concluded that the liquidity ratio is the ratio used to

measure the company's ability to meet short-term obligations that must be met.

Cash is an asset whose highest level of liquidity is the standard from the basis of measurement and accounting for all other postal items and with the availability of sufficient cash, the company will have no difficulty in meeting its short-term obligations (Kieso, 2010). According to Riyanto (2012) cash turnover is a comparison between sales and the average cash amount. The higher the cash turnover in a company, the faster the company will get back a certain amount of cash. Thus increasing the amount of its current assets, especially in meeting its current debt. Dewi, et al (2017) found that cash turnover had a negative and significant effect on liquidity at PT. Astra Internasional Tbk. While research Dwinta & Rani (2018) found that there was no significant influence between cash turnover and liquidity.

According to Riyanto (2012) Receivables as one of the elements of working capital in a rotating state, where the receivable turnover period starts when cash is issued to obtain inventory, then inventory is sold on credit, causing accounts receivable, and receivables change back into cash when receivables are paid off



from debtors. The higher the level of accounts receivable turnover, the more efficient the receivables or the faster the receivables are paid efficiently (Prastowo, 2008). Hidayat (2018) found that accounts receivable turnover could affect liquidity in automotive companies listed on the Indonesia Stock Exchange. Whereas Dwinta & Rani's research (2018) found that there was no significant influence between accounts receivable turnover and liquidity.

Riyanto (2012) argues that inventory is the main element of working capital which is an asset in a state that is always spinning and constantly changing. Kasmir (2013) argues that inventory turnover is a ratio used to measure the number of times the funds invested in this inventory revolve in a period. This was also stated by Atmaja (2008) liquidity was used to measure the company's ability to meet its obligations due. If the inventory turnover of a company rotates quickly, it means that sales activities at the company are smoother and the lower the costs borne by the company so that inventory is also quickly converted into cash, so that cash flow automatically affects the level of company liquidity.

The researcher chose the property, real estate and building construction company because property, real estate and building construction companies play an important role in the field of economy and development in Indonesia. This sector is also one indicator to assess a country's economic development.

Based on the description above, the authors are interested in conducting a study entitled "The Effect of Cash Turnover, Accounts Receivable Turnover and Inventory Turnover on Liquidity Levels in Property, Real Estate, and Building Construction Companies that went public in the Compass 100 Index in 2013-2018".

LITERATURE REVIEW

Agency Theory

Jensen and Meckling (1976 in Riza, 2018) explain the agency relationship in agency theory that companies are a collection of contracts (nexus of contracts) between economic resource owners (principals) and managers (agents) who take care of the use and control of resources. Agency theory (agency theory) arises after the phenomenon of separate company ownership and management found in large modern companies so that classical company theory can no longer be used as a basis for such company analysis.

Working capital

Working capital is needed in carrying out the activities of a company, and working capital is very important in supporting the smooth operation of the company's operations, so that the company can run well on an ongoing basis (Lukman and Dira, 2009). Working capital is a company's investment in short-

term assets such as cash, securities (securities), trade receivables and inventories. Net working capital is current assets minus current debt, for example bank loans, promissory notes, trade debts, wages and tax debts.

Cash Turnover

Hanafi (2011) argues that cash is the least productive asset compared to other assets. Because it is viewed in terms of productivity, holding assets to a minimum is a good choice for the company. According to Kasmir (2013), cash is cash that is owned by the company and can be used at any time. Cash is the most needed component of current assets to pay for the various needs that are needed. In the balance sheet, cash is placed at the top because the cash is the most liquid among other goods, in the sense that if the company is in need / need money, it can be directly taken from cash. Therefore, the availability of cash in an amount which is always sufficient is highly expected by the company management (Fahmi, 2013).

Riyanto (2012) suggested the factors that influence the size of a company's cash inventory include: a balance between cash in and cash out, deviations from the estimated cash flow, a good relationship with Property Companies, Real Estate, and Building Construction. The size of the cash inventory owned by the company will determine the cash turnover and high and low cash turnover can reflect the efficiency or not the use of cash in the company. The size of the cash inventory is very influential on liquidity (Munawir, 2010).

Receivables Turnover

According to Sutrisno (2009) Receivables As one element of working capital in a rotating state. Where the receivable turnover period begins when cash is issued to obtain inventory, then the inventory is sold on credit, causing accounts receivable, and receivables change back into cash when receivables are paid off from debtors (Riyanto, 2012).

To measure the level of efficiency of receivables, two measures are used, namely the level of accounts receivable turnover or the average receivables collected. The higher the level of accounts receivable turnover, the more efficient the receivables or the faster the receivables are paid efficiently (Prastowo, 2008). The level of accounts receivable turnover depends on the payment terms provided by the company.

Soemarso (2010) states that accounts receivable turnover is showing several times a company collects receivables in a period. Receivables turnover shows the efficiency of a company in managing its receivables. Low accounts receivable turnover shows that the collection efficiency is getting worse during that period because of the length of time the billing



was made ". Warrant et al (2012) explain that: accounts receivable turnover measures how often receivables turn into cash in one year ". Next Stice and Skousen (2010) referred to as accounts receivable turnover is a way that measures how often accounts receivable turn into cash in a year, by calculating the division between net sales and average trade receivables that have not been paid during the year.

Inventory Turnover

Raharjaputra (2009) states that inventory is a part of a company's investment which is a company's assets using various sources of funds. Whereas Rudianto (2009) defines that "inventory is a number of finished goods, raw materials, goods in a process that are owned by a company for the purpose of selling or further processing. Inventories are often a sizeable portion of assets. If there is not enough inventory, sales volume will fall below the level that can be achieved. Conversely, too much inventory exposes companies to storage costs, tax insurance, obsolescence and physical damage (Subramanyam and Wild, 2010). Rangkuti (2007) states that inventory has at least three main functions, including: the function of separating, the function of economic size, and the function of anticipation. Hongren et al (2008) suggested that manufacturing companies generally have several types of inventory, including: direct raw material inventory, process inventory, and finished goods inventory. This is reinforced by Kasmir (2013) which states that in practice there are at least three types of inventory, namely raw materials, processed goods or semi-finished goods and finished goods.

Suharli (2006) argues that inventory turnover determines the number of times the inventory is sold or replaced with new inventory for one year, and provides several measurements regarding the liquidity and ability of a company to convert its inventory into money appropriately. Meanwhile, according to Samryn, (2011) this ratio is expressed as a decimal and states how many times the average inventory of finished goods is rotated or sold in a period of time, usually a year. Kasmir (2013) defines "inventory turnover is a ratio used to measure the number of times the funds invested in this inventory revolve in a period. If the inventory turnover is high, it shows that the company is working efficiently and the company's liquid is getting better ". To find out a good inventory turnover can be done with the first two events, comparing the cost of goods sold with the value of inventory, and second, comparing between sales of inventory value. If the ratio obtained is high, this will make the company work efficiently and liquid inventory will be better. Likewise, if inventory turnover is low, it means that the company is working inefficiently or unproductively and there is a lot of inventory piling up. This will result in investments in

low returns (Pertiwi. 2013).

Liquidity

Liquidity is the ability of a company to meet its obligations to pay its short-term debts, namely; business debt, dividend debt, tax debt, and others. Another opinion says that the meaning of liquidity is the ability of a person or company to pay off debts that must immediately be paid (current liabilities) using current assets. In this case, the higher the level of liquidity of a company, the better its performance is considered. Companies with a high level of liquidity usually have a better chance to get various supports from many parties, for example; financial institutions, creditors, and suppliers.

According to Riyanto (2010), the notion of liquidity is matters relating to the problem of a company's ability to meet its financial obligations which must be paid off immediately. Meanwhile, according to Syafrida (2015), the definition of liquidity is the ability of a company to meet all financial obligations that can immediately be disbursed or are past due. Specifically, liquidity reflects the availability of funds owned by the company to meet all debts that are due.

According to Kashmir (2013), the ratio commonly used to measure liquidity is Current Ratio, Quick Ratio, Cash Ratio, and Net Working Capital. One of the liquidity ratios is: Current ratio, Quick Ratio, Cash Ratio, and Net working capital. While Samryn (2011) argues that there are four types of liquidity ratios including current ratio, fast ratio, inventory to net working capital ratio, and cash ratio. In this study, liquidity is measured by cash ratio (cash ratio).

Prior Research

Previous research that can support this research is as follows: Sayeda (2011) in his research entitled "Effects of Working Capital Management and Liquidity: Evidence from the Cement Industry of Bangladesh". The results of this study clearly indicate a significant level of relationship between the profitability index and various liquidity indices and working capital components

Pawestri (2016) in her research entitled "The Effect of Working Capital Components on Company Liquidity (Study of Food and Beverage Companies Registered on the Indonesia Stock Exchange)". The results of the analysis state that cash turnover, inventory turnover and debt turnover simultaneously have a significant effect on liquidity. Partially, cash turnover and inventory turnover have a significant impact on liquidity, while debt turnover does not have a significant effect on liquidity.

Dewi et al (2017) in their study entitled "The Effect of Accounts Receivable Turnover and Cash Flow on PT Liquidity. Astra Internasional Tbk ". The



results showed that the rotation of receivables and cash flows together (simultaneously) had a positive and significant effect on the liquidity of PT. Astra Internasional Tbk. While the results of the t test, accounts receivable turnover did not have a significant effect on liquidity. On the contrary, the results obtained show that cash flow significantly influences the liquidity of PT. Astra Internasional Tbk.

Dwinta & Rani (2018) in his research entitled "The Effect of Cash Turnover and Inventory Turnover on Liquidity at PT Ultra Jaya, Tbk." The results showed no significant effect between cash turnover and inventory turnover on liquidity either partially or simultaneously. This study perfects the previous research, where the previous study only used one liquidity indicator, which is the current ratio, while in this study two liquidity indicators are used, the current ratio and fast ratio so that it enriches the

results of the study related to the level of company liquidity.

Hidayat (2018) in his study entitled "The Effect of Cash Turnover and Receivable Turnover on Liquidity Levels in Automotive Companies Listed on the Indonesia Stock Exchange". Statistical test results show that partial cash turnover has no significant effect on liquidity, while accounts receivable turnover has a significant effect on liquidity. Simultaneous cash turnover and accounts receivable turnover have no significant effect on liquidity. Thus the users of financial statements can consider these ratios as consideration tools in decision making.

Research Framework

Based on the theoretical basis and the results of previous studies and the problems that have been raised, then as a basis for formulating a hypothesis, the following framework is presented in the research model in the following figure:

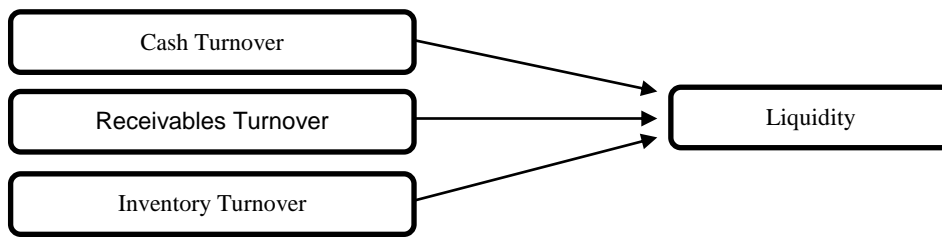


Figure 1.1 Thinking Skills

Hypothesis

The research hypotheses proposed are as follows:

- Ha₁ = Cash Turnover affects Liquidity.
- Ha₂ = Accounts Receivable turnover affects Liquidity.
- Ha₃ = Inventory Turnover affects Liquidity.

RESEARCH METHODS

Types of research

This research is causal research. The type of research used in this study is casual associative research (causal associative research). According to Sanusi (2011), associative-causal research is research

that looks for relationships between two or more variables. The purpose of associative research is to look for relationships between one variable and another.

Definition of Variable Operations

The variables used in this study consisted of the dependent variable and the independent variable. Operational research variables on the Effects of Cash Turnover, Accounts Receivable Turnover and Inventory Turnover on Liquidity Levels in Property, Real Estate, and Building Construction Companies that go public in the Compass 100 Index in 2013-2018 can be summarized in table 1.1.



Table 1.1 Operationalization of Variables

Variables	Concept Variables	Indicator	Scale
Dependent			
Liquidity	The ratio used to measure the company's ability to meet short-term obligations that must be met	<i>Cash Ratio</i>	Rasio
Independent			
Cash Turnover	Comparison of sales with average cash	$\frac{\text{Sales}}{\text{Cash average}}$	Rasio
Receivables Turnover	A method that measures how often accounts receivable turn into cash in a year, by calculating the division between net sales and average trade receivables that have not been paid during the year.	$\frac{\text{Sales}}{\text{Average receivables}}$	Rasio
Inventory Turnover	The ratio used to measure the number of times the funds invested in this inventory revolve in a period	$\frac{\text{cost of goods sold}}{\text{Average inventory}}$	Rasio

Data Types and Sources

The data used in conducting this research is secondary data, that is data obtained through intermediaries from both parties and certain media that support this research. The data used in this study are secondary data in the form of financial statements of property companies, real estate, and building construction which are included in the Kompas 100 index listed on the Indonesia Stock Exchange during 2013-2018 obtained from the Indonesia Stock Exchange website (www.idx.co.id) and the official website of each bank.

Population and Research Samples

The population in this study are property, real estate, and building construction companies which are included in the Kompas 100 index which are listed on the Indonesia Stock Exchange (IDX) during 2013-2018. The sample is part of the population used to estimate population characteristics. The sampling technique is using purposive sampling technique. According to Widyani (2010) the purposive sampling method is the selection of samples on the basis of the suitability of the characteristics of the sample with the specified sample selection criteria. The sample criteria used in this study are:

1. Property, Real Estate, and Building Construction Companies included in the Kompas 100 index and listed on the Indonesia Stock Exchange (IDX) within 2013-2018.
2. Publish audited financial statements for the period 2013-2018

3. The company did not experience a loss during the study year.
4. Data owned by the company are complete and in accordance with the variables studied.

According to the criteria above, the number of samples used were 13 companies during the 6 periods namely 2013, 2014, 2015, 2016, and 2018. Then the number of samples obtained was 13 companies x 6 periods = 78 data to be used in this study.

Data collection technique

Data collection methods in this study are library study methods and documentation methods. Literature study method by studying literature and reviewing various literature literatures such as various journals, articles and other literature books that support this research process. While the documentation method is the process of collecting data by recording documents related to this study.

Analysis Method

Descriptive statistics

Descriptive statistics in this study are used to provide a description of the character of the research variable using a frequency distribution table that shows the mode number, the range of scores and the standard of division

Classic assumption test

This research was conducted with a simple regression analysis. The use of simple regression analysis must be free from testing classic assumptions. For this reason, before a simple



regression analysis is required, classical assumptions must be tested first. Testing classic assumptions is done using normality test, multicollinearity test, heterokedasticity test and autocorrelation test.

Hypothesis testing

In this study the authors used three independent variables and three dependent variables. The analytical method used to test the hypothesis is the multiple regression method, namely regression used to find out how much influence the independent variable has on the dependent variable, with a simple linear regression analysis that aims to meet the researchers' expectations regarding the Effects of Cash Turnover, Receivable Turnover and Inventory Turnover Against Levels Liquidity in Property, Real Estate, and Building Construction Companies that went public in Kompas 100 Index 2013-2018. Regression analysis using SPSS software version 25. The regression equation is as follows: $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon_1$

Where:

Y = Dependent Variable (Company Liquidity as measured by Cash Ratio)

α = constant or price Y if X = 0

β = number or direction of the regression coefficient, which indicates an increase or

decrease in the dependent variable based on the independent variable

X1 = Cash Turnover

X2 = Accounts Receivable Turnover

X3 = Inventory Turnover

ϵ = error level of the intruder / error

In this study, the significance level (α) of 0.05 or 5% was used. To test whether the proposed hypothesis is accepted or rejected, a test of the research variables is carried out by simultaneously testing through the simultaneous significance test (F statistic test), which intends to explain the effect of the independent variable on the dependent variable. Meanwhile, to test each variable partially, it is carried out by means of an individual parameter significance test (statistical t test) which aims to find out whether the independent variable influences the dependent variable, and which of the dominant variables influence the dependent variable.

RESEARCH RESULTS AND DISCUSSION

Research Data Description

The following are descriptive statistical results about the research variables as follows:

Table 1.2 Descriptive Statistics Results

Variabel	N	Minimum	Maximum	Mean	Std. Deviation
X1	78	0,33	8,99	3,35	1,881
X2	78	0,08	1,91	0,70	0,387
X3	78	0,02	61,89	4,67	9,766
Y	78	0,08	3,18	0,49	0,408

Source: Data processed (2019)

The following are the results of descriptive statistics about the research variables as follows: The cash turnover variable has an average value of 3.35 times with a standard deviation of 1.881 times, which means that the data variation is small (less than 1.466 times the mean). The variable cash turnover ranged from the lowest value of 0.33 times, namely the Sentul City Tbk company in 2015. up to the highest value of 8.99 times, namely the Wijaya Karya (Persero) Tbk company in 2014. Receivables turnover variable has an average value of 0, 70 times with a standard deviation of 0.387 times, which means small data variations (less than 0.316 times the mean). Variable accounts receivable variable ranged from the lowest value of 0.08 times, namely Sentul City Tbk company in 2015. up to the highest value of 1.91 times, namely the Bekasi Fajar Industrial Estate company in 2013. Variation of inventory turnover has an average value of 4.67 times with a standard deviation of 9.766 times, which means large data variations (more than 5.094 times the mean).

Inventory turnover variables range from the lowest value of 0.02 times, namely the Bekasi Fajar Industrial Estate company in 2015. up to the highest value of 61.89 times, namely the Adhi Karya (Persero) Tbk company in 2013. Liquidity variable measured by Cash Ratio has a value an average of 0.49 times with a standard deviation of 0.408 times, which means that the variation of the data is small (less than 0.078 times the mean). The Liquidity variable measured by Cash Ratio ranges from the lowest value of 0.08 times, namely the Sentul City Tbk company in 2018 to the highest value of 61.89 times, the Bekasi Fajar Industrial Estate company in 2018.

Test Prerequisite Analysis

Normality test

Thus the overall results of the normality test calculation using the Lilliefors test can be seen in the summary in table 1.3.

**Table 1.3 Summary of the Normality Test**

No	Galat Taksiran	n	L Hitung	L Tabel		Keputusan
				$\alpha = 0.05$	$\alpha = 0.01$	
1	Y atas X1	78	-0,0616	0,1003	0,1167	Normal
2	Y atas X2	78	0,0430	0,1003	0,1167	Normal
3	Y atas X3	78	0,0247	0,1003	0,1167	Normal

Source: Data processed (2019)

Multicollinearity Test

The results of the tolerance calculation according to Table 1.4 show that there are no independent variables that have a tolerance value of less than 10%; all tolerance values are more than 10%; which means there is no correlation between variables. The results of the calculation of the value

of the variance inflation factor (VIF) also show the same thing, there are no independent variables that have a VIF value of more than 10; the value of the variance inflation factor (VIF) is all less than 10. The conclusion is that there is no multicollinearity between the independent variables in the regression model based on the tolerance value test.

Table 1.4 Summary of Multicollinearity Tests

Model	Variabel	Collinearity Statistics	
		Tolerance	VIF
1	X1	0,677	1,478
	X2	0,651	1,537
	X3	0,772	1,296

Source: Data processed (2019)

Autocorrelation Test

Autocorrelation test can be done by Durbin-Watson (DW) testing. The results of the autocorrelation test can be seen in Table 1.5

Table 1.5 Autocorrelation test results

Model	n	k	dl	du	Durbin Watson	4-du	4-dl
1	78	3	1,554	1,713	2,211	2,287	2,447

Source: Data processed (2019)

Referring to Ghozali (2010), the regression model in this study is free from the autocorrelation problem because the Durbin Watson values are between du and 4 du.

Heteroscedasticity Test

The test results using the Spearman rank test can be seen in the following table 1.6:

Table 1.6 Heterokedasticity Test Results

		X1	X2	X3	
Spearman's rho	Abres	Correlation Coefficient	-0,192	-0,119	-0,108
		Sig. (2-tailed)	0,091	0,298	0,347
		N	78	78	78

Source: Data processed (2019)

Spearman rank test results in the table above shows the significance value of each variable of 0.091, 0.298, and 0.347. Because the significance value of each variable is greater than 0.05, it can be concluded that the data are free from heteroscedasticity.

Hypothesis test**Multiple regression analysis**

Multiple regression analysis is used to get the regression coefficient which will determine whether the hypothesis made will be accepted or rejected. By using the multiple linear regression method the following results are obtained:

**Table 1.7 Results of Regression Analysis**

Model		B	T _{hitung}	Sig	T _{tabel}	adj R ²	F _{hitung}	Sig
1	(Constant)	0,674			1,665	0,239	9,081	0,000
	X1	-0,127	-4,855	0,000				
	X2	0,363	2,801	0,006				
	X3	-0,004	-0,824	0,413				

Source: Data processed (2019)

Based on the results of the regression test above, an equation can be formed as follows: $Y = 0.674 - 0.127X_1 + 0.363X_2 - 0.004X_3 + \epsilon$

Determination Coefficient Test (R²)

From table 1.7 it is known that the adjusted R square value is 0.239. This means that 23.9% of the Company's Liquidity as measured by Cash Ratio can be explained by variations in independent variables namely cash turnover, accounts receivable turnover and inventory turnover, the remaining 76.1% (100% - 23.9%) is explained by causes other causes outside the model.

Simultaneous Significance Test (Statistical Test F)

From the Anova test or the F test in table 1.7 above, the calculated F value is 9.081 with a probability of significance that indicates 0.000. Test probability values are much smaller than $\alpha = 0.05$. This shows that jointly (simultaneously) Company Liquidity as measured by Cash Ratio can be influenced by cash turnover, accounts receivable turnover and inventory turnover.

Significance Test of Individual Parameters (t Test)

T test is performed to determine whether the independent variables in the regression model have an individual effect on the dependent variable. To determine whether a hypothesis is accepted or rejected is to compare t arithmetic with t_{tabel} and its significance value in this study using a significance level of 0.05. In this case, the table value is 1.665.

Partial test results (t test) in table 1.7 above show that the variable cash turnover has a negative effect on the Company's Liquidity as measured by Cash Ratio, which can be seen from the comparison between the table and t count, namely t_{tabel} < t count, with t value 1.665 and t count - 4,885 and the significance level is below 0.05. Thus Ha1 received.

Accounts receivable turnover variable has a positive effect on the Company's Liquidity as measured by Cash Ratio, which can be seen from the comparison between t_{tabel} and t count, namely t_{tabel} < t count, with a t_{tabel} value of 1.665 and t test 2.801 and a significance level below 0.05. Thus Ha2 received.

Inventory turnover variable does not affect the Company's Liquidity as measured by Cash Ratio, which can be seen from the comparison between t_{tabel} and t count, namely t_{tabel} > t count, with a t_{tabel} value of 1.665 and t count -0.824 and a significance level above 0.05. Thus Ha3 was rejected.

DISCUSSION

Cash circulation affects liquidity

Based on partial research results, it can be seen that cash turnover has a negative effect on liquidity as measured by cash ratio. These results indicate that the smaller the variable cash turnover, the smaller the level of company liquidity. The results of this study are in line with research conducted by Dewi, et al (2017) which states that cash turnover has a negative and significant effect on liquidity at PT. Astra Internasional Tbk.

Based on the data obtained shows that during 2013-2018 the level of cash turnover in the sample companies experienced an unstable increase and decrease. This is due to the increase and decrease in liquidity not only reflected in cash turnover, but there are other factors that affect liquidity. This can be seen from the data that has been processed which shows that information about the increase or decrease in cash turnover obtained is not always followed by an increase and decrease in liquidity in the sample companies.

Receivables turnover affects liquidity

Based on partial research results, it can be seen that the accounts receivable turnover has a positive effect on liquidity as measured by cash ratio. This result indicates that high accounts receivable turnover can increase liquidity because the number of uncollectible accounts is getting smaller. The results of this study are in line with research conducted by Hidayat (2018) that accounts receivable turnover can affect liquidity in automotive companies listed on the Indonesia Stock Exchange.

Based on the data obtained shows that the average level of accounts receivable turnover in the sample companies during 2013-2018 experienced an increase and decrease that is not stable every year. This happens because every year sales have increased but have an impact on increasing the value of receivables every year. High accounts receivable



turnover will cause liquidity to increase. Company liquidity is shown by the size of current assets, which are assets that can easily become cash. If the accounts receivable turnover is high, the cash will increase so that it can be played back. The company's profit will also increase so that the level of liquidity becomes high and the risk of the company being unable to pay its short-term debt will be smaller. And vice versa, if the receivable turnover rate is low then the level of company liquidity will also be low.

Inventory turnover affects liquidity

Based on partial research results, it can be seen that liquidity measured by cash ratio in this study cannot be influenced by inventory turnover. These results indicate that any increase in inventory turnover cannot increase company liquidity as measured by cash ratio so that it can be concluded that the company's inventory turnover is not one of the factors that affect the cash ratio (cash ratio) which is one measure to see a company's liquidity. The results of this study are in line with research conducted by Astuti (2014) and Dwinta & Rani (2018) that inventory turnover is not able to affect liquidity at PT Ultra Jaya, Tbk.

This means that the sample company has managed its financial management effectively, especially in managing inventory turnover, so inventory turnover that occurs from year to year tends to show a large turnover rate, so it can be said that the shorter or better average time between planting capital in inventory and sales transactions in the sample company. The faster the inventory turns, the less risk of loss if the inventory goes down in value. Besides that, the costs associated with inventory turnover are also reduced and can increase company profits. Large inventory allows companies to meet sudden market demand and can minimize the risks and costs to be borne by the company.

CONCLUSIONS

Based on the results of the analysis and discussion carried out, the following conclusions can be drawn: 1) cash turnover has a negative effect on liquidity; 2) accounts receivable turnover has a positive effect on liquidity; and 3) inventory turnover cannot affect liquidity.

Suggestions

By considering the existing limitations, it is expected that future research will improve the following factors: 1) For companies, to be able to improve the management of receivables, cash management and inventory management to maximize the company's current assets that will be used to pay short-term debt. 2) For investors, to find out how the company's performance before investing, investors and prospective investors should find out about how

the profile of a company can be obtained through the Indonesia Stock Exchange so that the quality of the company's financial statements is more accurate and relevant. 3) For further researchers, further researchers are advised to use more other samples with more diverse characteristics from various industrial sectors and extend the study period. Other research should also add independent variables that also affect company liquidity. This is because company liquidity is not only determined by inventory turnover, accounts receivable turnover, and cash turnover.

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A STUDY OF PRIMARY SCHOOL MERGER PROGRAMME IN ODISHA

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ABSTRACT

This study is an attempt of Primary school merger programme which reflects the policy of rationalization of school in Odisha. With the state Govt. finalizing modalities for merger of schools for system-wise transformation and quality learning, school education in Odisha is all set to go for a complete makeover. As per the roadmap prepared for rationalization of school education, around 4200 schools will be merged with schools located in the same campus or within the radius of 100 meters in the first phase before the next academic session. School listed for merger have students' enrollment of less than 20. The School and Mass Education Department of Odisha embarked on an ambitious program of primary school mergers by shutting down small village school and opening up larger centralized schools. The goal of the programme was to improve the teacher and building resources in an attempt to raise the human capital of students in poor rural areas although it was recognized that students would lose the opportunity to learn in the settings of their own familiar villages. Given the magnitude of the programme and the obvious mix of benefits and costs that such a program entails there has been surprisingly little effort to evaluate the impact of creating a new system that transfers students from school to school during their primary school period of education. In this paper, our overall goal is to examine the impact of the rural Primary School Merger programme.

KEYWORDS: *Primary School Merger Programme, Rationalization of Schools, Lead School, SLMC*

INTRODUCTION

The exponential growth of elementary and secondary schools in the state in last two decades has undoubtedly resulted in expansion of access to schools and at present there is hardly any unserved habitation left in the state. But, so far as quality education is concerned there is still much room for improvement. One of the important factors affecting the pace of growth in quality education is lack of adequate number of teachers in many schools. Ironically many schools are running with very less number of teachers in our state although it has a highly favorable PTR i.e. 23:1 against the RTE Norm 40:1. This is the reason why a continuous effort has been made in last 10 years to rationalize the teachers. But rationalization of teachers alone has not solved the acute problem of vacancy of teachers in many schools especially those located in rural and remote areas. The following situations have

been found to be inhibitory in the stride towards the goal of quality education:

(a) Schools with very poor roll strength and those with better roll strength have been provided with equal number of teachers to satisfy the RTE norm.

(b) A large number of schools being there, the state has not been able to provide at least one teacher for each class in elementary schools as required in an ideal situation. Thousands of primary schools are running with only two teachers. This has forced the schools to adopt the multi-grade teaching method which probably slow down the pace of our journey towards the goals of quality education.

(c) Myriad instances are found where two or more schools with same class range or compatible range of classes are running from one campus or close vicinity.



(d) Existence of large number of schools splits and reduces the availability of material and intellectual resources for individual institutions. This also causes problem in monitoring and supervision. Deficiency in monitoring and supervision obviously affects the achievement of quality education.

RATIONALISATION OF SCHOOLS

Rationalization of schools being one of the most effective ways of solving the problems caused due to the above situations, steps have been taken in this direction in recent years by merging schools and closing down many schools with very poor roll strength. Although these steps have been taken in the right direction, a comprehensive and strategic approach to the problem was required to be worked out to ensure rational distribution of teachers in order to bring improvement in quality.

Thus formulating a comprehensive policy of rationalization of schools was under active consideration Govt. for a long period Govt. After careful considerations have been pleased to introduce a "Policy of Rationalization of Schools" with following details:

1. Scope:

All Govt. schools both elementary and secondary schools shall be covered under the policy. The horizontal / vertical integration among Block Grant School and GIA Schools will be considered separately with detail modalities.

2. Initiatives under the Policy:

The following major initiatives shall be undertaken for implementation of the policy:

(a) Merger of Schools:

Schools located in same campus or located within a distance of 100 meters shall be merged so as to form a single institution or a composite institution which may have both elementary and secondary wing.

Further, schools with very low roll strength shall be physically merged with other schools of same range of class or higher range of class even though the distance exceeds 100 meter. A primary school with roll strength less than 20 and Upper Primary School (class I-VIII) with roll strength less than 30 shall be treated as Low Roll Strength School for the purpose of merger. Similarly, in case of Secondary schools, a 2 class Secondary School with roll strength less than 30 and a 5 class / 7 class school with roll strength less than 50 shall be treated as Low Roll Strength Schools. But in case of EBB/TSP Blocks, the Primary Schools having roll strength less than 10, in case of U.P. Schools (I to VII Class) having roll strength less than 20, 2 class Secondary Schools having roll strength less than 20 and

for 5 class / 7 class Secondary Schools having roll strength less than 40 shall be treated as low roll strength schools for this purpose.

However, keeping the RTE distance norms for access in view, Geographical location of school natural barriers and other local factors, Govt. may decide to modify the minimum roll strength criteria for physical merger of Low Roll Strength Schools.

The merger shall be two types such as :

(i) Horizontal Merger:

Schools with same range of classes shall be merged to form a single school. The following mergers shall be treated as horizontal mergers.

- Merger of two or more Primary Schools
- Merger of two or more Primary Schools of any range
- Merger of two or more Secondary Schools of any range

(ii) Vertical Merger:

Schools with different range of classes, i.e. one with lower class range and the other with higher class range shall be merged to form a single or composite school. The following mergers shall be treated as vertical merger:

- Merger one or more Primary School with a 3 Class (VI- VII) or 8 class (I-VIII) Upper Primary School
- Merger one or more Primary School with a 5 Class (VI- X) or 7 class (IV-X) Secondary School
- Merger of one or more 3 Class Upper Primary Schools(VI-VIII) / 8 Class Upper Primary Schools (I-VIII)with a 2 Class(IX-X)/5Class (VI-X) / 7Class (IV-X) Secondary School
- Merger of one or more Primary Schools with a 2 Class (IX-X) Secondary School, provided that the linking classes are opened by Govt. in appropriate time to facilitate continuity of study of the students passing out of the top class of the primary school.

(b) Up-gradation of Schools:

In order to implement this policy of rationalization of schools Govt. may upgrade a primary School to Upper Primary School or an Upper Primary School to Secondary School in the following situations:

(i) To open link classes (VI-VIII) where it is decided to merge a Primary School with a two class Secondary School, the Primary School may be upgraded to an Upper Primary School.

(ii) Selection of Schools for Merger

The selection of schools for merger should be based on the following criteria-



- (a) All schools being merged need to be located in the same district
- (b) The schools must be Govt. managed schools
- (c) Madrasa, Sanskrit Toll, Special Schools shall not be selected for merger
- (d) The schools should be located in same campus or within 100 meter radius. In case of Low Roll Strength Schools, the 100 meter distance restriction shall not apply
- (e) Schools separated by State High Way, National High Way and Railway Line shall not be taken for merger.
- (f) Schools separated by rivers, forests, hills or any other natural barriers shall not be merged.
- (g) All aided School shall not be considered for merger with a Govt. School
- (h) In case of physical merger of Schools not located in the campus, the availability of class rooms in the School to which students to closed School shall be shifted must be verified by properly through the higher authorities.
- (i) In case of non-availability or required of class rooms to accommodate the students after physical merger, administrative merger may be taken up for the time being till construction of the additional Classrooms.

03. Implementation Modalities:

- (i) The Schools to be merged / upgraded shall be selected on the basis of UDISE data Vis-à-vis the above mentioned guidelines by a District Level Merger Committee (DLMC) under chairmanship OF Collector of the district. The DEO, DPC and all BEOs shall be the members of the committee and DEO will be the member convenor. If the committee so decides fresh verification of UDISE data may be made.
- (ii) The Schools considered for merger shall form the merger group and the School with highest class in the group will normally be the Lead School with which other Schools will merge. The Schools which will merge with the lead School shall be known as Satellite Schools. In case, there is more than one School to be the lead School DLMC will take a decision taking into account the number of classes, infrastructural and will strength in the order of such School, to select the lead School.
- (iii) The list of Schools for merger / up-gradation approved by the DLMC.
- (iv) A State Level Merger Committee (SLMC) under the chairmanship of SPD, OPEPA with SPD, RMSA and DEE as members will scrutinize the list. The Officer in charge of Access in OPEPA will convene the meetings of SLMC.

(v) After notification of Schools for merger, steps will taken by the DEO or BEO.

(vi) The records, stores, accounts movable properties of the Satellite Schools shall be handed over by the Headmasters of the concerned Schools to the H.M of the lead School.

(vii) The subsequent adjustment / transfer of employees in the Schools notified for merger shall be made as per instructions in the notification of merger.

(viii) In case of dispute in naming in the Nodal School after merger, the H.M of the Nodal School shall organize a joint meeting of the SMCs of merger group-.

(ix) After merger the Headmaster of the Nodal School will take steps to record the land and property of the all merged Schools in its name in revenue records.

04. Applicability of provisions of RTE Act

The distance norm for access for children from catchment villages / habitations as prescribed in RTE Act shall not be deviated in any case of physical merger of elementary Schools.

05. Applicability of Odisha Elementary Cadre Rules

The provisions of Odisha Elementary Cadre Rules in so far as service conditions of the teachers of elementary Schools are concerned shall not be deviated in any manner after the merger.

CONCLUSION

As per the roadmap prepared for rationalization of School Education around 4,200 School will be merged with Schools located in the same campus or within the radius of 100 meters in the first phase before the next academic session. Schools listed for merger have students' enrollment of less than 20. The decision after merger of Schools was taken under the Sustainable Action for Transforming Human Capital (SATH) programme launched by NITI Aayog in three states including Odisha. Director of Elementary Education, Chudamani Seth said earlier Schools with students' strength of less than 10 were closed, but now Schools having less than 20 students will be merged with nearby Schools. "Tentatively we have found 4200 Schools which can be integrated with the next Schools. If it is a Primary School, it will be merged with Upper Primary and the latter will be clumped together with High School. Work has already begun and we are planning to complete the merger process by end of March" he said.



It was found that more than one Govt. Educational institution having different heads are functioning from one campus or adjacent campuses with independent identities and there was lack of co-ordination among these institutions while undertaking different activities like annual functions and sports meets.

The Director informed that along with the merger they would go for reduction of out of School children and dropouts in ten identified districts including Koraput, Malkangiri, Nabarangpur, Rayagada, Bolangir, Subarnaopur, Kalahandi and Nuapada besides Gajapati and Kandhamal. The School and Mass Education (SME) Department is, infact, planning to merge around 21,300 Schools by March'2020 as per the S A T H guideline. Though Odisha has 25,477 primary Schools and 2,554 upper Primary Schools with students' enrollment of less than 60, the priority will be given for merger of Schools located within the radius of one K.M.

The state has prepared a roadmap for conducting a detailed diagnostic exercise and designs a customized School Education system. The roadmap will be implemented through the State Project Monitoring Unit (PMU) which will do tracking, monitoring and course correction. Apart from Odisha, the SATH Programme is also being implemented in Madhya Pradesh and Jharkhand.

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SPECIFICITY OF USING ICT IN TEACHING THE RUSSIAN LANGUAGE AND RUSSIAN LITERATURE

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ABSTRACT

In this article it is observed specific peculiarities and ways of effective using ICT in classes of Russian and its Literature.

KEY WORDS: *innovation, technology, specificity, information-communicational technologies, didactic principles.*

DISCUSSION

Main objectives of innovational education are:

- To develop of intellectual, communicational, linguistic and creative skills of the learner;
- To form personal qualities of the learner;
- To elaborate the abilities influencing on teaching-cognitive process and the transition to the level of productive creativity;
- To increase various types of thinking;
- To form qualitative knowledge, abilities and skills.

Via the above pointed objectives it will be determined the tasks of the innovational education:

- To make optimum teaching-educating process;
- To create the atmosphere of co-operation between the teacher and the learner;
- To elaborate long-term positive motivation towards education;- join learners in creative activity;
- Thorough selection of materials and the ways of its presentation.

On the base of innovational education lie the following technologies:

- developing education;
- problematic education;
- critical thinking development;
- differentiational approach to education;
- Establishment of situation for progress in class.

Main principles of innovational education are:

- Creativity, catering for creation;
- mastering the knowledge in the system;

- Non-traditional forms of lessons;
- using visual aids.

And now we pass from general methodical principles of education to concrete technologies, for instance, to specific peculiarities of using ICT in classes of the Russian language and Literature.

Having used computer technologies in classes and extracurricular activities for many years you begin to treat more fastidiously to ready-made computer programs, usage moments of them and you learn to estimate their strong and weak points, merits and demerits.

Especially teachers of the Russian language and Literature treat more fastidiously to using a computer in classes by force of clear reasons. The tasks standing in front of the language teachers differ a lot from the goals and tasks of others subject teachers. Undeniable helpers in the solution of these tasks are the information-communicational technologies.

By and large our main purpose is the soul of a child, the problem of morals, development of creative person and also the problem of training a learner as a language master. First of all these tasks, of course, intend to work with a text, a literary word and a book. Therefore in front of the language teacher who is planning to take advantage of the opportunities of the computer in his classes, always appear questions about expediency of its usage in Russian language and Literature classes, concerning how much the computer can take the place of the teacher and what steps of the lesson in, and also what kind of didactic functions it can be entrusted to the computer. Teachers



use a computer in their classes, first of all, in order to solve special practical problems: to form firm orthographical and punctuation knowledge and skills; to increase word stock; to master the literary language norms; to train the knowledge of linguistic and literary terms; to form common educational abilities and skills. In fulfilling such kind of tasks the computer is a good assistant for the language teacher along with other means of education. Preparation and leading classes with a computer assistance demands from the teacher a good deal of time and patience, arise some inconvenience in organizational character, for it often demands to divide the class into groups. But such kind of classes turns out to be much pleasurable both for students and the teacher. But many teachers use the computer only for the demonstration of separate slides, texts, though it can be quite possible to do with the help of books avoiding from unreasonable waste of time and electricity.

As a model for using a computer can serve the manual by N.N. Algazina "Didactic materials on orthography with computer support" (M., 1997), in which it is described the experience of using the opportunities of the computer in learning and increasing the materials on orthography. Working at the rules (or the blocks of the rules) in the first step supposes to learn or review appropriate materials to the school textbook. After that schoolchildren with the help of series of computer programs again learn the norms of spelling, then train with writing selections on the base of algorithm, inserted in the program, controlling their works in every step of using the rules, including the last, ending step, in which writing selection is done. With the help of the computer, students master orthographical analyses, the diagram displayed on the computer gives the chance to judge about the level of students' mastering the theory of orthography, and also about the ability of using this theory in practice.

Using the computer in Russian classes does not appear to be end in itself. Its usage gives the opportunity to fulfill a number of didactic tasks: to intensify the teaching process, optimize it, make students' cognition more active, arouse interest to learning, develop the level of their knowledge, to achieve appreciable results on making abilities and skills perfect. Using computer programs provides with differential and individual approach to education, as in it is foreseen the opportunity of providing with training work in different duration depending on concrete learner's mastering the action way. In the training process the program foresees using in various difficulty degree variants that can be offered the learner with due regard for his potentialities. Computer support, perhaps in learning different themes of school program, first of all in

learning punctuation, computer tasks on speech ethics have been worked out.

Many teachers work, mainly in the following direction: using ready-made program products, working with MS Office programs, working with Internet resources, and also use ready-made program products, Internet resources, textual materials, tests, presentations of teaching material.

For instance, working with Microsoft Publisher, creating projects and presentations demands to approach creatively to using research methods, mastering computer technologies from the teacher. A didactic material presented in computer variant fulfills several tasks: increases productivity of the teacher's labour and the learner in class; enlarges the volume of using visuals in class; saves teacher preparation time for the lesson.

It is interesting to work using the program Power Point. It leads to a number of positive effects: enriches the lesson with emotional colour; psychologically lightens the process of learning; arouses lively interest to the object of cognition; increases the learner's general outlook.

Working with the program Microsoft Publisher permits to get real product of his activity in the type of newspapers, journals, books, pamphlets and so on. It is used for designing the results of group work in publishing newspaper, information list. Many additional materials can be found on the Internet that permits to create a bank of visual and didactic materials, critical articles, journals and etc. Listening to a literary work in an e-variant assists then, when the learner cannot find the needed work in the libraries or just if it is easier for them to listen than to read.

E-dictionaries and encyclopedias create the opportunity of gaining additional knowledge in mobile form and use it in classes. Every teacher knows how the usage of video materials that can be added in the presentation animates it.

Using ICT in Literature classes leads to a number of positive outcomes: teachers and students' creation the media materials, including presentations about biography and literary activity of writers and poets; develops the quality of education; motivates i.e. strengthens interest to learning the subject; teachers rationally set the time limits of the lesson stages; to explain the material intelligibly and make them interesting.

Forming the skill of working with e-textbooks takes a special place. In explaining a new material in class item collections, tables and graphs are used by displaying them on the large screen. Naturally the technology of explanation is changed through it – the information appearing on the screen is commented, if it is necessary it is accompanied by examples and extra explanations.



Using ICT is effective for teachers in preparing different types of lessons: multimedia school lessons, observation – lessons, seminar - lessons, practicum - lessons, virtual excursion – lessons and others, as organization of virtual excursion to nature, to the museum, to the Motherland of a writer or a poet and etc.

So, the benefit of using ICT in teaching the Russian language and Literature is obvious, therefore they are successfully implemented not only comprehensive schools, but also at the courses of developing the qualification of Russian language teachers.

Using information-communication technologies permits: to provide the class with new substance; to develop critical approach to surrounding world, curiosity of learners; to form the elements of informational culture; to foster the skill of rational work with computer programs; to support selfness in mastering computer technologies; to go hand by hand with the time, as it is impossible to imagine a modern school without the process of informatization.

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THE EFFECT OF PHYSIOLOGICAL ACTIVE SUBSTANCES ON FUNGAL DISEASES OF WHEAT

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ABSTRACT

In this work data of field researches of influence of growth regulators on contamination of winter wheat plants are presented

KEYWORDS: *rust, abiotic, brown, growth regulators, winter wheat, parasitic illnesses*

INTRODUCTION

The wheat in Central Asia is considered to be the main grain industrial culture. At the same time winter wheat has several phyto-pathogens, the development of which considerably limits the potential opportunities of modern sorts of intensive types. More harmful ones are yellow and brown rust, also Erysiphe graminis – dedicated obligatory parasites. Harm of rust and Erysiphe graminis can reach 15 – 25 %. On the background of intensive technologies of cultivation of winter wheat, their harmfulness strengthens and the lost of harvest can be increased to 5 – 10 % [1].

Brown rust decreases endurance of plants to the unfavorable stressful factors, brings to premature of die off the leaves and stopping photo-synthesis, decreasing of sustainability of adolescent sowings and lost of harvest [2].

Erysiphe graminis is enlarged on widely. Leaves of sick plants are covered with white Erysiphe graminis incursion of conidial sporiferous fungus, get yellow, and in hot affection, die. On powdery coating can appear black dotted formations – cleistothecium of pathogens (ascigerous stage) [3].

The rust in Central Asia is widely introduced on wild grasses, some of them are considered to be natural reservatum of pathogens for agricultural plants [4].

The chemical specimen is used against rust and erysiphe graminis. Though, having effective fungicidal properties, they can have unfavorable influence on the growth and development of cultural plants, especially on winter wheat. The chemical protection of plants – is source of serious pollution of agrarian-ecological system, water and food products.

More constant, long and safe protective effect brings biologically active substances. They optimize the functional condition of plants, at the same time initiate high sustainability level to the pathogens and other unfavorable environmental factors [5, 6].

As per A.O. Marchenko [7], the main factor which manages implementation of morphogenetic potential of organism is phyto hormones. In certain correlations and concentrations they are responsible for expression “necessary” genes, and consequently for implementation of genetic programs of plants. It is obvious, that with the laps of time the list of regulators and phyto hormones are increased. This widens our opinions about how the hormonal system regulates ontogenesis of plants and how it participates in response of plants to different outer reactions.

As cleared, so many plant parasites, such as fungous, as well as bacterial origins use different phyto hormones, which actively synthesize for “Chemical attack” on host plant [8, 9, 10]. Pathogens in the process of complicated evolution, produced adjustment complexes in order to extract necessary substances from plant tissue. Although, introduction of infectious structures disturbs the integrity of plant organism. Obligatory parasitism in its appearance is analogical to abiotic stress which doesn’t kill the plant, but makes mobilize all system to high activeness for reparation. Y. T. Dyakov [11] points to activation of stressed metabolite synthesis on first stages on pathogen introduction. The plant opposes to the introduction of pathogens regardless of virulence but when it is perceptible to pathogens, response reactions on contamination proceeds inertly and parasite manages to form infectious hyphae and give spawn.



Introduction of pathogens arouses the sustainable plant cascade of protective reaction which results localization of infectious hearth and appearance of system acquired sustainability in plant organism. Its formation connects with production of signal molecules in infected tissues and their translocation to uninfected parts of plant where they induce protective reactions, which promotes the decrease of sustainability to secondary infections [12].

One of the signal inductors of introduction of pathogens is considered to be arachidonic acid which belongs to the content of cellular hypha phyto pathogenic fungus [13].

There are familiar several secondary metabolites which protects brand plants from unfavorable organisms for them. One of these bonds exists in healthy tissues; others appear in response to the infection. Reasonable parts of protective belong to phenol bonds [14]. Oxide cinnamic acids – n-oxide cinnamic (n-coumaric acid), caffeic, ferulic and sinapic – exists in the plants, in free as well as bonded type. They have influence on the process of growth, and their productivity – oxide cinnamic spirits – initial components in bio synthesis lignin [15]. Lignifications of cellular side creates mechanical border to penetration ob infections.

Silicon plays the important role in starting stages of infectious process. H. Kuno with co authors [16] with the help of X-Ray microanalyses have shown the accumulation of Silicon and calcium in papillas in sites of interrelations of barley epidermis and agent of erysiphe graminis. Being implemented in plant tissues, having system of absorption and metabolizing of Silicon, the rust considerably increases its absorption from soil solution. At the same time Silicon appears in contact with fungus in mesophile cellular, also in bordered zone between haustorium fungus and host cytoplasm [17].

At this point with target of exogenous growth regulations is called “withdrawal” of plant organism from hormonal pathogen influence, increase of general sustainability to abiotic stresses, mobilization of elicitors of plant immune, promoting prevention or weakening the infections, and inputting easy accessible Silicon lets the plant create mechanical border in oppose to infections fast.

MATERIALS AND METHODS

Minor allotment experience was experimented in weakly salinated soil in 2004-2014 years by the method of randomized repetitions, in four times replication. Overall area of allotment contained 7,2 m² (3,6 m x 2 m), discount area of allotment – 1 m². Predecessor of winter wheat in testing in 2004-2006 years was cotton plant of second year exploitation, in 2007-2009 years medicago of seventh year exploitation, in 2010-2014 cotton plant.

After cutting permanent grasses in experimental field and decortications of stubbles were implemented ploughing with plough with coulter. In the experiment background dose of nourishing elements were increased till N100 P60 K60, additional input into spring extra nutrition of azophoska compound (N13 P19 K19) and ammonium nitrate (N 34).

Sowing were conducted on September 25, 2004-2006, on September 30, 2007-2009, on October 4, 2010-2014. The norm of seeding was 4 million piece per hectare. The sort of winter wheat is Dustlik.

The treatment of winter wheat were conducted with specimen to the end phase of stooling – starting of stalk shooting, knapsack spraying in evening time, with medicine doses.

The specimens DKM-1, DAG-1, DAG-2, GK-Cu, GK-Zn were used in concentration of 1x10⁻⁶ mohl/l, concentration of sodium silicate – 5% (was chosen in the preliminary research process). Experimental allotment were sprayed with water.

The diagnostic of contamination of plants were conducted to the phase of lactic condition of wheat. With every replication of studying version were taken 100 plants, were researched three top leaves. In order to identify the contaminant with rust there were calculated quantity of pustules on cutting, recalculation were conducted on 1 cm² top of the leaf. The diagnostics of contamination of erysiphe graminis were conducted based on per cent scale [18].

Preliminary researches, conducted on allotments till specimen treatment, didn't show the hearth of rust and erysiphe graminis. On the leaves which passed the winter were necrotic spots and browned epidermis. The ends of leaves were dry, with visible spots of snow mold. On newly grown leaves were insignificant damages by leave flea and thrips. The pustules of brown rust and incursion of erysiphe graminis were diagnosed to the phase of starting of stalk shooting in all allotments, but level of contamination remained in low level.

RESULTS AND DISCUSSIONS

H. Massel [19] and Y. B. Kononov together with co authors [20] recommended conducting the selection not for sustainability to pathogen contamination but for tolerance to diseases, i.e. ability to keep the harvest in high level in epiphytic years.

The following strategy is identical to the usage of economical threshold of contaminant, instead of expensive removal treatment. Regulators of growth in most situations do not have fungicidal, but fungi static activeness. They do not provide sustainability to the pathogen, but promotes decrease of disease contaminant to safe level.

The treatment with specimen was conducted till advancements of third leaf from the ear. So, the



topic is about comparison of systematic action of specimen. The contaminant of leaves of different ages has significantly changed.

Although we noticed that the quantity of rust pustules on the second leaf from ear on control versions of year's researches was lower than on flagged one. This fact is not related to fall of precipitations (meteorological conditions significantly differed) or sporulating activeness of pathogens (during appearance of flagged leaf, second from ear has already experimented infection load). The probable explanation can be the appearance of received sustainability system of plants to the moment of appearance of second leaf and decreasing age sustainability to the appearance of flagged leaf [21]. The reason can also be projective condition of leaves circle and related to them unequal precipitation of cryptogamic material. That is why it would be correct to compare the change of contaminant with control within one circle of leaves.

The given data in the table indicates that in 2004 the important role in decreasing the contaminant of *erysiphe graminis* played spraying sowing of winter wheat DKM-1 (copper component of glycyrrhizic acid) and sodium silicate. So the contaminant of the third leaf from ear has decreased to 17 and 16%, the 2nd – to 7 and 13% accordingly. The treatment of plants with specimen DAG-1 decreased the level of contaminant of the third leaf from the top to 12 %.

Researched specimens significantly influenced on contaminant of down rust. By comparing the contaminant of leaves of different ages for control, may be judged of speed of response onset on specimen and prolongation of its action. So DAG-1 influenced on contaminant of the third leaf from ear appeared earlier to the moment of treatment, decreasing quantity of rust pustules to 59%. DKM-1 has also shown high efficiency on the leaves of older age. The quantity of pustules on the top of the third leaf decreased to 86%. Decreasing of contaminant of flagged and under-flagged leaves were considerable, but significantly low – 25 and 23% accordingly. Sodium silicate has invariably decreased the contaminant of leaves of different age. The quantity of pustules on the third leaf decreased to 54, the second to – 38, flagged to - 44%. Quite probably that access of the form of input let absorb Silicon in longer period or reutilize accumulated in the plant.

On the allotments where used DAG-2 the decrease of the quantity of rust pustules were as strong as the leaf was older than the period of treatment: on the top of the third leaf to 24, on the second – 31, on the flagged - 38%. GK-Cu considerably decreased the contaminant of leaves appeared close to the moment of treatment: the third leaf from ear to 43, the second – 38, when the flagged leaf was only – 25 %.

The specimen didn't practically influence on the length of leaf lamina. The decrease of this indication at flagged leaf can be marked on 15% during inputting GK-Zn and sodium silicate, also the second leaf from ear at 23% when spraying epin-extra.

DKM-1 didn't influence on the change of the quantity of rust pustules, but actively decreased the contaminant of *erysiphe graminis*. DAG-1 decreased the level of contaminant of *erysiphe graminis* of the third leaf from ear, considerably decreased the contaminant of *erysiphe graminis*. At the same time there was observed significant post-action of specimen. The action of sodium silicate and DAG-2 were adequate.

Reasonably decreasing the contaminant of under-flagged leaf of *erysiphe graminis*, GK-Cu increased infected rust. GK-Zn certainly decreased the contaminant of *erysiphe graminis* but decreased intensiveness of contamination with rust.

More effective immune-corrector was the specimen DKM-1. The spray promotes to decrease of contamination level of *erysiphe graminis* of flagged leaf to 10, the second leaf from ear – 28, the third – 26%. The quantity of rust pustules on the top of the third leaf decreased to 88 %.

In 2007-2009 the action of growth regulators on pathogenesis somehow differed from older ages, but had place and early shown conformity. In these years for period of active vegetation of precipitations were less than earlier. Necessary to point that decreasing the length of leaf lamina of all circles. The quantity of rust pustules on the third leaf from ear decreased, and contamination of *erysiphe graminis* has increased. The following fact is related with the importance of existence of drop-liquid moisture for germination of brand spore – rain or dew. The conidia of *erysiphe graminis* can be germinated in the absence of liquid moisture. There are data that outbreak of *erysiphe graminis* confined with drought period when plants are in weak condition [22].

Spraying the plants this year with specimens DAG-1 and GK-Cu decreased the length of leaf lamina of all circles, and specimens DKM-1 and DAG-2 – the top of the third leaf from ear. Sodium silicate, instead, increased the length of the top of the third leaf to 20, GK-Zn under-flagged to – 28 %.

Specimens: DKM-1, sodium silicate, GK-Cu, DAG-1 strongly decreased the level of contamination of *erysiphe graminis* those leaves that appeared close to moment of treatment.

DAG-2 strengthened the contamination of flagged leaf of *erysiphe graminis*. Quite obvious that in drought conditions the plants of winter wheat prolonged the period of reparation which lead to weakening pathogenesis. On the versions of usage of GK-Zn level of contamination of *erysiphe graminis* plant was on control level.



Spraying the plants with sodium silicate promoted to decreasing the quantity of rust pustules on the third leaf from ear to 55, the second – 72, flagged – 82 %. On the versions of usage GK-Zn the quantity of rust pustules on flagged leaf decreased to 58, the second from the ear - 61 %. GK-Cu stably decreased the quantity of rust pustules in all circles to 26 – 28 %.

The action of specimens DKM-1 and DAG-1 were ambiguously. On the third leaf from the ear happened considerable decrease of the quantity of pustules to 42 and 45 % accordingly. On under-flagged leaves the resistance sharply decreased, the quantity of pustules increased to 44 and 61 %. On flagged leaves newly happened the decrease of the quantity of pustules in comparison with the control to 39 and 33 %. Can be supposed that right after treatment of plants the specimens mobilized protective system with expenses of accumulated energy. Then came the phase of remission, and unfavorable conditions didn't let plants quickly recover reserve of power, as a result – decreasing the immune.

Like in previous years GK-Cu much stronger decreased the contamination of leaves of upper circles, appeared later than treatment period. More considerable was its action on flagged leaf. The quantity of rust pustules on exact photo-synthetically active center decreased to 36 %.

To summarize decade data, we can note that it decreased stronger the contamination of winter wheat with brown rust and erysiphe graminis sodium silicate and DKM-1.

Unquestionable participation of silicon in pathogenesis of parasite diseases proved by many scholars. Silicon absorbs and strengthens plants lamina; decreases lost of water and slow down the development of fungus infections. Simulating action of instant silicon, obviously related to strengthening of consumption of phosphorus and molybdenum, also transfer of manganese in plant lamina. It is supposed that silicon strengthens phosphating and sugar synthesis that increases the supply of energy for metabolic processes and increase of intensive growth of plants [23, 24]. In a number of works, there were referred to phyto protective action of brassinosteroids against parasite diseases by authors [25, 26, 27].

GK-Cu considerably decreased the quantity of rust pustules on flagged and third leaves from ear and percentage of contamination of erysiphe graminis on the second and third top leaves.

CONCLUSION

Studying the action of growth regulators in field conditions partly brings to ambiguous results that involve many contradictions between the data of different researchers. The effectiveness of growth regulators in general depend on soil-climatic factors

of the area, weather conditions in the year of conducted experiment. Thanks to poly-functionality of exogenous phyto hormones can affect on the current of physiological processes, strengthen or decrease the growth of the plant, change its tolerance to phyto pathogen.

In order to decrease contamination with parasite diseases and negative influence of factors to the environment we recommend spraying sowing of winter wheat with specimens DKM-1 GK-Cu, GK-Zn, DAG-1, and DAG-2. But positive influence of researched specimens limits with fungi static activeness. Specimens can be used in prophylaxis to decrease the contamination level of winter rust with fungus parasites.

Exceptionally positive role of sodium silicate says about importance of widely studying of silicon fertilizers and introduces it into the industry of corn culture. The ambiguous results of usage GK-Cu and GK-Zn for contamination of rust also demands further research of these specimens in the following aspect.

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NETWORK ASSAILABLE ANALYSIS THROUGH LOG RETRIEVAL AND DEPLOYING SECURITY MECHANISMS OFF PREMISES

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ABSTRACT

The model that is proposed in this article helps in securing both on and off premises networks of any organization without any ambiguity. Usage of SIEM tool for log retrieval and analysis, firewalls and other security mechanisms to protect environment from intruders helps in achieving a secured network platform. The proposed methodology helps in protecting organization's network from attackers or intruders through lateral movement detection.

KEYWORDS- *SIEM, firewall, security mechanisms, on premises, off premises, lateral movement.*

I. INTRODUCTION

Currently organizations are going through major industry transformation, one such is migrating from on premises to off premises. Here, on premises refers to traditional datacenter approach to house data and off premises refers to hosting data in cloud, which makes data available anywhere, anytime because of the nature of the technology.

Since, data is getting stored in cloud and as we know data is so precious in the current circumstances, we need to secure it from vandalizers or trespassers etc. The proposed methodology assists in providing security for data that is hosted in cloud as well as data that is stored in traditional datacenters. The architecture deals with deployment of security mechanisms and deployment of SIEM tool for log analytics. This helps in detecting lateral movement of attacker. Lateral movement refers to the process where the hacker get unauthorized access over one asset in the network and through that one asset he is capable of gaining access over other available assets

in the network, which is a serious threat to the entire network integrity, this can lead to compromise of entire network of an organization.

Firewall helps in tracking traffic movement of the network both inbound and outbound directions and also it filters the data packets and allows to reach network one which are legitimate and discards other which are not authorized to enter network.

WAF is another mechanism which stands for web application firewall that works solely for website or web application. It can prevent any attack (OWASP top 10 vulnerabilities) that leads to compromising of website or web application.

SIEM tool is used to gather logs from all the networking devices available in the network as wells as from the devices that are hosted on premises. This provides one single platform for log analysis of both on and off premises networking devices. Networking devices can be a virtual instance or a firewall or a WAF or routers or switches etc.

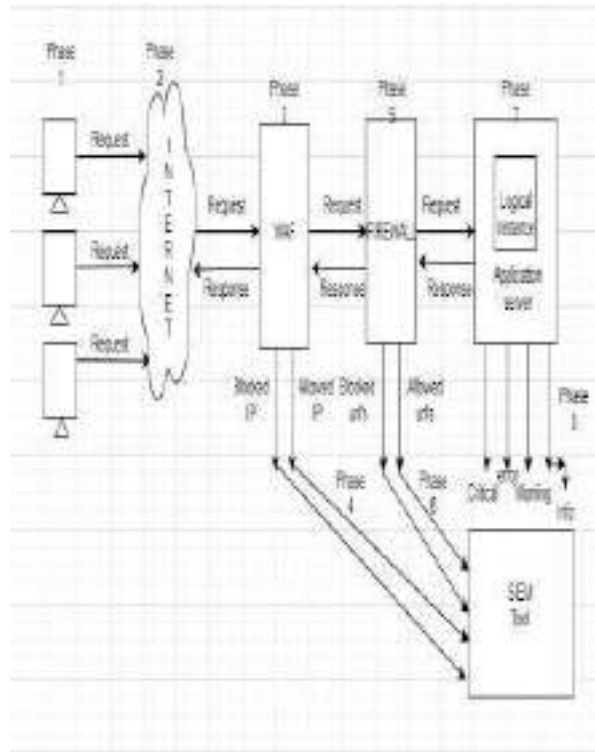


Fig 1. Architecture flow

II. LITERATURE REVIEW

[1] In this paper author proposed a framework that helps in detecting lateral movement in network and also author stated that this framework can be prolonged to all the devices in network. And the paper also deals with event management by the means of SIEM usage.

[2] Author in this paper stated that due to data migrating to cloud and security mechanisms are also getting transferred to cloud environment SIEM tool helps in gathering events that are occurring in the network and helps in securing the cloud environment effectively.

III. PROBLEM STATEMENT

Data stored on premises is bound to certain physical location but when data is migrated to cloud

that is off premises data can be distributed among multiple server instances this involves some serious security threats. And analysing logs from on premises and off premises separately increases workload on administrators.

IV. SOLUTION

The proposed method overcomes the snags that are faced by the administrators during the maintenance phase of network that can be either physical datacentre or cloud environment.

In the proposed model all the logs get stored in log analytics workbook and we can retrieve them whenever we need to analyse them.

Storing logs that are generated from all the devices that are present in network helps in avoiding lateral movement and effectively generate security policies.

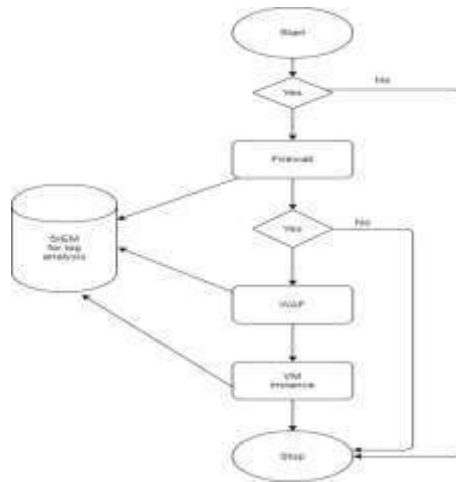


Fig 2. Flow chart

Flow chart above depicts that when a user from public network tries to access resources that are hosted in private network, first the request is traversed through firewall and if the firewall doesn't block the traffic the request further travels towards WAF and here request undergoes inspection once again, if request is found legitimate then access is

granted to the resources that are hosted in intranet, if the request is found malicious then traffic is discarded in the mid-way without reaching the resources. Resource here can be a VM that is configured as web server etc. and finally all these movement made by the traffic will be stored / logged in workbook using SIEM mechanism.

V. IMPLEMENTATION

5.1 working

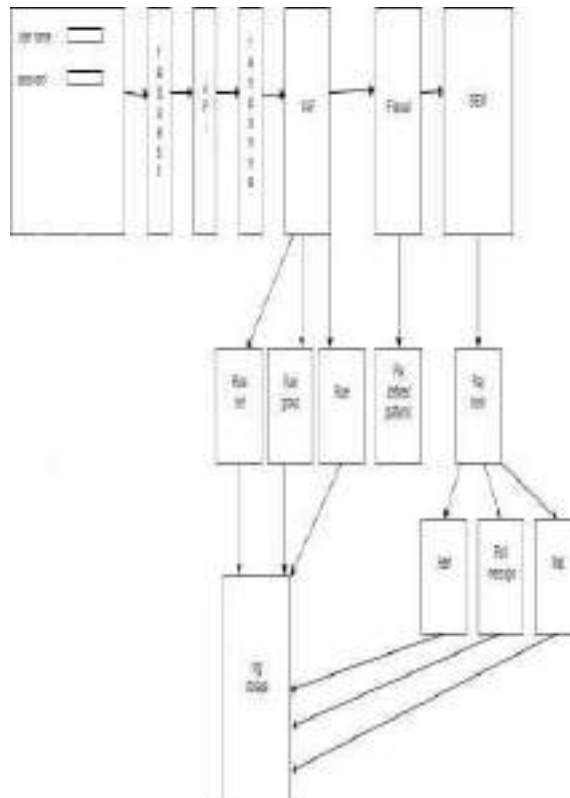


Fig 3. Model representation



The above figure represents how each and every entity is dependant on each other and how data traffic is travelled through out the architecture. When user tries to access the website firstly the request is being inspected by firewall and firewall checks for the rules that are inculcated in it that is both inbound and outbound rules that are configured in it. Now WAF checks the request pattern that is if any malicious payload which leads to website comptonization is detected and dropped. It basically deals with OWASP top 10 vulnerabilities like XSS scripting attack, SQL injection attack, broken access control, sensitive data exposure etc. If request is free from all these vulnerabilities website will be available for access to the internet user. Now finally, all these request movement is logged using SIEM and further can be used to examine the logs in order to escalate any issue before it persists. Logs are collected from all the available devices in the network that are configured to SIEM and this tool stores logs in segregated manner that is like firewall logs are kept isolated from WAF logs and WAF logs are separated from vm logs etc. which results in easy maintenance and analysis of logs. To gather logs from the devices that are hosted in traditional datacentre we can make use of connector that connects SYSLOG server that resides in datacentre with SIEM that is configured in cloud premises. Usually SYSLOG server is used to store all events using syslog mechanism from all the networking devices. This can be connected to SIEM and logs from both on and off premise can be made available in one centralized platform which reduces the workload on administrators by avoiding log management separately.

5.2 Software required

Azure sentinel

Microsoft Azure Sentinel is a scalable, cloud-native, security information event management (SIEM) and security orchestration automated response (SOAR) solution. Azure Sentinel delivers intelligent security analytics and threat intelligence across the enterprise, providing a single solution for alert detection, threat visibility, proactive hunting, and threat response.

Azure Sentinel is your birds-eye view across the enterprise alleviating the stress of increasingly sophisticated attacks, increasing volumes of alerts, and long resolution timeframes.

- Collect data at cloud scale across all users, devices, applications, and infrastructure, both on-premises and in multiple clouds.
- Detect previously undetected threats, and minimize false positives using Microsoft's analytics and unparalleled threat intelligence.
- Investigate threats with artificial intelligence, and hunt for suspicious activities at scale, tapping into years of cyber security work at Microsoft.
- Respond to incidents rapidly with built-in orchestration and automation of common tasks.

Firewall

Azure Firewall is a managed, cloud-based network security service that protects your Azure Virtual Network resources. It's a fully stateful firewall as a service with built-in high availability and unrestricted cloud scalability.

You can centrally create, enforce, and log application and network connectivity policies across subscriptions and virtual networks. Azure Firewall uses a static public IP address for your virtual network resources allowing outside firewalls to identify traffic originating from your virtual network. The service is fully integrated with Azure Monitor for logging and analytics.

Web Application Firewall

Azure WAF is a web application firewall that helps protect your web applications from common threats such as SQL injection, cross-site scripting, and other web exploits. You can define a WAF policy consisting of a combination of custom and managed rules to control access to your web applications.

Virtual instance

A VM is a simulation of a physical machine, such as a workstation or a server, that runs on a host that supports virtualization. Many VMs can run on the same host, sharing its resources.

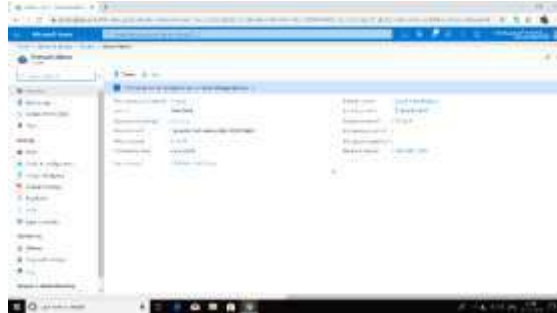
VI. EXPERIMENT

- Firewall for packet inspection.
- WAF for protecting web application or website.
- SIEM for log analytics.
- Vm to host webserver.

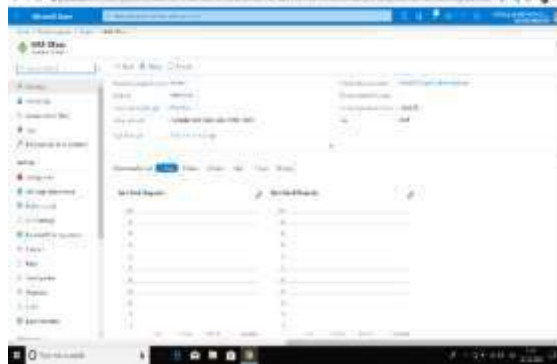


VII. RESULT ANALYSIS

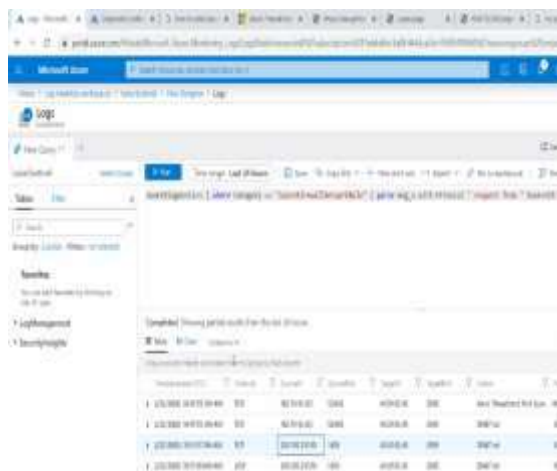
- Firewall to secure the infrastructure.



- WAF to protect web application or website from unauthorized access.



- SIEM for log analysis and storage.



VIII. CONCLUSION AND FUTURE ENHANCEMENT

Securing data (web application/ data/ CRM application/ financial information etc.) that is stored in cloud premises by utilizing efficient security mechanisms such as firewall for packet inspection, WAF for protecting web server from different attacks that can have huge impact on the business, SIEM for log analysis. This model helps in tracking users who

are trying to access the services that are available in the intranet of an organization this assists in securing the environment even more efficiently.

We can use the same SIEM for log analysis of the devices that are present on premises. This approach can make all the logs i.e. both cloud level and physical level logs centrally available in a single platform which reduces administrator’s workload. To achieve this, financial aid is required.



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A STUDY OF FSN ANALYSIS FOR INVENTORY MANAGEMENT IN KORADI THERMAL POWER STATION (KTPS), MAHARASHTRA

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ABSTRACT

Inventory management is used in a company to plan the purchase, handle, store and accounting of the material. In this study the process of inventory management used in the KTPS, Koradi is elaborated. In manufacturing industry the raw material is purchased initially and then it is transformed into the final product. Here, purchasing the raw material, handling the raw material by the machines and labors takes place simultaneously storing the material takes place and finally the final product is going for customer buying. But in power generation company the finished or semi finished material is purchased from vendors, is going to use for maintenance purpose of various sections such as boiler maintenance, turbine maintenance, electric maintenance, checking and instrumentation, coal handling plant, ash handling plant etc. only for the generation of electricity. This study documented the various methods of inventory management amongst FSN analysis in detailed.

KEYWORDS: *Koradi Thermal Power Station, Nagpur; Inventory management, FSN analysis*

INTRODUCTION

The term inventory means the accumulation of the material with company so that the activities can be made smoothly. Inventory management refers to the continuous supply of material so that no work should be held up. It also indicates the decision made by higher authorities, store manager and store keeper with respect to the need on site for the maintenance purpose. In any industry today inventory optimization is such a vital function. Excess and Shortage of inventory in all levels of the supply chain can affect the availability of products and/or services to consumers. Several monitoring systems and processes can be employed to check inventory imbalances to minimize the supply and demand dynamics. To simply these monitoring systems and process items/materials/products are classified into different

groups” (Mitchell *et al.*, 2013). A case study on BHEL in which inventory management, the accumulation of surplus stores and non-moving items in the organization and recommends the surplus and absolute stores with the month wise preparation of inventory statements (Bansal, 1976). The study also looks up the flow of material from the entry to the final use mostly in the maintenance purpose. Various departments of KTPS appear under the process of inventory. As the initial cost is very high required for the setting up of power plant afterwards there is only need to maintain the plant for generating electricity. So, finished or semi finished material only required for maintenance of the various sections of the KTPS. The inventory is thus procured, stores, and use for maintenance purpose with the help of various methods used for inventory management.



Following characteristics are considered in inventory management process:

- Number of items.
- Time duration of the material.
- Number of stocking points or locations
- Product nature

METHODOLOGY

Research methodology is carried out by the two methods of data collection mainly Primary data and Secondary data.

Primary data

Primary data is collected from the field of control and supervision of researcher. The data has been gathered through interaction and discussion with the executives and store keeper working in the division. Some of the information is also gathered from the other employees working in the division such as, when do they require materials, how they convey the information to the store keeper etc.

Secondary data

The inventory management study is based on secondary data. The secondary data has been collected from annual reports, manuals; purchase registers, storage records of the organization. Data collection has also been done by the Bin cards and records in the store of the division. Data is also collected from the manuals and monthly magazines of Koradi Thermal Power Station, MahaGenco etc.

Various types of inventory management analysis techniques are FSN, XYZ, ABC, HML, VED, S-OS etc. SAP system is the main methodology used by Koradi thermal Power Station. KTPS uses SAP system is used for many purposes such of applying defects, issue of defects, and cancelling the work permits, consumption of materials etc. Consumption of materials through SAP system helps management to determine and calculate the exact amount of material is consumed during the operation and maintenance work. Here the study is carried on FSN analysis (Yogesh Kumar *et al.* 2017; Mitra *et al.* 2015).

- Nature of supply process.

OBJECTIVES OF STUDY

To evaluate the inventory management by FSN analysis at Koradi Thermal Power Station, Koradi, Dist. Nagpur.

FSN analysis

FSN analysis is used for the determination of movement of the items based on the determined period of six months. FSN analysis is an inventory management technique. The items are classified according to their rate of consumption. The items are classified broadly into three groups: F: Fast moving, S: Slow moving, N: Non-moving.

Fast moving means the materials which are consumed within 6 months time frequently.

Slow moving means the materials which are consumed within the period of 6 months to 12 months. This shows the active inventory of the section. The active, fast-moving goods need to be reviewed regularly. This helps section make smarter buying decisions from suppliers and keep inventory relevant to demand. It can also show section which items are no longer necessary to keep in stock.

Non moving means the materials which are not consumed within 12 months. The non moving material is normally dead material.

Based on the date of receipt or the last date of issue of material Major stores remind the slow moving and non moving stock to the respective section to consume the slow moving and non moving material timely. The respective section has to show the period on which the slow moving and non moving material is going to be consumed within the year.

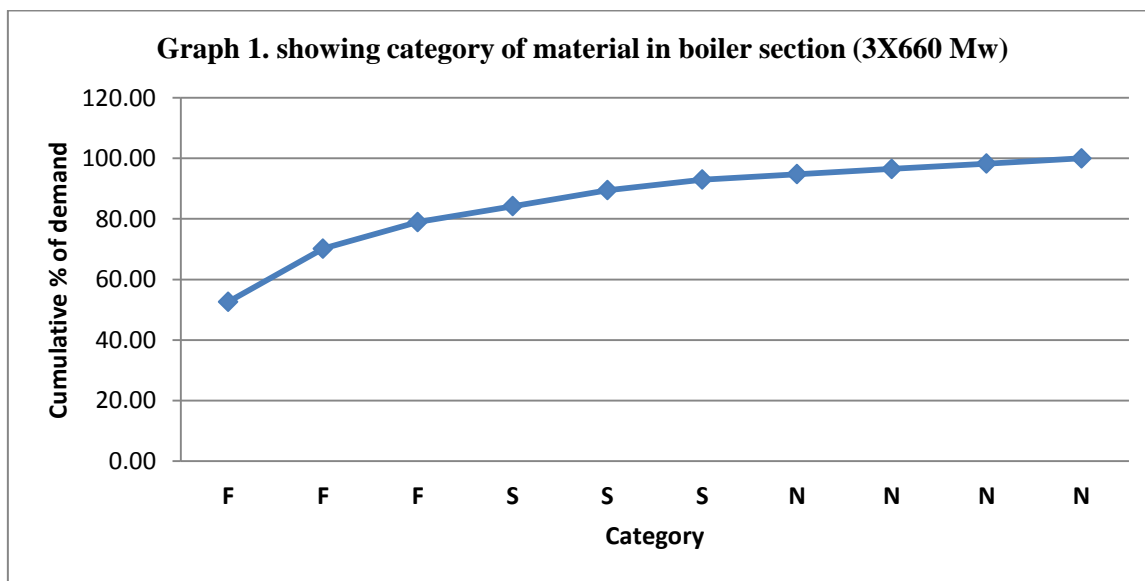
Therefore, section use the information from the FSN analysis to shape which goods should have priority in the store and which items should go. Section can hold clearance sales or give items to other sections or other plants. It's important to get them off so they don't continue to cost money to KTPS.



OBSERVATIONS

Table No. 1. Category of Oil in Koradi Thermal Power Station

CATEGORY OF OIL IN KORADI THERMAL POWER STATION					
SR. NO.	MATERIAL	ANNUAL DEMAND	% ANNUAL DEMAND	CUMULATIVE PERCENTAGE	CATEGORY
1	SERVO MESH GOLD 320	18900	52.63	52.63	F
2	HYDRAULIC SP SY HLP 68	6300	17.54	70.18	F
3	SERVO MESH SP 680	3150	8.77	78.95	F
4	SERVO SYSTEM 46	1890	5.26	84.21	S
5	SERVO SYSTEM 32	1890	5.26	89.47	S
6	SERVO PRESS 220	1260	3.51	92.98	S
7	SERVO MESH SP 220	630	1.75	94.74	N
8	SERVO CYL M-1000	630	1.75	96.49	N
9	SERVO MESH SP 320	630	1.75	98.25	N
10	SHELL - 46	630	1.75	100.00	N



RESULT of FSN analysis

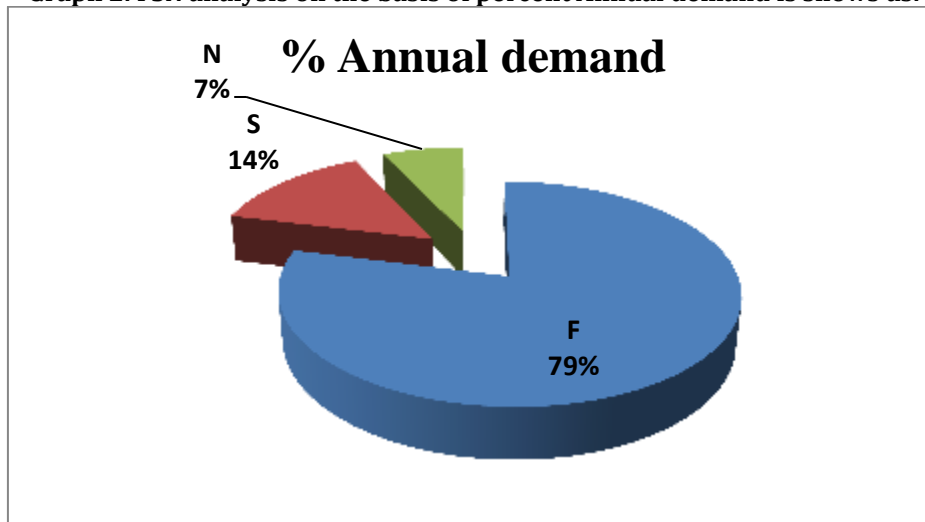
In this analysis only generally used twenty items is used. So their result is shown below

Table No. 2. FSN analysis on the basis of percent Annual demand

RESULT OF FSN ANALYSIS				
Category	Annual demand	% Annual demand	Item used	% item used
F	28350	78.95	6	30
S	5040	14.04	6	30
N	2520	7.02	8	40
TOTAL	35910	100	20	100



Graph 2. FSN analysis on the basis of percent Annual demand is shows as:



DATA ANALYSIS AND INTERPRETATION

The inventory of the KTPS is mainly provided and controlled by the major group known as Major/central stores. The inventory procurement and controlling is done by the major stores to the various other departments of the Koradi Thermal Power Station. The quality of the material is checked by the Quality department when the material is arrived in the Major stores or Section store if required on emergency basis unloaded directly on site.

CONCLUSION

From the above study we have concluded that FSN analysis helps to the organization to manage the inventory item effectively not only for unprocessed material but also for output. It will help to understand the problems occur during purchasing, handling, storing of the material. As well as better use of the inventory to minimize the time and effort of the employees so as to obtain smooth functioning of the organisation.

The FSN analysis of inventory management focus to maintain good quality and supply of raw material so as to obtain the good quality of output at minimum use of raw material.

ACKNOWLEDGEMENT

Authors are thankful to the Officials, KTPS, Koradi; Principal and Head of the Department, Jhulelal Institute of Technology, Nagpur.

Various methods used for inventory management are also described in this report such as ABC analysis, HML analysis, FSN technology, VED Analysis, Re-Order Level, Safety stock and SAP methods used for the smooth functioning of Koradi Thermal Power Station. Arrangement of the inventory (if not available with the stores) from the other sections and plants is prior important as no work should be delayed so as to maintain the continuous supply of the electricity to community.

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DEVELOPMENT OF TOURISM IN CENTRAL ASIA (ON THE EXAMPLE OF UZBEKISTAN AND KAZAKHSTAN)

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ABSTRACT

The article reveals the relevance of cooperation of Central Asia in the field of tourism during the years of independence, using the example of the Uzbek and Kazakh peoples. The rich historical, cultural and spiritual heritage of the Central Asian people, which has accumulated from ancient times to the present day. An interchange that can be traced back to the ancient Great Silk Road, which contributed to the enrichment of nationalities' cultures, the establishment of diplomatic relations between states, the establishment and development of trade relations and the spiritual enrichment of peoples. And nowadays the invaluable heritage of the Central Asian peoples contributes to the establishment and development of a new industry - tourism in the period of independence, as historical, sanitary, sports, gastronomic as well.

KEY WORDS: *Tourism, culture, cooperation, World Tourism Organization, Tourism Fair Agreement.*

INTRODUCTION

A significant event in the development of the tourism industry in Uzbekistan is the event that, on the basis of giving the government great attention to the formation and development of tourism potential in the republic, in 1993 the National Company "Uzbektourism" was accepted as a full member of the World Tourism Organization [1, p.23]. This provided great opportunities for establishing close contacts with travel agencies in many countries of the world, and to raise their interaction to a qualitatively new level. At the same time, Uzbekistan, like many other countries of the world, has become a regular participant in the International Tourism Fair (ITB) annually organized by the World Tourism Organization. So, having created the necessary tourism infrastructure in the country and entering the orbit of international tourism, Uzbekistan began to implement a wide network of cooperation with travel companies and firms of foreign countries. At the same time, close cooperation between the Tourism Industry of Uzbekistan, carried out with the countries of Central Asia, and in particular with Kazakhstan, is no exception.

RESEARCH METHODS

It is noteworthy that the Central Asian region is distinguished by its uniqueness, both in geographical location with contrasting natural and climatic features, its flora and fauna, as well as unique historical and cultural monuments of antiquity and modern achievements of the socio-economic, cultural and spiritual life of peoples. In this regard, over the years of independence between the republics of Central Asia at a qualitatively new level, an active connection has been established in the field of tourism, which makes it possible to maintain and further develop the close interaction that existed over the centuries between their peoples. This form of interaction and cultural and spiritual mutual enrichment of the peoples of Central Asia is most clearly manifested between the republics of Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, and Turkmenistan.

RESULTS AND DISCUSSIONS

International tourism continues to show steady and unremitting growth that exceeds the growth rate of the global economy and does not show



any significant signs of weakening, given that global arrivals are expected to grow by 3.3% from 2010 to 2030, and will reach 1.8 billion by 2030, according to the UNWTO long-term forecast report *Tourism on the way to 2030*. Between 2010 and 2030, tourist arrivals in developing countries (+ 4.4% per year) are expected to grow at a double rate compared to develop and the economy (+2.2% per year). With the exception of Afghanistan, the Chinese Autonomous Region of Inner Mongolia and the Xinjiang Uighur Autonomous Region, and Turkmenistan, the total volume of international tourist arrivals in the CAREC region in 2018 is estimated by the World Tourism and Travel Council (WTTC) to be just under 20 million, with a growth forecast in the ten years to 2028, almost 5%. Despite this, the aggregate share of CAREC countries (excluding the People's Republic of China) considered in a global context is less than 2% of world tourism. The market share owned by developing countries increased from 30% in 1980 to 45% in 2016, and is expected to reach 57%, or more than 1 billion tourist arrivals by 2030 [2, p.5-6].

Attaching great importance to the development of tourist relations between the republics of Central Asia, the leadership of Uzbekistan initiated the need to form its legislative base. This initiative found mutual support from the government of Kazakhstan and Kyrgyzstan. As a result of a unified approach and views on the development and strengthening of tourist relations, in January 1994, an Agreement was signed between representatives of the governments of the Republic of Uzbekistan and the Republic of Kazakhstan [3, p.17]. It provided for a wide range of cultural and spiritual interaction between the peoples of the two countries, including the deepening of cooperation in the fields of culture, health, science, education, tourism and sports. A similar document was also signed in January 1994 between the governments of the Republics of Uzbekistan and Kyrgyzstan [3, p.21].

In addition, based on the high interest of the parties in the development of mutually beneficial cooperation in the field of tourism, in December 1997, an agreement was signed in the city of Tashkent between the Government of the Republic of Kazakhstan, the Government of the Kyrgyz Republic and the Government of the Republic of Uzbekistan on cooperation in the field of tourism [4, p.33].

In order to further deepen and expand tourism cooperation, as well as to intensify this area, additional services, in June 8, 2000, another Agreement was signed in Astana. It was achieved between the governments of the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan and the Republic of Uzbekistan, which focused on cooperation in the development of

sanatorium, resort, health and tourist institutions and organizations for a period of 5 years [5, p.27]. The peculiarity of this Agreement was that it laid the foundation for the expansion of cooperation in the development of sanatorium, resort, health and tourism institutions and organizations in order to create the most favorable conditions in them for strengthening the health of citizens of their states, a deeper acquaintance with the culture, nature and attractions, as well as with historical monuments and national traditions of the peoples of neighboring countries. In addition, this document encouraged organizations to create joint ventures and to implement investment projects in the field of organizing spa treatment, rehabilitation and recreation for citizens.

According to the interstate Agreements on cooperation in the field of tourism, great responsibility for its implementation was assigned to the activities of cultural and tourist institutions. In particular, on the basis of the agreements reached, the "Uzbektourism" National Company, together with the Ministry of Tourism and Sports of the Republic of Kazakhstan, began to develop an action plan and implement a joint tourism business. It included several areas of tourism events, each of which was distinguished by the originality and originality of routes. So, for example, the first of the directions provided for the wide familiarization of citizens of both states with achievements in the field of economics, social development, culture, nature, interesting historical monuments, as well as with the traditions of the peoples of both countries. The second direction provided for the organization of joint tourist routes: along the Great Silk Road. The third area is the organization of air routes in the capitals of the republics of Central Asia. The fourth direction is inter-republican bus routes in the cities of Uzbekistan and Kazakhstan. And finally, the fifth direction - mutual tourist and excursion service - routes on tourist trains [5, p.29].

In addition, within the framework of the above Agreements, Uzbektourism National Company on the one hand, the Ministry of Tourism and Sports of the Republic of Kazakhstan on the other hand, pay great attention to the mutual participation of their representatives at events organized both by the World Tourism Organizations on a global scale and in the framework of bilateral events held in the field of tourism. This creates a favorable environment for establishing close contacts between travel companies and companies from different countries hold an exchange of views on pressing issues in the field of the tourism industry, outline long-term plans for mutual cooperation in order to further increase the flow of tourist exchange.



So, for example, in March 1996, the International Tourism Fair (ITB) - 96 was held in Berlin (Germany). More than 170 countries of the world participated in its work, among which Uzbekistan, Kazakhstan and Kyrgyzstan also presented their tourism potential [6, p.1].

The delegation of Uzbekistan to ITB-96 was represented by 8 independent and regional divisions of the Uzbektourism National Company, Uzbekistan Havo Yullari NAC and one private travel company. The main tasks entrusted to the delegation were to promote the achievements of independent Uzbekistan, its domestic and foreign policy, unique opportunities in the field of tourism and, of course, attracting a large number of foreign tourists to the republic [6, p.3].

It is important to note that within the framework of ITB - 96, the Bazaar was held on the Silk Road - Questions and Problems. Representatives of the Silk Road countries, in particular Uzbekistan, Kazakhstan and Kyrgyzstan, participated in their stands and materials. This event provided an opportunity to discuss the problems arising from the organization of combined tours of the Silk Road. Much attention was paid to the continuation of previously begun joint work with the World Tourism Organization to promote a project related to the revival of the tourist route along the Great Silk Road, which directly runs through the territory of Central Asian countries [6, p.3].

Another important event in bringing together the tourism potentials of Uzbekistan and Kazakhstan was their participation in the 30th Meeting of the WTO Commission on Europe, which was held in Germany in June 1996. Taking part in the seminar-meeting of the delegation of Central Asian countries, they saw as the main goal the need for propaganda for the development of the Great Silk Road project and attracting a large influx of tourists to it. In this regard, the WTO Deputy Secretary General Francesco Frangialli noted that: "The annual International Tourism Fair promotes the joint efforts of the countries located on the Silk Road, in order to more actively develop cooperation among themselves and attract foreign tourists from Europe and America to these countries" [7, p.1-3].

Therefore, the same meetings, where a wide range of issues of international tourism exchange were discussed, were repeatedly held in the countries of Central Asia themselves. So, for example, in October 2004, the 10th International Tourism Fair was held in Tashkent. In its work, along with companies from many countries of the world, representatives of travel agencies of Kazakhstan took part. During the fair, each participating country presented an exhibition reflecting its tourism potential. This carries

a lot of information, opening up new aspects for cooperation. This is evidenced by the numerous agreements reached between tourism companies and firms in Uzbekistan and Kazakhstan [8, p.4].

The same event on a global scale, in April 2005, was held in the Republic of Kazakhstan. The 5th Anniversary Kazakhstan International Tourism Fair "Tourism and Travel" KITF-2005 was held here in Almaty, where, along with delegates from many countries of the world, representatives from both the Republic of Uzbekistan and the Republic of Kyrgyzstan also took part. This meeting allowed us to further expand the boundaries of interaction between tourism companies and firms of the Central Asian republics. So, for example, such tourist companies of Uzbekistan as Uzintur, Asiaintourbusiness, actively cooperate with tourist companies of Kazakhstan in the field of tourist exchange and organization of combined tours along the Great Silk Road. Among the large Kazakh tourism organizations that are actively involved in the exchange of tourists can be called such as "Nomad Travel", "Makus Silk Road Adventures" and others [9, p.5-6].

In order to accelerate the development of tourism in Uzbekistan, by the Decree of the President of the Republic of Uzbekistan dated December 2, 2016, an authorized state body, the State Committee for Tourism Development, was formed to more effectively promote the national tourism potential in the domestic and foreign markets. Today in Uzbekistan there are 795 Travel companies and as of 2018 the tourist flow is - 5 million tourists [10].

In June 2017, in Astana, the National Chamber of Kazakhstan "Atameken" and the Association of Private Tourism Organizations of Uzbekistan entered into an agreement on cooperation in the field of tourism. The National Tourism Product Promotion Center under the State Committee for Tourism of Uzbekistan and the Kazakh Tourism National Company, as well as the Ontustik Tourism Center tourist information center, signed memorandums of cooperation [11].

CONCLUSION

The opening between the countries of rail and road communications positively contributes to the growth of tourist flow to both countries, which we can observe today. The high-speed passenger train Almaty-Tashkent, Tashkent-Almaty, additional Astana-Tashkent flights are indicators of cooperation in this area, the visa-free regime established by the two republics contributes to such positive dynamics. The close and coordinated interaction between tourism companies and firms of the republics plays an important role in the regular exchange of tourists.



In conditions of independence, the mutual interest of the peoples of Uzbekistan and Kazakhstan to the cultural and historical monuments of antiquity, as well as modern sights and achievements of socio-economic transformations, does not weaken is growing. This helps to strengthen the bonds of friendship and cooperation between the peoples of our republics. Moreover, this form of cultural and spiritual interaction between peoples serves as one of the most stable forms of public diplomacy in strengthening interstate cooperation.

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IMPLICATION IN THE ARTISTIC TEXT

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Article DOI: <https://doi.org/10.36713/epra4292>

ABSTRACT

This article examines the specific features of the literary text, its meaning. Also, the complex semantic structure of implicitism expressed in speech, is expressed through various means. Therefore, in the research showed that linguistic ability to comprehend and also the reserve of general knowledge as well.

KEY WORDS: *Literary text, language units, implicit, repression, artistic skill, explicit, anthropocentric.*

INTRODUCTION

It is natural that the peculiarities of a literary text make it effective in the study of its hidden meanings. Along with the linguistic ability to comprehend and comprehend them, the reserve of general knowledge in the mind is also activated. M. Hakimov uses the term “general” to describe the concept of implication and notes that it covers all hidden meanings, but although no research has been conducted in the Uzbek language, the theoretical sources of classical literature are very rich in factual material in this area [1]. Speech manifests itself in the form of a syntactic device in the process of information exchange as the main means of communication between people - communicative speech integrity. The virtual base of a particular language is actualized in spoken sentences. As a result of the global development of linguistics over the last hundred years, a multifaceted paradigmatic field of study of the position of speech as a syntactic whole with layers of expression, content and meaning was formed, and on this basis the possibilities of textual structure began to be explored.

RESEARCH METHODS

Researcher N.A. Panina was one of the first to address the issue of implication (1979): “Implicitism is the ability to indirectly understand the meaning of a sentence and to obtain additional information from it”. Therefore, I.V. Arnold admits that in implication

“additional meanings appear in the micro context and are not directly expressed by language units”.

E.V. Ermakova in the context of syntactic semantics initially the main characteristics of implicit (G.G. Pocheptsov, I.P. Susov, L.V. Lisochenko, Yu.S. Martemyanov, N.D. Arutyunova, V.V. Bogdanov) if investigated and the issue of implicitity in the direct literary text is relatively little studied (Dolinin 1983, Bogdasaryan 1983, Nikitin 1988, Sitdikova 1985, Molchanova 1988, Bezugla 2007, Ermakova 2007, 2008, 2009, Bertuccelli-Papi 2000) [2].

RESULTS AND DISCUSSIONS

In Uzbek linguistics, the views on the external and internal meanings of the work of art have long existed in the classical literature, but the research on implicitism in modern literary texts is still in its infancy. The complex semantic structure of implicitism expressed in speech, expressed through various means, is one of the most complex issues of interest to many today. The implicit meanings expressed implicitly also depend on the writer's artistic skill, the extent to which he has mastered the richness of language, and his ability to make skilful use of the methodological possibilities of language units. This leads to the conclusion that artistic texts can be a broad field for defining the means of expressing implication. The extent to which the author intends to provide implicit information



through his work, the understanding of the hidden statement of the expressed content depends on the level of the addressee's thinking ability and perception of the world.

The concept of implicitism is useful in the analysis of many symbolic-figurative prose works that have appeared in Uzbek prose in recent years as "an element that is not directly expressed in linguistic means, understood by the listener due to the interaction of the conditions of speech structure and explicit meaning" [3]. For example, the story of Nazar Eshankul "The man led by a monkey", Uncle Murad's "Fields left by my father", Murad Muhammad's novel "Lolazor", Khurshid Dustmuhammad's novel "Market" and many others.

According to the anthropocentric principle, the speech situation in a literary text acquires a polyphonic essence: "the author is the creator of the work of art; moving person; the reader is the "creator" of the work of art".

Approached from this point of view, if the addressee-addressee dialogue takes place in a simple discursive text, the meaning of the literary text becomes twofold complicated. The author's subjective attitude is also understood in the process of "moving persons", for example, the process of discursive communication between the characters.

— *Менга қара, Қурбоной.*

Қурбоной хола қаддини ростлади. Комиссар сут бидонини қор устига қўйиб, алланечук қунишиб турар, заҳил юзи ўйчан эди.

— *Ростингни айт! — деди кинояли илжайиб. — Жойнамоз устида ҳар куни қарғасанг керак мени? Ота-онанг учун, ўзинг учун... Фақат тўғрисини айт!*

— *Ўзимга нима қипти? — деди Қурбоной хола дили оғриб.*

— *Хэх! — Комиссар калтакесакдек чирқиллаб кулди. — Ўзинг бўлмаса ота-онанг учун...*

— *Мен ҳеч кимни қарғамийман, — деди Қурбоной хола ишонч билан. — Қуръонда битилган: Аллоҳ ҳар нарсани кўргуувчидир. Танғрим ҳаммасини кўриб турибди.*

Комиссар бирпас гезариб турди-да, бидон бандидан кўтарди. Индамай нари кетди. [Ў.Хошимов "Тушда кечган умрлар", 74-бет.]

"Look at me, Kurbanoy".

Aunt Kurbanoy straightened up. The Commissar placed the milk jug on the snow, and sighed, his ugly face thoughtful.

"Tell the truth!" He said with a sarcastic smile. "You must curse me every day on the couch?" For your parents, for yourself ... Just tell the truth!

"What happened to me?" Said Aunt Kurbanoy, her heart aching.

- Xex! The Commissar laughed like a lizard. "If not for you, for your parents ..."

"I am not cursing anyone," said Aunt Kurbanoy confidently. - It is written in the Kuran: Allah (God) is All-Seeing. God sees it all.

The Commissar walked for a moment and lifted the canister. He walked away in silence. [U. Hoshimov, "Lives in a Dream" p. 74]

In this passage, the implicit meaning of the text emerges through allusion. Allusion (Latin *allusio* - sign, joke) is a stylistic method based on the reference to a real political, domestic, historical or literary fact that is considered familiar to all. In essence, it comes close to the art of *talmeh*, which is widely used in Eastern classical poetry. The difference is that while *talmeh* refers to more popular historical and artistic facts, in allusion the artist may also refer to political, domestic, or artistic facts of his time. That is, in the allusion, the scope of the reference object is wider [5, p.28].

While Kurbanoy's phrase "God sees everything" expresses the opposition "God punishes", this short discursive dialogue at the end of the work is a series of years of colonial years in the former Soviet Union, spiritual pressures, horrors of repression, generations brought up under the influence of the existing social environment. The painful points of the nation, such as the tragedy, are the intersections in the lives of the characters - the Commissar's view of the Victims' Family as a class enemy, the murder of his parents, the flour a young orphan, that it is responsible for many problems in life, and the lives of many people as being typical of the social life of the Commissioner at the end of the chorus who Kurbanoy witness is happening with their own eyes as expressive characters, speech bubble processes through the prism of the author. Interestingly, these implicit meanings emerge not through the author's speech, but through the explicit content in the text of the work and the speech of the characters.

CONCLUSION

Thus, the artist expresses his ideas and thoughts about the environment in the literary text from the point of view of his own point of view, incorporating them into the reality described in his work. That is why the addressee (reader) perceives the literary text as a real reflection of the being, is affected.



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PRE-PAID SMART WATER OVER CLOUD COMPUTING AND WIRELESS SENSOR NETWORK

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ABSTRACT

Water is one of the most vulnerable non-renewable energy which needs immediate from all the sectors of society like an academy, research and from the industry. The deep literature study concludes that 70% of the earth is covered with water bodies that infect the human body made of 75% of water. Water is an integral part of everyone's daily life. Hence these water resources have to be invested wary consciously so that the upcoming generation could survive. The report produced by the World Health Organization (WHO) on India says that the inadequate water management system is a root cause for water scare city though India is well occupied with water bodies. Hence, in this paper, we motivate to propose an efficient water management system (WMS) based on wireless sensor networks and cloud computing. Here, we propose a Prepaid Water Distribution Scheme (PWDS) for the efficient utilization of water resources within the domestic environment. Implementation and validation show promising paradigm towards efficient water utilization.

KEYWORDS: World Health Organization (WHO), Water Management System (WMS), Prepaid Water Distribution scheme (PWDS)

1. INTRODUCTION

Water is one of the most valuable non-renewable energy but nowadays water is going to be scary in the world. 70% of the earth is covered with water bodies, in fact, the human body itself is made up of 75% of water. The major percentage of water is salty i.e. 99% and the remaining 1% is available in the form of normal water. This available 1 % of water again fluctuating based on several factors like rainfall, climates changes which affect the water level of various natural reservoirs like pond, river, and lakes. In the process of dealing with this problem, we have proposed a new model called the Pre-paid Water Distribution (PWD) approach which is based on IoT (Internet of Things) and cloud technology. Fig.1 illustrates the various approaches to smart water.



Fig.1 Smart Water Approaches

Advanced technology has become the integral part of our life [1]. To satisfy the need of the society, almost in each work, we use the technology [2] [3]. In current era computer science is major subject [4]. It has many real life applications such as cloud computing [5], artificial intelligence [6], remote monitoring [7], internet of things [8, 9, 10, 11, 12, 13, 14, 15], SPP [16, 17, 18, 19, 20, 21, 22, 23], TP [24, 25, 26], internet



Security [27], uncertainty [28, 29, 30] and so on. Technology is the mode by which user can store, fetch, communicate and utilize the information [31]. So, all the organizations, industries and also every individual are using computer systems to preserve and share the information. The internet security plays a major role in all computer related applications. The internet security appears in many real-life applications, e.g., home security, banking system, education sector, defense system, Railway, and so on. In this manuscript we discuss about the protection of authentication which is a part of internet security.

The IoT technology helps to setup a network of heterogeneous elements whereas cloud helps to store the end-user data in a centralized pattern. At present we have a smart water meter where it will calculate the usage of water of particular houses/apartment /building, but there is no proper maintenance of data of the user, so there are some disadvantages like cost, wastage of water, sometimes water meter may not work, etc. In the proposed system, we are using prepaid smart water systems on the cloud so that, data of the user will be stored in the cloud, so that it can be accessed anywhere anytime by anybody, and also there will be proper maintenance of data /information. These data can be used for saving water through proper water management because of every water drop matters. The following benefits that can be expected from the proposed system are: Effective utilization of water, Precise consumer information for billing and other managerial tasks, No wastage of water through proper conservation

Water is one of the basic needs required by everyone, water is an essential nutrient for the human body, animals and also plants, etc. We can survive up to several weeks without food but we can't survive without water so water plays an important role. Most of the living organisms depend on surviving, break down food, respiration process, regulate metabolism and dissolves compounds going into or out of the body. The water is also used in a domestic environment for many purposes like; water for drinking, bathing, cleaning cloths, food preparation, gardening, agriculture, and etc. The other outdoor uses are agriculture, industry, petroleum refineries, etc. In all these scenarios water resource is one of the most vulnerable energy. For Instance, if the agriculture field already

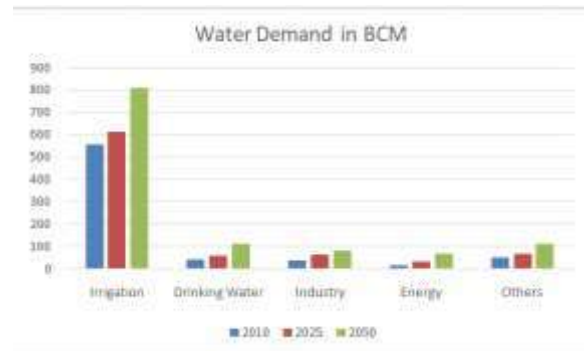


Fig 2: Statistical representation of Table 1

contains moistures then an additional watering process leads to wastage of water. The same way, in the Industrial sector miss management of water resources, may lead to actuate water shortage for other sectors of society. In Table 1, the demands of water by several sectors is presented.

Sector	Water Demand in BCM		
	2010	2025	2050
Irrigation	557	611	807
Drinking Water	43	62	111
Industry	37	67	81
Energy	19	33	70
Others	54	70	111
Total	710	843	1180

Table 1: Water demands by various sector

This subsection explores, the various well known ongoing water projects all over the world [9]. “The First Resilient Kerala Program Development Policy Operation” (Kerala, India): This program improvises the strength of the state against natural calamities and climate change due to flood. [32] “Ceara Rural Sustainable Development and Competitiveness Phase II” (Brazil): This program improvises access to the markets, access to water & sanitation, and adopting climate-resilient approaches by targeted beneficiaries in selected areas of Ciara [33] “Development Policy Financing with a Catastrophe Deferred Drawdown Option and Pandemic Emergency Financing Facility” (Maldives): This program improvises Maldives economic growth to manage the human physical and fiscal impact of climate changes, natural calamities, and disease outbreaks “Climate Resilience Multi-Phase Programmatic Approach” (Sri Lanka): This program improvises the functioning of the disaster management center (DMC). [34] “Vietnam - Dynamic Cities Integrated Development Project” (Vietnam): This program improvises access to urban infrastructure to



improve integrated urban planning in the project cities. [35] “Karachi Water and Sewerage Services Improvement Project” (KWSSIP) (Pakistan): This program improvises for water services in Karachi and to enhance KWSB’s economic and operational performance. [36] “Water Supply and Sanitation Improvement Project” (Cambodia): This program improvises to piped water supply and improved sanitation / domestic services and strengthens the operational performance of service providers in chosen towns and communes [37] “Modernization of Water Supply and Sanitation Services” (Peru): This program improvises the quality of water and domestic services in chosen areas and improve the Borrower’s sectoral institutions and participating

service providers’ management capacity to provide efficient water and domestic services [38] “Urban Water Supply and Sanitation Project” (Cote d’Ivoire): This program improvises the quality and enhances the water services in chosen areas and strengthen the capacity of ONEP for economic planning and management of urban water supply sector [39] “Rural Water Supply and Sanitation Project” (Tajikistan): This program improvises the basic water supply and domestic services in chosen districts and strengthens the capacity of the institution in the water supply and sanitation sector [40] [41].

Project Title	country	Project ID	Commitment Amount	Status	Approved Date
The First Resilient Kerala Program Development Policy Operation	India	P168907	250	ACTIVE	June 27 2019
Ceara Rural Sustainable Development and Competitiveness Phase II	Brazil	P167455	100	ACTIVE	July 18 2019
Climate Resilience Multi-Phase Programmatic Approach	Sri Lanka	P160005	310	ACTIVE	June 25 2019
Vietnam - Dynamic Cities Integrated Development Project	Vietnam	P168290	194.36	ACTIVE	June 11 2019
Karachi Water and Sewerage Services Improvement Project	Pakistan	P164704	40	ACTIVE	June 27 2019
Water Supply and Sanitation Improvement Project	Cambodia	P163876	55	ACTIVE	March 28 2019
Modernization of Water Supply and Sanitation Services	Peru	P157043	70	ACTIVE	July 26 2018
Urban Water Supply and Sanitation Project	Cote d'Ivoire	P170502	150	ACTIVE	June 27 2019
Rural Water Supply and Sanitation Project	Tajikistan	P162637	58	ACTIVE	Feb 28 2019
Development Policy Financing with a Catastrophe Deferred Drawdown Option and Pandemic Emergency Financing Facility	Maldives	P163939	10	ACTIVE	July 1 2019

Table2: History of ongoing water projects [9]

Motivation: In this current work, we have explored a cloud-based pre-paid smart water management system to efficiently manages the water supply. The presence of cloud technology helps to create a centralized system for efficient data management about water consumption. The proposed pre-paid water scheme to supply a certain amount of water for a particular user based on their requests. Through this, we can reduce the wastage of water. The rest of the paper can be viewed as; Section 2: contains literature review; Section 3: explains proposed work, Section 4: discusses the result and discussion and Section 5: covers conclusion followed by references.

2. LITERATURE REVIEW

In this paper, the author designed water management using IoT so this paper tells about the water level monitor continuously from anywhere using an android application. It is a robust system and small in size. But this application is implemented in bungalow or Industrial level in

further added feature can deploy IoT devices in the sea, leak, and river so if any varies in water level the user can get the notification for alerting [42]. In this paper, the author presenting a practical low-cost smart water meter device which is capable of determining possible leakage in the customer's property and reporting current household water consumption levels in real-time in this we can only detect so further added feature is to build any android application so that user can access their data anywhere any time [43]. In this paper, the author implemented a smart water quality monitoring system. This paper deals with checking the quality of water in certain areas based on the temperature relation with ph. The conductivity factor also has been observed for all the water samples using GSM Technology. It is an added feature of incorporating IoT Platform for real-time water monitoring [44]. In this paper, the authors has been deployed an efficient and cost effective method of placing an upper limit on the amount of water used on daily basis. So, incase water level



raised then user is pre-alarmed and the proposed design in a strategy, which will also help the user to keep a check on the amount of water leaking from the faucet. This work is promoting smart planning for health and sustainable water management [45].

This paper focuses on the interfaces and leakages between formal and informal institutional frameworks for water management. There is a case study on the same can be viewed at Tanzania, Mkoji sub-catchment in the Rufiji Basin [46]. In this paper, the author has presented, the architecture for the smart water distribution system (SWDS) that cooperate with the IoT and Cloud Computing and ICT Technologies. This architecture is designed for intermittent water supply while the previous works is for continuous water supply [47]. In this paper, the author has discussed, some of the key challenges for smart water. In order to, overcome the water shortage problems some steps had been carried out like the development of resources, reduction of higher demands, efficiency in treatment and transmission, etc. [48]. This study has especially donated to the scientific community inside the below-stated areas; Understanding contribution in how we consume water in our homes. A paperback study makes use of real-life information from rental apartments. Indicate that the EDA method is a strong approach when no beforehand secure expectation is held and well suited for this type of Investigative studies. How smart meter data can potentially benefit stakeholders at a building level and improve water management. A good example of an integrated and interdisciplinary approach to tackle composite challenges. Another future research area is the execution of data-driven decision making and management based on smart meter data [49].

In This paper author represents the existing and proposed smart water system and network communication identification, customers who are installed utility meter application based on that amount will be calculated and in this paper researched some of the challenges faced when creating scalable smart water meter networks [50]. In this paper author represents the smart water development and also analysis the current key problems of water information like construction is not proper, data resources need to be integrated, business collaboration and the entire framework of particular area smart water designed and finally this paper represents the architecture of regional smart water by using "Internet of things and also cloud computing [51]. In this paper author represents the novel system for implementing an financial and reliable smart water distributing metering using IoT and smartphone application, the work is being extended to cover a range of distribution metering

and lacking for water issues faced by utility centers while providing direct and intangible gains to consumers. And changing the infrastructure of smart water [52].

In this paper, the author represents the architecture and implementation of a smart home irrigation system. The system consists of two sensors motes, special soil humidity sensors, and java application is used for data collection, It also proved that the system is aware of the different watering needs for future work and all the work is managed remotely [53]. In this paper author represents the developments of a small-scale testbed, water box, that simulates smart water networks and also active the evaluation of in-node decision making, energy optimization, automatic control, and event-driven communication algorithms, And also they worked for applying more complex algorithms including new scenarios like security and new sensors such as Water quality [54]. In this paper author represents a monitoring system based on user-defined rules for checking resources consumption and co-ordination in community domains, as future work, they decided to design a greater interaction between the monitoring system, home automation control system so that the execution of rules allow actions on the devices such as blocking, putting in low consumption [55]. In this paper, the author represents smart water sensor can developed by 'n Instituto Technologic de Galicia (ITG), for monitoring water quality in remote place infrastructure is made up of hardware unit and web platform it supports sample measurement, local storage, power source, remote control, platform storage, and graphical representation in a web platform. the main advantage of developed station is versatility [56]

3. PROPOSED SYSTEM

The could computing plays an important role in all over the world because it facilitates the user with more benefits like cost reduction by providing some of the services like software as a service, infrastructure as a service, platform as a service, it central remote servers to maintain data and applications and could computing allows consumers and business to use applications without installation and provide storage facilities with security benefits, with low cost and can access anywhere by using the internet so most of the small business as well big one depends on cloud. By using the cloud enables users to get their applications to market easily if in the case of hardware failure does not affect the data, because of network backups cloud computing uses remote



resources. Saving organizations, the cost of servers and other equipment.

In this paper, the cloud plays an import role because it will store the data of the particular user, information of utility center, and also record the use of water by particular houses so there will be a proper record of each and every user, they can access their data anywhere any time by using the internet and all the areas data will be integrated in the cloud so no need of physical servers required to store the data, it will help the organization with reduction of cost and wastage of water.

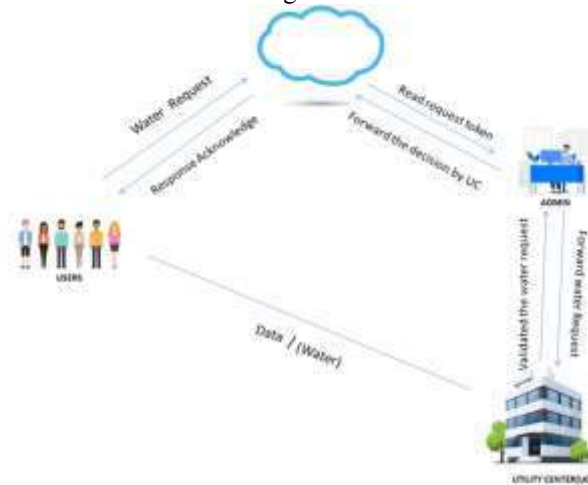


Fig 3: Architecture of Proposed System

4. FORMULATION

Input: Sensor Nodes, Base Station, Mobile Sensors

Output: Water Distribution

Step 1: Initialization sensor Nodes with request to the cloud

Step 2: Forward: cloud will forward these to utility center

Step 3: If, Water (Amount_REQ) < (AVL_Quantity)

Step 4: Acknowledgement from Admin

Step 5: Confirmation from User

Step 6: Admin send the request to Utility center to provide particular quantity of water to user

Step 7: Distribute water from utility center to user

5. DEPLOYMENT

For Deployment used Cup carbon software:

Stages of deployment:

Step 1: login to cup carbon-> First save the file in cupcarbon

Step 2: Deploy the sensor in map

Step 3: Deploy 8 server sensor node

Step 4: Deploy 2 mobile sensor

Step 5: Deploy 2 Base station

Step 6: Connect everything in one network

Server sensor node: A sensor node is an object that can detect any digital event (motion event like mobiles), send and receive data. It can be also mobile. The visible parameters of a sensor node are: the radio range, the radio of the sensor unit and the name.

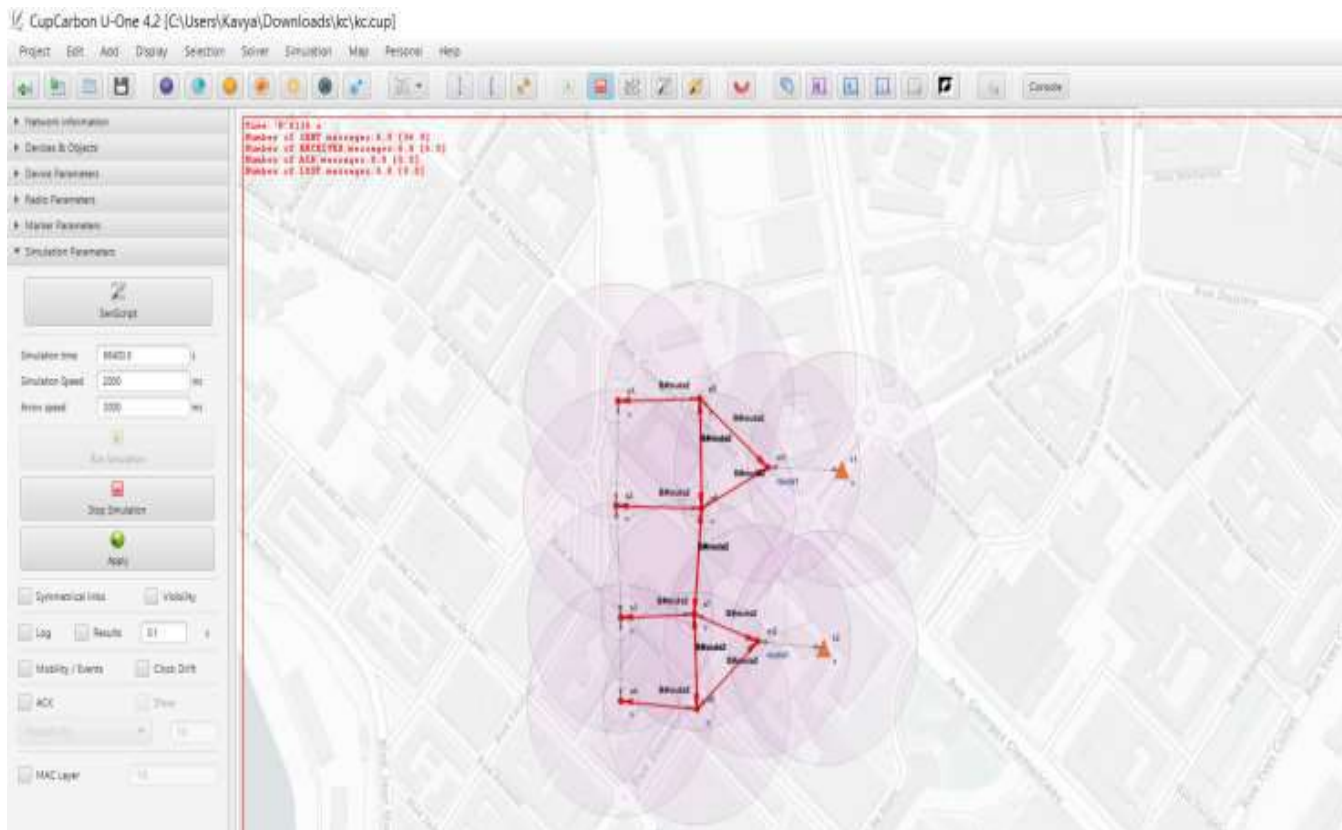


Fig. 5. Sensor Node Deployment

Mobile sensor: Mobile sensor node is used for direction the sensor nodes.

Base station: Base station is used for sinks more sensors in single network

Run Simulation: to start the simulation

Stop Simulation: to stop the simulation

Sen Script Window: to open the Sen Script window and write the script to sensors

Device parameters: Device parameters are used to

6. DISCUSSION

Above Fig 5 describe the deployment of sensor, where Server sensor represents the home/apartments and mobile sensor acts as mediator between houses and utility center to transform the requests from user to admin of utility center. where one base station acts as admin and one base station is utility center, here data is nothing but water and water will be distributed according to user

request. The cloud plays an import role because it will store the Information of the particular user, utility center, and also record the use of water by particular houses so there will be a proper record of each and every user, they can access their data anywhere any time by using the internet and all the areas data will be integrated in the cloud.

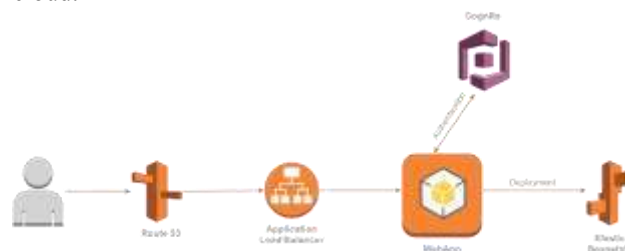


Fig 6: Work flow in Cloud 1



Request ID	Date	User Name	Address	Quantity	Amount Paid
1	Thu Mar 26 13:51:49 IST 2020	aaa	vijaynagafr, bangalore	6000	350
2	Sat Apr 04 09:16:08 IST 2020	xyz	vijaynagar	2000	350
4	Sat Apr 04 10:24:53 IST 2020	Chaitanya	#112, Kumaswamylayout, bangalore 570068	5000	400

Fig 7. Console Management

The simulation results of prepaid smart water over cloud computing and wireless sensor network using different tools the parameters could decrease the wastage of water and maintain the proper data of the user. Proper distribution of water, cost effective, easy to maintain / access.

7. CONCLUSIONS

In this paper, we represented the architecture and implementation of prepaid smart water over cloud computing and wireless sensor network. The sensor consists of three sensor nodes (Server sensor node, Mobile sensor, base station) with the use of cupcarbon software and develops an application using java that is used for conversation between end-user and admin. Performance evaluation showed that our cloud manages the user data and maintain the record of consumption of water and calculate the quantity of water of particular user and also merge the particular area data and integrated with the cloud so utility center can easily manage the data of every user.

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FOUR SWITCH THREE PHASE SEPIC INVERTER WITH FRONT END BOOST CONVERTER

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ABSTRACT

In this paper, four switch sepic inverter with front end boost converter capable of producing quality three phase ac output is explained. Proposed topology is an advanced one when comparing with conventional topologies. Converter offer a design for the inverter with the combination of single-ended primary-inductance, which can obtain higher phase voltages compared to conventional four switch and six switch three phase inverters. A differential arrangement of SEPIC enables to obtained three phase balanced output voltage with only four switches. The output voltage is pure sinusoidal without the help of external filter. This proposed inverter is designed to reduce the cost, complexity and switching losses. It also improves the efficiency and reduces the harmonic distortion. Here the output of the inverters are connected deferentially across the load. The line voltage can not exceed the full value of the input dc voltage, for avoiding this a dc - dc boost converter is placed in the front end of the four switch sepic inverter, thus producing the required output voltage along with the sinusoidal nature. Due to this features, the inverter can be used for the grid integration and pv based power extraction. Proposed topology is operated in both current control algorithm and a modified sine pwm control technique. In this paper it is based on the novel sine pwm control technique. The topology is analysed, simulated using MATLAB/SIMULINK and also a prototype is accomplished to verify the feasibility of the proposed topology.

Index Terms—Three-phase inverter, Bi directionl sinlge ended primary inductance converter, Novel sin pwm control, DC-DC boost converter,



INTRODUCTION

The conventional six-switch three-phase (SSTP) voltage source inverter (VSI) has found widespread industrial applications in different forms such as motor drives, renewable energy conversion systems, and active power filters, also, in some low power range applications. This novel design showing, this is possible to apply a three phase with at best four switches.

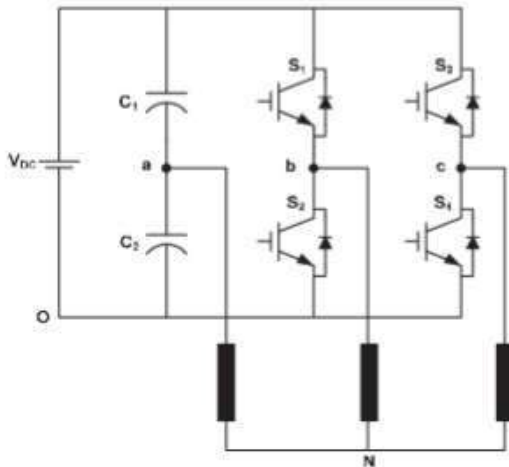


Figure 1. Conventional FSTP inverter.

In three phase inverter with four switch, two load outputs are connected to the inverter leg and the remaining load is connected to the input side at a middle point of the capacitor C_1 and C_2 as shown in figure 1. Comparing with this SSTP inverters four switch three phase inverters have some more advantages such as reducing number of switches and also reduces the switching losses. And also reducing one entire leg we can also reduce the interface circuit. However there are also some disadvantages for the conventional FSTP inverter, it only performs for DC-AC buck operation and also the peak output phase voltage can be reduced by $V_{dc}/2\sqrt{3}$, where it is $V_{dc}/2$ in SSTP. So that for avoiding this problem, insert a boost converter (DC-DC) between the input side and the three phase inverter. So that we can improve the rate of the phase voltage than a normal converters.

Here introducing a design for the four switch three phase inverter topology followed by the SEPIC converter with a boost converter. The SEPIC converter provides both buck and boost operation. But here only used the buck operations. Although this inverter can rise a phase voltage comparing with the conventional four switch three phase voltage source inverter than two. Another feature of the proposed SEPIC inverter with boost converter is getting a pure sinusoidal output

voltage waveform and also avoiding the filter requirements at the output stage with the help of a modified sine pwm control.

LITERATURE REVIEW

After reviewing the literature, it can be concluded that only limited inverters are performed in this area. [1] In single phase SEPIC inverter topology, employs only two switches to achieve DC-AC conversion with a full utilization of the DC input voltage (i.e. the output AC voltage peak is ranged from 0 to VDC). In addition, it generates a pure sinusoidal wave at output terminals. Unlike conventional VSI, the single phase SEPIC inverter has no vital need to insert a dead band between the two switches, which significantly reduces the output waveform distortion and gain non-linearity. But this converter is applicable only in single phase. [2] Some research efforts have been directed to develop inverter topologies that can achieve the aforementioned goal. The results obtained showed that it is possible to implement a three-phase sepic inverter with only four switches. This makes it very robust and serves major reason to be used widely in industries. This sepic based four switch three phase inverter has got many advantages over conventional four switch three phase inverters, like capacitor voltage balancing issue and maximum dc bus voltage utilization. The switching pulses are generated with the help of modified sine pwm control technique. [3] Different Control Options For The B4 Inverters are listed, Two-Level Current Control, Feeding a Three-Phase Load From Two Voltage Sources, Phase Asymmetric Control Of B4 Bridge. [4] Micro-grid research has received the prime interest in the domain of power system research due to the efforts of different governmental agencies to reduce the consumption of fossil fuel. Renewable energy is also penetrating in the modern power grids to reduce the global carbon footprints. In the recent past various sophisticated control methodologies as well as different high end converter/inverter topologies are investigated to ensure efficient operation of the micro-grid systems. Three-phase micro-grids are also receiving significant research interest due to the high level power transfer capability of the overall power network.

PROPOSED SYSTEM

This describes in detail about the circuit topology of the proposed four switch three phase sepic inverter with front end boost converter. This sepic based four switch three phase inverter has got many advantages over conventional four switch three phase inverters, like capacitor voltage balancing issue and maximum dc bus voltage utilization. The switching pulses are generated with the help of modified sine pwm control

technique.

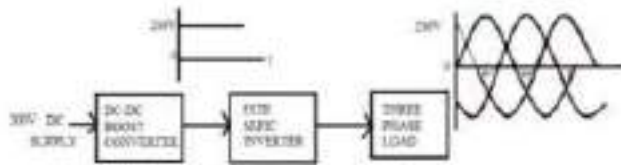


Figure 3 . Block diagram of proposed system

The proposed system consists of DC-DC boost converter, FSTP SEPIC inverter and a three phase load is shown in figure 2. A 200V is given as the input side and the boost converter boost up the value up to 250V. The phase voltage across the load becomes boost up and around 230V. In conventional FSTP SEPIC inverter, when giving an input of 200V, the output becomes 150V. So in order to improve the phase voltage, inserting a boost converter in between the dc input side and the four switch three phase sepic inverter.

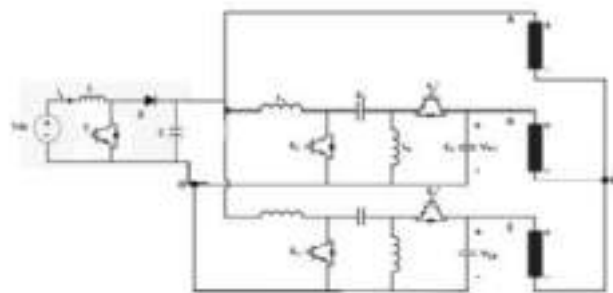


Figure 2 . Circuit diagram of FSTP SEPIC inverter with front end boost converter

The detailed configuration of FSTP SEPIC inverter with front end boost converter is shown in figure 2. The inverter consists of two SEPIC converters, and achieves DC- AC conversion. And at the front end of the input side, a boost converter is placed for achieving DC- DC conversion and also increasing the input voltage.

FEATERS OF PROPOSED INVERTER TOPOLOGY

- Get sinusoidal three phase output voltage without the help of filter components.
- THD value of the proposed topology is very much improves when comparing with the conventional topologies.
- The voltage gain also increase with the help of front end boost converter.
- Proposed topology requires only four switches in the inverting stage and one for boosting stage.

- Required number of switches much reduced without affecting the quality of output voltage.

CONTROL STRATEGY AND DESIGN OF FSTP SEPIC INVERTER

• MODIFIED SINE PWM CONTROL

The term SPWM stands for “Sinusoidal pulse width modulation” is a technique of pulse width modulation used in inverters. An inverter generates an output of AC voltage from an input of DC with the help of switching circuits to reproduce a sine wave by generating one or more square pulses of voltage per half cycle. If the size of the pulses is adjusted, the output is said to be pulse width modulated. With this modulation, some pulses are produced per half cycle. The pulses close to the ends of the half cycle are constantly narrower than the pulses close to the centre of the half cycle such that the pulse widths are comparative to the equivalent amplitude of a sine wave at that part of the cycle. To change the efficient output voltage, the widths of all pulses are amplified or reduced while keeping the sinusoidal proportionality. With PWM (pulse width modulation), only the on-time of the pulses are changed during the amplitudes.

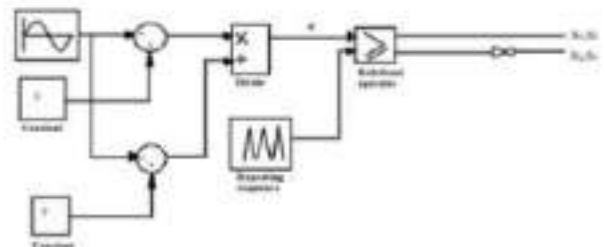


Figure 4. Block diagram

If we take the duty ratio as ,

$$d = D \sin(\omega t)$$

Where D = 1, we get a non linear output like ,

$$V_o = (D \sin \omega t) / (1 - D \sin \omega t) * V_{in}$$

To make the input output relation is sinusoidal voltage with sine nature ,the duty ratio is change to,

$$d = (1 + \sin \omega t) / (2 + \sin \omega t)$$

we get the sinusoidal output as,

$$d / (1 - d) = (1 + \sin \omega t)$$

$$V_{out} = (1 + \sin \omega t) * V_{in}$$

In this subsection, the previously deduced equations are used to select the appropriate values of the components used in the proposed SEPIC inverter. The design specifications of the proposed FSTP SEPIC inverter are as follows:

- 1) Input voltage: 200 VDC.
- 2) Peak output line voltage: 230VAC.
- 3) Output frequency: 50 Hz.
- 4) Switching frequency: 20 kHz.

5) Rated current: $I_m = 4A$ (Load: 25Ω series with $1 mH$)

Table 2..Simulation Parameters For Boost Converter

SIMULATION ANALYSIS AND RESULT

Sl.No.	Parameters	Value
1	Input voltage, V_{in}	200V
2	Switching frequency, f_s	20kHz
3	Inductor, L_1	6.7mH
4	Capacitor, C_1	10.6 μF
12	Resistive load	200 Ω

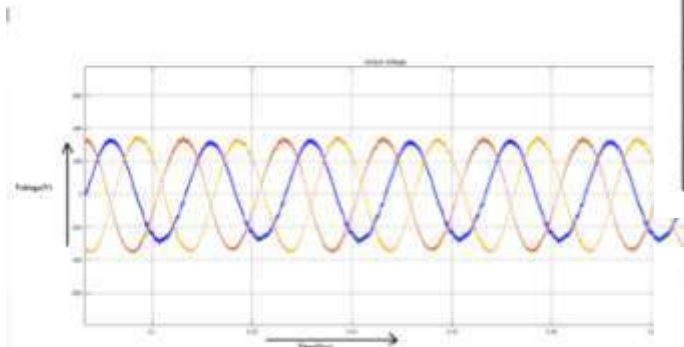


Figure 5. Waveform of phase voltages

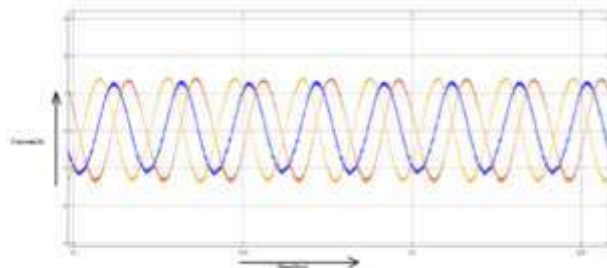


Figure 6. Waveform of load currents

Figure 5 and 6 shows the wave form of load current across the load. The inverters are connected differentially across the load, here load is resistive in nature and having the value of 300Ω . The peak value of output voltage is around 230V. So the load current become $230/300 = 0.766A$.

Table 1..Simulation Parameters Of Three Phase SEPIC Inverter

Sl.No.	Parameters	Value
1	Input voltage, V_{in}	200V
2	Output voltage, V_{out}	230V
3	Switching frequency, f_s	20kHz
4	Inductor, L_{12}	6.7mH
5	Inductor, L_{23}	2.26mH
6	Inductor, L_{31}	7mH
7	Inductor, L_{92}	2.36mH
8	Capacitor, C_{12}	10.6 μF
9	Capacitor, C_{23}	2.8 μF
10	Capacitor, C_{31}	10.3 μF
11	Capacitor, C_{21}	2.8 μF
12	Resistive load	200 Ω

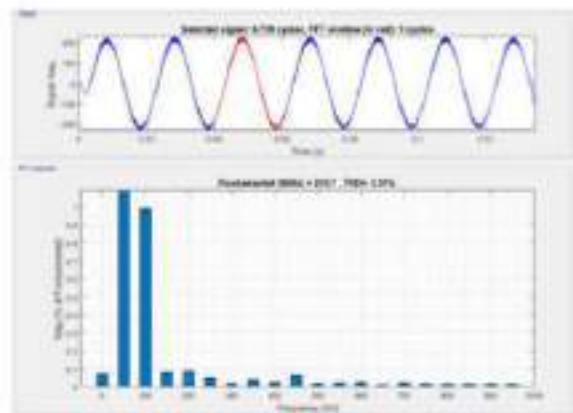


Figure 7. THD calculation of proposed inverter. From the measurement it is clear, the value of THD is about 3.31%.



Figure 8. Complete setup of the hardware

CONCLUSION

Four switch three phase sepic inverter with front end boost converter is proposed in this paper. The inverter can produce three-phase output voltage with pure sinusoidal nature with minimum number of switches. Unlike other three phase inverters, proposed inverter dose not need any output filter. Also it does not suffer from the problems of voltage fluctuation across the DC link split-capacitors, as the third



phase load current is directly drawn from the DC source without circulation in any passive component. The proposed converter topology has following features, THD value of the proposed topology is very much improved when comparing with the conventional topologies.

- The voltage gain is also increased with the help of front end boost converter.
- Proposed topology requires only four switches in the inverting stage and one for boosting stage.
- The number of switches required is reduced without affecting the quality of output voltage.

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A NEW FIFTEEN LEVEL INVERTER TOPOLOGY WITH LESSER HARMONICS AND LESSER NUMBER OF SWITCHES

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ABSTRACT

Multilevel Inverters play a vital role in all applications of the world,particularly in industry.The industry is currently in need of adjustable speed drive, which should have lesser amount of THD.So, the usage of multilevel inverters is inevitable.Further,nowadays in solar energy systems multilevel inverters have started finding their place.But, the important restriction in multilevel inverter is the number of switches present in it.As the number of switches increase,switching loss also increases and cost increases.Research works are in progress towards this approach.In this work a novel 15 level inverter with 12 switches has been presented.Out of this ,eight switches are used for switching various levels and for switches are used to determine the polarity.Simulation of the topology has been performed in MATLAB Simulink environment.Hardware results have been also presented.In the hardware, a provision to vary the speed, by varing frequency in disccrete manner by providing selector switches were also included. The results show that the THD is within 10% value.

I.INTRODUCTION

To achieve more level of voltages with lesser number of switches in Multilevel inverters with lesser along with lesser Total Harmonic Distortion has been an long time research work around the world since it has been found difficult to get pure sine wave in the output of the multilevel inverter.Nabae et al proposed first a two level inverter topology for resistive load.X,Yuan proposed a diode clamped multilevel inverter which removed the necessities of series clamping of inverters and synthesised required output voltages with lesser number of diodes[2].Marchesonni etal proposed a diode clamped

multilevel inverter with DC capacitors along with a way to control DC link voltages[3].Maheshkumar and Divya proposed a new Flying capacitor multilevel inverter of H bridge type with relatively lesser number of switches and were able to synthesise the voltage to the required levels[4].A shukla et al proposed multilevel inverter topology and tested it for reactive power control [5].In flying capacitor multilevel inverter voltage balancing was a big problem.To address this, G.P Adam etal, proposed a new flying capacitor multilevel inverter topology by replacing capacitors with half bridge

cells and made it flexible to extend it to any number of levels[6].The adjustable speed drives were replaced from conventional two level inverter to higher level inverters.During this transition, the harmonics in their stator was huge problem.To avoid that a new topology of induction motor itself was developed in which two ends of each winding of each of each phase of stator was left open and called as open end winding induction motor drive.K.Gopakumar et al developed a new three level inverter topology for such motor which had the advantages of eliminating triplen harmonics and balancing DC link voltages[7].P.S.Channdrasekhar et al., proposed a new topology which was hybridized nature of diode clamped and flying capacitor multi level inverters,in which they used only two capacitors to divide the voltage[8].Space vector modulation was new technique to derive switching states and hence to make appropriate method to switch the switches of inverter.Siuitra das etal,derived certain mathematical expressions for harmonic distortion factors[8].Roshankumar et al formulated three phase H bridge inverter by cascading three single phase H Bridge inverter and tested the capacitor balancing for sudden acceleration of the motor and shown very good capacitor balancing methodology[10].Capacitor voltage balancing was done by predictive control method by using a cost function and lesser value of the cost function yielded better switching angle[11].M.Sandhya et al proposed a novel fifteen level inverter which had lesser THD[12].But their work had several DC sources.So, in this work they are replaced with one DC source and same output voltage is obtained by dividing the voltage by using 8 number of same valued capacitors.

II.PROPOSED TOPOLGY

Large number of sources in an inverter increases its cost.Further,if the value of voltage sources change due to their chemical composition,it will create problems in the output of the inverter.So, in this work large number of sources in [12] has been replaced by a single source.This voltage is divided equally by capacitors and available to each switch.Such a topology is shown in fig.1.

It has eight switches,numbered from S1 to S8.Each switch is subjected at the ost to a voltage of $V/8$. Switches SP1 to SP4 are polarity determining switches.SP1 and SP3 are useful for producing positive polarity and for producing negative polarity,SP2 and SP4 are to be switched.In this anner the same 15 level voltage can be synthesised at the output of inverter with a single source. As number of switches is less it experiences

lesser switching loss.In addition the total harmonic distortion has been reduced considerably.

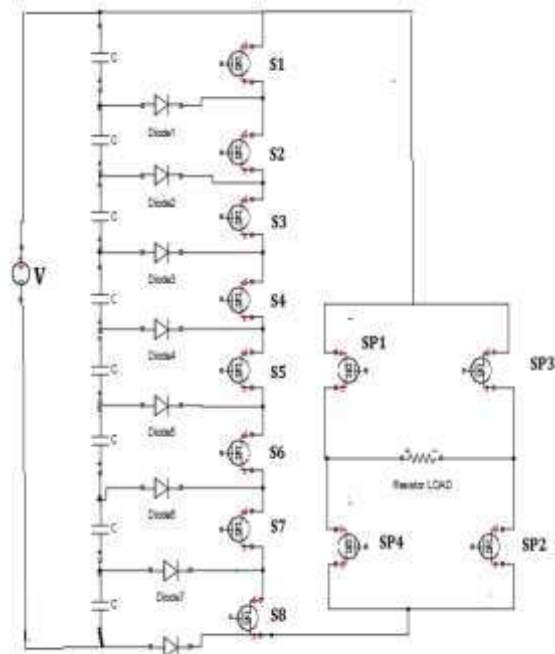


Fig.1.Proposed Inverter Topology

In the above said inverter DC source is realised by Recifier followed by filter This capacitor filter has lesser ripples.So the DC Voltage is easily obtained from AC source in a easier manner.The block diagram of the system is shown in fig.2,

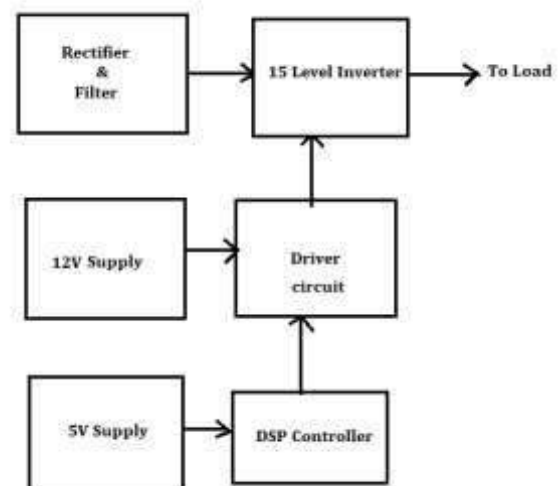


Fig2.,Block diagram of the proposed system

The levels of inverter is realised by switching the level switches S1 to S8.To realise voltage of $V/8$ the switch S1 alone is turned on. To realise $V/4$ S1,S2 are to be turned on. Similarly



for realising $3V/8$, switches S1, S2 and S3 are to be turned on. All switches are turned on to realise the full voltage of V.

Next important aspect is polarity of the voltage. To realise voltage of $+V/8$, along with S1, switches SP1 and SP2 are to be turned on. For the same case of $-V/8$, apart from S1, switches SP3 and SP4 are turned on. Similarly, for synthesising $V/4$, apart from S1 and S2, SP1 and SP2 are turned on. Similarly for synthesising $-V/4$, apart from S1 and S2, switches SP3 and SP4 are turned on. Now it is evident that for positive polarity, switches SP1 and SP2 are turned on. For negative polarity switches SP3 and SP4 are turned on. This topology is essentially a combination of inverter and H bridge. The various voltage levels and the corresponding switches to be turned are given in the following table:

TABLE-I
Synthesisation of Voltages in The Proposed Topology

Level	Switches of Level	Switches of Polarity
+Vdc	S1,S2,S3,S4,S5,S6,S7,S8	SP1,SP3
+7Vdc/8	S1,S2,S3,S4,S5,S6,S7	
+3Vdc/4	S1,S2,S3,S4,S5,S6	
+5Vdc/8	S1,S2,S3,S4,S5	
+Vdc/2	S1,S2,S3,S4	
+3Vdc/8	S1,S2,S3	
+Vdc/4	S1,S2	
+Vdc/8	S1	
0	None	None
-Vdc/8	S1	SP2,SP4
-Vdc/4	S1,S2	
-3Vdc/8	S1,S2,S3	
-Vdc/2	S1,S2,S3,S4	
-5Vdc/8	S1,S2,S3,S4,S5	
-3Vdc/4	S1,S2,S3,S4,S5,S6	
-7Vdc/8	S1,S2,S3,S4,S5,S6,S7	
-Vdc	S1,S2,S3,S4,S5,S6,S7,S8	

It is clear that the understanding and implementation of the switching sequence of the topology is easy. So, coding in dSPIC controller is simple and capacitor voltage can also be easily be balanced. Thus, it has been proven that with 12 switches alone, 15 level output voltage can be easily realised.

III.SIMULATION RESULTS

The proposed Topology was simulated using MATLAB R2014 Simulink environment. IGBT was used as switch. A small voltage of 20V was used for simulating the circuit. The simulation output along with THD analysis was performed. The simulation results are depicted below:

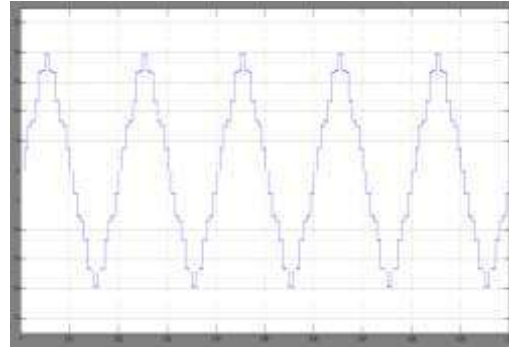


Fig.3.Fifteen Level Inverter Output voltage

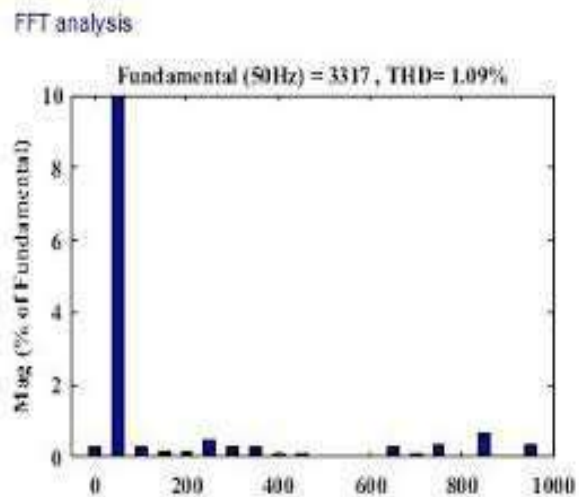


Fig.4.FFT Analysis of the Proposed system

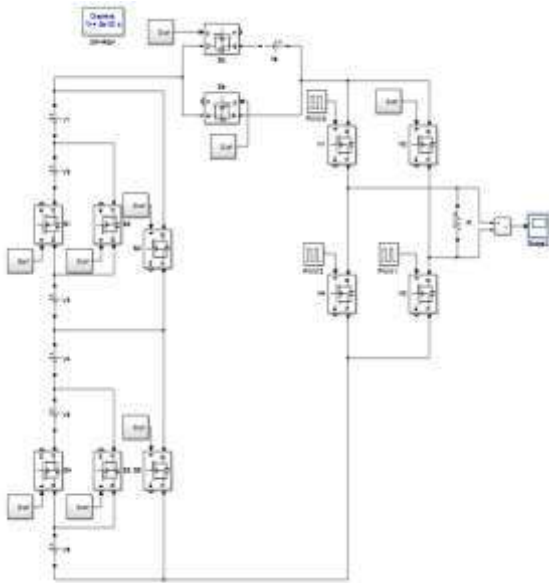


Fig.5.Simulation Circuit in MATLAB

From the above simulation it is evident that the THD is around 10%. So, lesser is the THD the greater is the applicability of topology to Induction Motor. So, this topology is better for applying on Induction motor.

IV.IMPLEMENTATION

The topology was implemented with IGBT IRGP406 with the switching pulse generated by dsPIC30F4011 and was tested for its output. The output voltage was upto the expected level. The topology was tested with a small 0.5HP single phase induction motor and the motor worked smoothly.

Further a selector switch was placed in the prototype to vary the frequency and hence the speed of the motor. Three codings were given in DSP controller to select a particular code for particular frequency. The hardware and the results obtained are given below:

The results of hardware setup shows that the voltage synthesized meets the required level. Also the motor running was smooth and without noise.

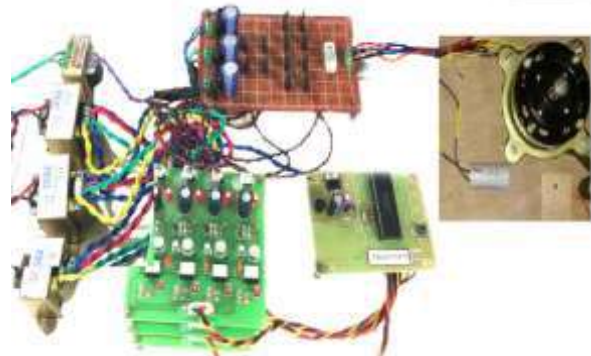


Fig.6.Expperrimental Setup

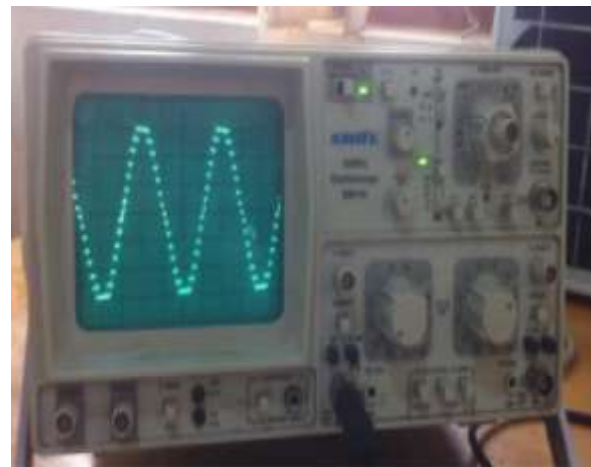


Fig.7.Output Voltage

**TABLE-II
FREQUENCY VS SPEED**

Selector switch	Frequency(Hz)	Speed(rpm)
1.	25	550
2.	35	980
3.	50	1440

V.CONCLUSION

Thus a novel 15 level inverter was proposed in this work. It has 8 switches for realising levels and 4 switch H Bridge for determining polarity. The topology was simulated in MATABL and the results were found satisfactory. The simulation results show that the THD level is around 10%. The hardware also was tested with IGBT as switching device and coding was done in dsPIC30F4011. The topology was tested with resistive load as well as induction motor. The output voltages with resistive loads were satisfactory. The speed of induction motor was varied by varying frequency levels by using selector switch. The variation in speed was satisfactory. Now the work is in progress towards the balancing the capacitor voltage.



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LINGUISTIC WORLD IMAGE IN MEDIASPACE

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ABSTRACT

Information, that is, the different cultural traditions of each country, lifestyle and national mentality play a role. It is no coincidence that more and more attention has recently been paid to the problem of national mentality, and a lot of scientific research is being conducted in this direction. The text displayed in modern media culture helps to better understand the dynamic processes taking place in modern journalism as a special element of progress. The purpose of communication reflects not only technological goals, but also communication and cultural needs. It is in the media that they present themselves in the most striking way.

KEYWORDS: *linguistic world view, mentality, language, media, communication, linguistics, information, text*

DISCUSSION

It is well known that language is an important means of communication and expression of ideas and regularly and actively serves as a tool for understanding and understanding the world. As a result, it becomes possible to see the world through information and language.

Methods and forms of materialization are important in how information is expressed through language.

Wilhelm von Humboldt calls the "linguistic picture of the world" a dynamic, continuous process of assimilation of the world through a specific language. According to the German scientist, the "linguistic" conditions in a person's life should lead to the solution of tasks related to the cultural and historical obligations imposed on a person.

According to Humboldt, the ultimate goal of interpersonal communication is the free development of internal forces within people. Such people can expand their living space without restrictions.

The concept of the national landscape is based on the reflection of each nation in the mirror and the attitude of the world to the mirror. Each nation has its own myths, heroes, national and cultural values and, in short, its own mentality, and this unique existence creates a national landscape for the peace of every nation. The picture of the universe is the basic concept of human thinking. When a person is

considered as a subject, his interactions and relations with the world are the object of the object. These two come together and form the integrity of the landscape. Just as a person interacts with the world, the image of the world affects the spiritual activity of a person. Perception, imagination and thinking: these processes are the main process of human activity. The social nature of the language community lies in the fact that, on the one hand, it creates the conditions for a coordinated language dialogue, which involves each participant in a common and unified process of language learning, and on the other hand, it is mandatory for each member of the community. requires the communication process to be "subject to the rules of the game".

"This is not because people pass on to each other their subject symbols and even contribute to a clear and complete reproduction of such a concept, but because they interact with each other from one of the earliest forms of the ring and the inner concept in the emotional chain. for they appear in their minds according to their meaning, but not in the same meaning. "

These words of Wilhelm von Humboldt reflect the main considerations that reveal the essence of modern linguistic communication. It is important that coordination is a prerequisite for the communication



process, which is closely related to the individual freedom of each participant.

Linguistic communication, that is, the exchange of information, always requires the creation of specific language forms based on specific models (texts). They, in turn, are reflected in the minds of the participating partners. The dynamics of communication occurs between two poles: 1) a norm that allows "a similar understanding" of the created language units; (2) The need for freedom of choice in such a creative process. "A person who is aware of his limitations is forced to admit that the truth is always beyond his control ... one of the most powerful means of regularity with others." V. These ideas, which Humboldt spoke about half a century ago, are still relevant and relevant. Communication is a really necessary factor to know that communication cannot be separated from cognitive initiation.

Media is a virtual laboratory for the synthesis and dissemination of media values, immanently focused on the axiological representation. In recent years, the media has become a structure that contributes to a continuous increase in verbal and non-verbal information, which has a direct impact on human thinking. This, in turn, will lead to a change in the way we understand the world through the formation of new complex heterogeneous cognitive structures. These cognitive structures are necessary for the rapid expansion of the information space, which leads to the mediation of the human mind. Mediation refers to the effect of the polysemic, multimodal product produced by the media on their thinking. This effect is expressed in the development of special multimedia structures that a person is aware and imagines. The methods of disseminating and assimilating values include various genres of journalism, professional styles, images, data processing and interpretation, text messages and technologies for influencing the audience.

The collective basic knowledge that complements and organizes the media is based on mental representations, and the psychological principles of information processing that are characteristic of the local producer and recipient of mass communication begin with the semantics of folk spirituality.

In the media, the language realizes its potential of functional integrity as much as possible. This has several features. Firstly, this integrity is especially evident in the media media, which are usually regarded as multicode texts: the language is one of the representatives of various semiotic systems. Secondly, the media are multimodal: verbal and non-verbal influences on the recipient are manifested in various forms, as close as possible to the real environment in which the language works. Thirdly, communication between language and cognitive processes in the field of communication, polymodal

speech and thinking is maximally complete and interdependent.

As a result of the globalization of the information space, openness and strengthening of mass communication, information quickly penetrates the human mind. In the information age, the number of media is constantly increasing. Mass communication occupies an important place in journalism. It is the media that can generalize such concepts as "publisher", "journalist", "text", "information".

Lexical innovations are mainly characteristic of news and information-analytical media, and their features in linguistic representations reflect ideological differences in the formation of content. In particular, even superficial comparisons of news and analytical texts from various media sources show that each text has its own tone and its tone is based on various factors, including ideological foundations. These differences make it possible to single out a category of ideological modality built on the opposition of the neutral and political-ideological components of the text. The breadth of opportunities for mass communication requires a deep study of their activities and development, their impact on the audience. Media science is a new interdisciplinary course based on traditional methods. The media provide a wide range of information - periodicals, radio, television, etc. This is a common name.

The following media functions play an important role in this task:

- targeting a mass audience;
- designed for everyone;
- efficiency.

Of course, literary language is important for conveying the information you need. If we consider the language system as an opportunity that corresponds to certain language models, then these carriers use it. Jekhan Panov says that in our time the norm is not study, but the choice of language tools for expression. One of the most important features of the norm is its conscious control and polishing. Norma helps to choose the most appropriate language words for the context.

Language, first of all, serves as the basis for a person to explore, know and collect information about the environment, and, on the other hand, a certain ethnocultural society also reflects the characteristics of the world. Through language, all concepts formed in thought are verbalized, that is, they communicate with the human language or write down their concepts on paper.

Through their language, the media create a worldview. It is important to identify features that differ, for example, from scientific, artistic or religious landscapes. After all, the socialist landscape of the world, created by the specific linguistic and



meaningless nature of the media, has a stronger influence than any other model of the world. It is well known that language is not only a reflection of thought, but also a means of influencing it.

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THE CONNECTION OF LANGUAGE WITH NATIONAL MENTALITY

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ABSTRACT

The problem of considering language in the aspect of its correlation with mental representations and culture of the people today is the center of research of many scientists. In modern linguoculturology, the concept of “mentality” is used when they talk about the ethnic and social conditioning of our consciousness and try to justify the origins of the spiritual unity and integrity of the people. As practice shows, the connection between language and society is revealed not so much when we focus on purely linguistic, ethnographic or sociological data, but when we study the culture and language that have existed for a long period as a whole. It is scientifically substantiated that the various components of the semantic structure of a word in their analytical distribution according to attributes manifest themselves differently depending on the purpose of the study. Mentality and language are develops forms of mentality.

KEYWORDS: *mentality, language, culture, nation, information, pragmatics, national specificity*

Связь языка с национальным менталитетом

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Аннотация

Проблема рассмотрения языка в аспекте соотносительности его с ментальными представлениями и культурой народа сегодня является центром исследования многих ученых. В современной лингвокультурологии понятие «ментальность» используется, когда говорят об этнической и социальной обусловленности нашего сознания и пытаются обосновать истоки духовного единства и целостности народа. Как показывает практика, связь языка и общества обнаруживается не столько тогда, когда мы концентрируем внимание на чисто лингвистических, этнографических или социологических данных, сколько тогда, когда мы изучаем культуру и язык, существующие в течение длительного периода как нечто целое. Научно обосновано, что различные компоненты семантической структуры слова в аналитическом их распределении по признакам проявляются в зависимости от цели исследования по-разному. Ментальность и язык взаимозависимы и взаимодополняемы: ментальность влияет на язык, и язык развивает формы ментальности.

Ключевые слова: менталитет, язык, культура, нация, ментальность, информация, прагматика, национальная специфика



По вопросу исследования ментальности носителей языка в современном гуманитарном знании складывается устойчивая междисциплинарная зависимость.

Язык - это сердце нации. Есть язык - нация живет. Поэтому не всем, кто любит свою нацию, будет безразлична судьба его языка. Язык - это один океан. Он пополняется потоками, вытекающими из листов и других языков. Поэтому содержание словаря языка называется открытой системой. С появлением новых концепций в развитии общества их названия также появляются на языке.

При помощи языка человек способен адекватно оценивать окружающую его реальность. Язык выступает инструментом бессознательного распознавания окружающего мира, посредством стереотипов, которые человеческое сознание впитывает с момента рождения. В области сознания то, что привычно называть ментальностью, изначально ощущается как безусловная реальность жизненного опыта человека.

В современной лингвокультурологии понятие «ментальность» используется, когда говорят об этнической и социальной обусловленности нашего сознания и пытаются обосновать истоки духовного единства и целостности народа.

Ментальность есть национальный способ выражения и восприятия мира, общества и человека в формах и категориях родного языка, способность истолковать явления как их сущности и соответственно этому действовать в определенной обстановке»¹.

Ментальные представления народа шлифуются, превращаясь в коллективный опыт, в течение веков и тысячелетий, и откладываться они могут лишь в том языке, что так же непрерывно и долговечно, как и этническое существование, этническая история. В силу этого языку принадлежит исключительная роль на путях познания того, что имеется в виду, когда говорят об этническом менталитете, о культурно-исторической, культурно-психологической самобытности народа. В языке оформляется

¹ Колесов В.В. Русская ментальность в языке и тексте. СПб.: Петербургское Востоковедение, 2006. -С.11-12. 624с.

концептуальный образ мира, а «человек понимается нами как носитель определенной национальной ментальности»² [3: 113].

Следует отметить, что само определение ментальности затруднительно по причине слабой разработанности этой проблемы. Представим обзор основных взглядов на понимание понятия «ментальность» и особенностей его содержания.

Так, М. Барг толкует ментальность как совокупность символов, являющих ключевые представления, которые образуют ядро «господствующей идеологии» и порождают повседневные представления, «мыслительные стереотипы»³ [4: 15].

По мнению А.Я. Гуревича, «ментальность - уровень индивидуального и общественного сознания..., магма жизненных установок и моделей поведения, эмоции и настроений, которая опирается на глубинные зоны..., на какие-то вполне осознанные и более или менее четко сформулированные идеи и принципы»⁴ [5: 454]. Ментальность, по А. Я. Гуревичу, это – способ видения мира, она отнюдь не идентична идеологии, имеющей дело с заданным строем мысли, и во многом, может быть, главным остается непрорефлектированной и логически не выявленной. Ментальность – не философские, научные или эстетические системы, а тот уровень общественного сознания, на котором мысль не отчленена от эмоций, от латентных привычек и приемов сознания. Итак, делает вывод ученый, ментальность – тот незримый минимум духовного единения людей, без которого невозможна организация любого общества.

Следует отметить, что ментальность и культура принадлежат к духовной сфере жизни и с одной стороны связаны национальным языком, а с другой «отображая культуру нации, язык участвует в

² Маслова В.А. Лингвокультурология: учеб. пособие для студентов высш. учеб. заведений. М.: Академия, 2001. 208 с.

³ Барг М. Эпохи и идеи. М.: Мысль, 1987. 348 с.

⁴ Гуревич Л.Я. Ментальность // Опыт словаря нового мышления. М.: Наука, 1989. С. 3-7.



формировании менталитета народа – носителя языка»⁵.

Н.Е. Малова считает, что «ментальность» может быть определена как «языковая», которая способна имплицитно аккумулировать информацию в сознании, подвергать осмыслению для дальнейшей экспликации в языке и картины мира, и образа мышления нации⁶.

Языковая ментальность, являясь сложным духовным феноменом, имеет не менее сложную структуру. По нашему мнению ментальность – это система миропонимания и представляет собой сложный феномен который включает знания о мире и человеческих отношениях такие представления как образ, ценности, стереотипы поведения и т.д.

Понятие «менталитет» является опорным элементом развития национальной культуры, основой определения национальных культурных ценностей. Ментальность народа также эволюционирует под воздействием взаимопроникновения культур, борьбы культур, диалога культур.

Ю.Н. Караулов выделяет:

1. Вербально семантический или языковой уровень – это лексический и грамматический аспект семантики, который непосредственно отвечает за национально-специфичное видение мира в языке этноса.

2. Лингвокогнитивный уровень, или уровень языковой концептуализации мира, который отражается в так называемой языковой картине мира данного языка. Это собственно «содержательный» уровень языкового менталитета, воплощающий представления этноса о времени и пространстве, о человеке и природе, о мире производственной и социальной деятельности и пр. Эти представления выявляются в особом роде единицах «языка мысли» – ментальных репрезентациях, главной из которых является концепт.

3. Аксиологический (ценностный) уровень, который воплощается в иерархически организованной совокупности ключевых ценностно значимых концептов (культурных концептов, аксиологем, культурем, идеологем), у которых ценностно-

окрашенная семантика входит в номинативное содержание, а также в языковых и в экстралингвистических (культурных) коннотациях, закрепленных в узусе за определенными словами и выражениями, т. е. в системе языковой и экстралингвистической оценочности.

4. Мотивационно-прагматический, поведенческий уровень, уровень поведенческий, который отражается в совокупности так называемых жизненных установок, норм поведения, а также в многообразной сфере типичных для данного этноса интенций, мотивов, целей, потребностей»⁷

Среди уровней языковой системы важен словарный запас (с культурологической точки зрения). Он выражает, описывает и наполняет человека и его внутренний мир и может мотивировать их, идентифицируя действия лингвиста. Словарь национального языка сохраняет особенности этносоциокультурных норм и передается из поколения в поколение, обеспечивая тем самым стабильность и согласованность этнического менталитета. Изучая особенности использования слов, мы можем узнать о духовном благополучии нации: в той степени, в которой мы можем предвидеть этапы развития нации, правильно оценивая факты, отслеживая их последовательность, записывая и определяя направление динамики.

Язык как виртуальная структура предлагает потенциал речевого поведения языкового сообщества на основе коллективного сознания конкретного сообщества. В последние годы стало ясно, что язык и культура становятся все более взаимосвязанными, и интерес к взаимосвязи разных культур растет. Но культура – это очень широкое понятие. Он включает в себя множество факторов, таких как язык и мышление, восприятие, оценка и отношение. Если мы примем правило, что «менталитет – это этническая и культурная идентичность сообщества», тогда понятие менталитета должно стать предметом глубокого научного изучения в практических целях для

⁵ Там же: -С.24.

⁶ Караулов Ю.Н. Русский язык и языковая личность. М.: Наука, 1987. 264с.

⁷ Караулов Ю.Н. Русский язык и языковая личность. М.: Наука, 1987. 264с. [2, с.37–58].



определения национальной идентичности менталитета конкретного народа.

Исследователи все больше внимания уделяют взаимосвязи между менталитетом и культурой, национальной парадигмой менталитета и особым образом жизни этнических общин. Недавние эксперименты доказали, что «национальный язык является основным фактором мышления, иными словами, родной язык дает его владельцам возможность использовать особый способ выражения своих мыслей через определенные языковые привычки».

Видимо, можно изучать менталитет, изучая язык. Менталитет - это культурно обоснованный взгляд на национальное мышление. В нашей повседневной жизни мы сталкиваемся с такими привычками, формами языка, которые бросают нам вызов тому, как люди воспринимают мир по-разному, уникальным характеристикам других народов. Часто, когда мы сравниваем наши умственные привычки с другими, мы замечаем, что другие нации разные.

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THE WORK «ASOSU-L-BALOG‘A» BY MAKHMUD ZAMAXSHAR‘I IS AS SOURCE OF PHRASEOLOGY

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ABSTRACT

This article provides an overview of the phraseology used by Makhmud Zamaxshar‘i in his dictionary work "Asosu-l-balog‘a" as illustrative material to define headwords in dictionary articles. The article is separated and analyzed phraseologies which are used in the "Asosu-l-balog‘a" according to the types.

KEYWORDS: *"Asosu-l-balog‘a", defining dictionary, glossary article, headword, illustrative material, phraseology, phraseological fusion, phraseological unity, phraseological combination (collocation).*

INTRODUCTION

The dictionary work «Asosu-l-balog‘a», that is, «Balog‘at asoslari» (the basis of speaking in delicate way) plays an essential role in the scientific heritage of Makhmud Zamaxshar‘i. The dictionary is important not only in this well-known scientist’s works related to dictionary compiling, but also the whole Arabic dictionary science. According to the academic A. Rustamov, Makhmud Zamaxshar‘i contributed considerably to develop Arabic dictionary compiling by this work [1]. Another scholar Khusayn Nassor says that Makhmud Zamaxshar‘i became the founder of forth of Arabic dictionary compiling school with «Asosu-l-balog‘a».

METHODOLOGY

The study was conducted using objectivity, analysis, synthesis, comparative analysis, generalization, historical analysis, chronological methods.

RESULTS

The main reason of such high evaluation of «Asosu-l-balog‘a» by linguists, historians and great scholars of oriental sciences is creations of some new findings in lexicography by Makhmud Zamaxshar‘i.

The successful point of Mahmud Zamakhshar‘i in the dictionary is that the sequence of dictionary articles were placed in a strict alphabetical order, taking into account all their root consonants. That’s why, he is remembered as a typical lexicographers who was the first to introduce the alphabet system in Arabic lexicography. Firstly, he had used originally this method in his «الفاثق فى غريب الحديث» dictionary work which was originally intended to interpret difficult words that are found in khadis (*a collection of traditions containing sayings of the prophet Muhammad which, with accounts of his daily practice (the Sunna), constitute the major source of guidance for Muslims apart from the Koran*).

The author looks at the first and second consonants of the headword in order to put dictionary articles in the alphabetical order. The third, fourth and fifth root consonants are not followed by the alphabetical order. This leads to make it difficult to use the dictionary. Makhmud Zamaxshar‘i placed the headwords in the alphabetical order taking into consideration the first, second, third, fourth and fifth root consonants.

After him this method has become a tradition, developed by lexicographers and is still in use.

Another innovation used by Makhmud Zamaxshar‘i in «Asosu-l-balog‘a» is that he gave the



vocabulary units without extracting from the phrases and expressions that were in use at that time. This method gave a chance to define the meaning of the entries comprehensively and in detail. Expressions and phrases which were used to define words can be used to study about linguistic features and rules of that period.

Before stating to compile any kind of dictionary, the authors have to answer an important question about how to choose entries and what words should be included in the dictionary. The choice of entries for a dictionary depends on the purpose of the dictionary and expected users[2].

If above mentioned questions are asked for «Asosu-l-balog'a», exact answers lie in the preface part of it.

During the development of above stated two ways, Makhmud Zamaxshar'i wanted to make easier for the users of dictionary. As mentioned in preface, he walked through the Tixan bazaars, mosques and recorded unique and delicate expressions and phrases from orators, preachers and religious scholars. He intended to compile the dictionary of delicate literary Arabic words"[3]. Makhmud Zamaxshar'i tried to reflect the delicateness and uniqueness of the Arabic literary language in «Asosu-l-balog'a». The author stated that preface of the dictionary states that he intended to bring up remarkable orators, preachers and writers. That is why, he named his work «Asosu-l-balog'a», that is «Balog'at asoslari» (the basis of speaking in delicate way).

It is clear that expressions and phrases should be used appropriately and correctly to convey the sense attractively.

This requires to be master in the science of smart thinking and wonderful expressing. Without any doubt, «Asosu-l-balog'a» by Makhmud Zamaxshar'i can be useful as the main source. Makhmud Zamakhshar'i based on his background knowledge and experience in such areas as linguistics, lexicography, literature and history to compile «Asosu-l-balog'a». According to V.M Belkin, "usually lexicographers who have noted and guaranteed the purity of the Arabic vocabulary in their dictionaries do not deal with grammar issues. Only Mahmud Zamakhshari was able to create original works in both grammar and lexicography[4]".

The factor that indicate the completeness and lexical richness of the dictionary is its sources. It provides examples of fiction and folklore in order to show the peculiarities of the use of a particular word, to reveal the stylistic, and also the features of the word being defined. He used widely illustrative examples in the «Asosu-l-balog'a» to provide a more detailed explanation of entries. The basic sources on it are not only the Koran, hadis, but also

parts of poetry by prominent poets who lived and worked during and before Makhmud Zamaxshar'i, phraseologies and proverbs.

As it has been already mentioned, Makhmud Zamaxshar'i skillfully used phraseologies in his work as an important source of definition. For this reason, V.M Belkin stated that «Asosu-l-balog'a» by Mahmud Zamakhshar'i is a little different from the general way of the development of traditional Arabic lexicography. It looks like a type of phraseological dictionary"[5].

In this case, it is time high to remind one thing. Makhmud Zamaxshar'i gave definition the vocabulary entries by using phraseology, but in the same place in some cases the phraseology are also defined to reveal meaning. Providing dictionary articles with phraseological phrases in this method gives the reader a better understanding of the meaning of the word. You can see openly this in the below given examples.

Phraseology, that is, phraseological unit consists of meaningful interconnected two or more words and has a general meaning, especially, connotative, which is equivalent to a sentence or a word, as well as are inseparable, stable lexicographical unit. and it is words is a which consists two or more words, or a generic name, which is equivalent to a sentence, inseparable, unstable (stable) links"[6].

For example: kapalagi uchmoq, (to be afraid), ko'ngli joyiga tushmoq, (to calm down) qo'li ochiq (generous) qulog'i og'ir (deaf) and so on.

According to the syntactic structure of phraseology, they are divided into two groups:

- phrases equivalent to combination: katta og'iz (greedy), ammanning buzog'i (clumsy), tuyog'ini shiqillatmoq (to be deported);

- phrases equivalent to sentence: (yuzi yorug' bo'ldi (to make somebody satisfied), boshi osmongga yetdi (to be pleased) sirkasi suv ko'tarmaydi (don't accept criticism).

However, in the following in analyzing the phrases in the «Asosu-l-balog'a» we intend to pay attention to types of phraseology rather than their syntactic structure. There are three types of phraseology: phraseological combination (collocation), phraseological fusion, phraseological unity.

Phraseological fusion is a semantically indivisible phraseological unit which meaning is never influenced by the meanings of its components[7]. Some examples in uzbek language: to'nini teskari kiydi (do not want to accept, to refuse), oyog'ini qo'liga olmoq (to be in a hurry), boshini olib chiqib ketmoq (to leave forever). We can find lots of examples of phraseological combination in «Asosu-l-balog'a». For instance: **رەجس**, in the



dictionary article, *هبرض راجسلا* one of the meaning of headword is defined by phraseology. In this example *راجسد*, that is, the word *hot* is included and it is defined following phraseology *هبرض راجسلا* (hit the burn). This phraseology used to mean *scorching night* in Arabic.

قلكا س أر in the dictionary article *قلكا س أر* phraseology is given. The phraseology is translated *боши ейилган* into uzbek language. In this case, Makhmud Zamaxshar'i after *يا* (*that is*) word gave the meaning of phraseology. According to this definition, *боши ейилган* means *little* or *few*. As phraseological combination (collocation) character, the meaning of this phrases doesn't depend on the meaning of contained meaning.

مرجسد in the dictionary article, in order to define the connotative meaning of the word this *مرجسد* phraseology is used. In this example *مرجسد*, that is, the word *to pour* is used in connotative meaning. In Arabic language the phrasal verb *ishni to'kib yubormoq* (to pour the work) means *ishni cho'zib yubormoq* (to make longer the work).

We can give as an example for the first type of phraseology the following phrase: *قردسد* in dictionary articles, *قردسد* phrase. It translates into uzbek *biz o'yning bir kechasini o'g'irladik* and it means the person who has slept outside.

سرق سرق phrase is taken from dictionary articles. This *o'g'ri o'g'irlandi* (robber is kidnapped) phrase is equivalent to *o'g'rini qarog'chi urdi* (the robber is kidnapped by thief).

As can be seen from the above examples, in all of the phraseological fusion phraseological combination (collocation), one can see that the actual meaning of phraseology is not related to the words given in it.

Phraseological unity is considered second type of phraseology. It is a semantically indivisible phraseological unit the whole meaning of which is motivated by the meanings of its components. In general, phraseological unities are the phrases where the meaning of the whole unity is not the sum of the meanings of its components but is based upon them and may be understood from the components[8]. In uzbek language these phrases can be example: *yog'tushsa yalagudek* (extremely clean), *yeng shimarmoq* (to get ready with enthusiasm), *xamirdan qil sug'urganday* (super easy), *to'ydan oldin nog'ora chalmoq* (bustling people before starting).

ن جسدها in dictionary article *ن جسدها* phrase is given. The phrase *o'z xavotirini qamab qo'ydi* (to lock the anxiety) means in arabic *o'z xavotirini yashirdi* (to hide the anxiety).

حرسنم ن مهايژ in dictionary article *حرسنم ن مهايژ* phrase is given. In this phraseology the active level participle is included. The phrase *U kiyimlaridan ozod bo'ldi* (to be free from clothes) means *yechindi* (to take off).

As an example for phraseological unity we can give in this *سقط* dictionary articles *على الخبير* phrase. The translation of this is *mutaxassisda adashding* (you had mistaken on specialist) and it is synonym to this phrase *odamiga yo'liqding* (you contract with non-specialist) in uzbek.

ذهب دمه أدراج الرياح phraseology is given in *درج* dictionary articles. The phraseology *Uning harakatlari shamolga uchdi* (To fade away all attempts) means all works is cancelled worthly. In uzbek language it is equivalent to *Hammasi bir tiyin bo'ldi* (all things become unworthy) or *barchasi bir pul bo'ldi*. (it is worth to nothing).

Phraseological combination (collocation). In this type of phraseology, the general meaning does not depend on its components. The connotative meaning of phraseology does not taken from phraseological combination parts[9]. Some examples in uzbek language: *gaping tuzi* ((the salt of sentence), (the sense of idea)), *qo'li gul* ((the hands are flower), (master in particular area)), *ishtahasi ochildi* ((open stomach), (to have a nice appetite)).

The following phraseology samples given in «Asosu-l-balog'a» are suitable for phraseological combination. *رفسد* in dictionary articles, so as to define headword this *رفسد* phraseology is used. In this case *رفسا* IV unit exact participle form is given and it is translated into uzbek like this *the face is firing*. This phrase is used to describe happy person. As a phraseological combination the word *رفسه - yuz* (face) is in denotative meaning and *رفسه - yonayotgan* (fire) is in connotative meaning.

رشدن لافى ف هسار phraseology is given in this *رشدن* dictionary articles. The phrase *falonchining boshi to'ldirilgan* (somebody's head is filled) is used for the people who have big head. In this case, combination the word *bosh* (head) is in denotative meaning and *to'ldirilgan* (to be filled) is in connotative meaning. Form this dictionary article another phrase is *رشدن لافن ف هنطب*. It is translated into uzbek as *qorni to'ldirilgan* (somebody's stomach is filled) is used for the people who have obesity or fatness.

Another example from *قردسد* dictionary articles, is *قردسد*. This phrase is used to describe the people who are extremely surprised with dancing eyebrows. The phraseology is translated like *the eyes are sparkling* into uzbek. In this case the word *ko'z* (eyes) is in denotative meaning and *yonda* (to spark)



is in connotative meaning. *رجل منفوخ* phrase is taken from *نفخ* dictionary article. This *tuflab shishirilgan odam* phraseology is used for the people who are so fat. It is equivalent to *qorin qo'ygan* (to gain weight).

In conclusion, it should be noted that the scholar Mahmud Zamakhshari used a wide range of affirmative examples to provide a detailed and complete interpretation of the words in his work "Asosu-l-baloga". The main sources are the Qur'an, hadiths, phraseologies, proverbs, and excerpts from the poems of prominent poets who lived before Mahmud Zamakhshari and during his time. Among these sources, phraseologisms have a significant value. They ensured the lexical richness and completeness of the dictionary. The peculiarities of the application of the word with the help of phraseologisms, the stylistic and semantic features of the word being interpreted were highlighted in the dictionary.

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THE EFFECT OF VARIOUS COMPOSTS ON SOIL PROPERTIES AND COTTON YIELD

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ABSTRACT

This article presents the positive effects of various composts on soil fertility and cotton productivity. It also describes the use of composts with different proportions of phosphogypsum to various organic materials to ensure the growth and high yield of cotton by improving soil bulk density, porosity, water resistance, structural state and agrochemical properties.

KEYWORDS: *soil, fertility, soil properties, bulk density, porosity, compost, cotton yield, yield.*

INTRODUCTION

Today, composts along with mineral fertilizers are widely used in the world to grow environmentally friendly products, increase soil fertility, improve its water-physical and agrochemical properties and improve the nutritional status of crops.

Experiments show that crop yields are inextricably linked to the amount of fertilizer applied to the soil. The effectiveness of fertilizers is usually determined by the amount of additional yield obtained from the crop.

In a number of countries around the world it has been found that the use of phosphogypsum and phosphogypsum composts as low-yielding and saline soils as ameliorants and fertilizers increases the yield of winter wheat and vegetable crops by 10-15%. In this regard, it is important to conduct research on the preparation of composts in optimal proportions from phosphogypsum and various organic substances, improve their soil fertility and assimilation of plant nutrients, as well as determine the effect on cotton yield and subsequent effects.

Phosphogypsum is a waste of the technology for the production of phosphoric fertilizers, which is currently accumulating over a large area around plants producing a large number (100-150 million tons) of phosphoric fertilizers and is harmful to the environment. Therefore, the issue of elimination (utilization) of phosphogypsum, which contains nutrients, or its use in agriculture, is becoming more urgent. For this reason, it is important to prepare composts by mixing phosphogypsum with composting organic materials.

Improving soil fertility and obtaining high and environmentally friendly products from crops is one of the key issues today. However, declining soil fertility and depletion of nutrients required for plants in the soil are having negative environmental and economic consequences. One of the most pressing problems today is the effective use of composts of various compositions to restore and improve soil fertility, including the use of phosphogypsum in various proportions, mixed with cattle manure, bird manure, rice and wood sawdust.



The more humus in the soil, the better its moisture capacity, structure, heat capacity, thermal conductivity, air and water regimes that create favorable conditions for plant life.

According to K.Mirzazhanov and Sh.Nurmatov [2], soil fertility depends on its physical, agrochemical, hydrothermal, reclamation, agrotechnical and many other properties. The abundance of humus in the soil indicates its fertility, as it contains nitrogen, phosphorus, potassium, carbon dioxide, macro-and micronutrients necessary for the plant in general. Humus determines the macro and microstructure of water-resistant soils, their content (structure) increases where humus is rich, and the increase in structure optimizes the volume mass in the soil, improves water, air, microbiological conditions, which in turn leads to optimization of crop nutrient regime. When used with the addition of mineral fertilizers to organic fertilizers, the amount of humus in the soil increases.

Regular use of organic fertilizers increases the amount of nutrients that plants can absorb in the soil and increases the amount of humus, which prevents it from decomposing quickly.

According to N.M.Ibragimov, D.Otakulova, B.I.Niyazaliev, the applied organo-mineral fertilizers facilitate the use of nutrients by the plant and, as a result, have a positive effect on increasing crop yields.

The composition of compost and its structure play an important role in increasing soil fertility. Properly prepared compost is necessary for plant nutrition, improving the structure of the soil and enriching it, organic and mineral substances [3;4;5].

Therefore, research is needed to study the effect of various composts mixed with phosphogypsum in various proportions on cattle manure, bird droppings, rice and wood chips on the agrophysical properties and soil fertility and cotton

yield, as well as for the wide dissemination of positive results.

METHODS OF CONDUCTING THE EXPERIMENT

Based on the above, composts of different proportions were prepared, and experiments on their effect on soil fertility and cotton yield were conducted in the conditions of typical gray soils of the research and educational experimental farms of Tashkent State Agrarian University.

The field experiment consisted of 9 options, 4 repetitions, which were conducted in the following order. Control option mineral fertilizers $N_{200}P_{140}K_{100}$ kg/ha, in the second option additional mineral fertilizers (NPK) + manure 10 t/ha, in option 3 NPK + manure 20 t/ha, in option 4 NPK + compost-1 (rice and wood sawdust-25 %, cattle manure-25%, poultry manure-45%, phosphogypsum-5%) 10 t/ha, option 5 NPK + compost-1, 20 t/ha, option 6 NPK + compost-2 (rice and wood sawdust-25%, cattle manure-25%, poultry manure -35%, phosphogypsum-15%) 10 t/ha, option 7 NPK + compost-2, 20 t/ha, 8-variant compost-3 (rice and wood sawdust-25%, cattle manure-25%, poultry manure -25%, phosphogypsum-25%) 10 t/ha and option 9 NPK + compost-3, 20 t/ha.

The research was conducted on the basis of "Methods of conducting field experiments" (2007).

RESEARCH RESULTS AND THEIR DISCUSSION

An analysis of the experimental results showed that over 3 years, the bulk soil mass decreased from 0.05 g/cm³ to 0.07 g/cm³ in a 0-30 cm layer compared to the control (uncomposted) in the version of 20 tons of compost-2 per hectare.

This shows the positive effect of applying 20 tons of compost-2 on improving soil density (Figure 1).

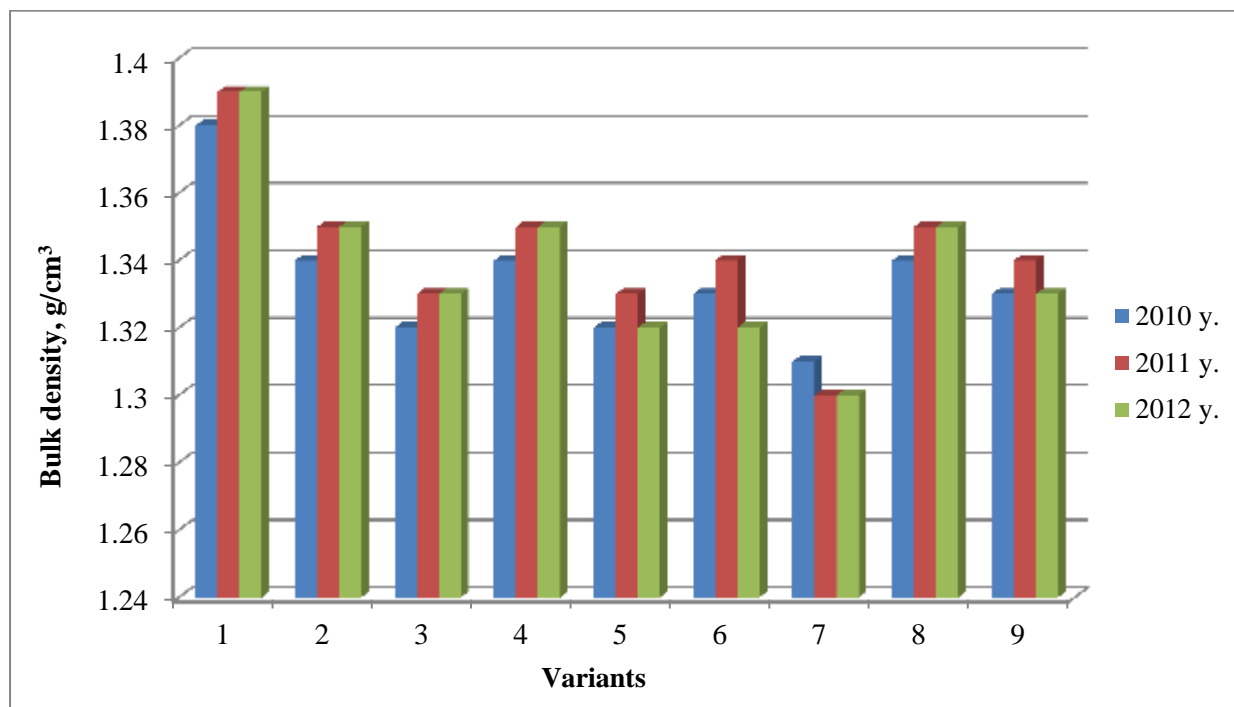


Figure 1. Change in bulk density in the soil layer 0-30 cm at the end of the growing season when using different composts, g/cm³

At the end of the exploitation period, in the 7th variant with 20 tons of compost-2 per hectare, the porosity in the soil layer of 0-30 cm was 2.6% higher than in the control (1) variant and 1.0% higher than in variant (3), where 20 t/ha of manure was introduced. And also the use of compost played an important role in restoring the soil structure, having a positive effect on the structural state of the soil and their water resistance. This indicates that the water-physical state of the soil improves when compost is used, instead of using only manure.

The optimal effect of the used composts was observed at the rate of 20 t/ha of compost-2, the humus content in the soil layers of 0-30 and 30-50 cm increased by 0.115-0.024%, nitrogen by 0.010-0.002% and phosphorus by 0.014-0.003%. In addition, the highest values of nitrate nitrogen, mobile phosphorus and exchange potassium in this embodiment are 24.5 in the soil layer 0-30 cm, respectively; 33.6 and 295 mg/kg or 3.3, respectively, compared with the control; 3.8 and 30 mg/kg were higher.

The better the soil conditions for plants, the faster their growth and early ripening. Cotton growth and development was accelerated in options of 20 tons per hectare of various composts, especially in the variant where compost-2 was used at 20 t/ha, the accumulation of cotton yield elements was higher than in other options.

The main elements that determine the cotton yield are the yield elements, that is, a cotton ball, and the more of them, the higher the yield. As a result of observations, as of September 1, 3-4 cotton ball were collected more in the version with 20 tons of compost-2 per hectare than in the control version.

Based on the foregoing, the effect of various composts on the cotton crop was determined, in which compost-2 prepared in a ratio of 1:1:1.4:0.6 to the components of the compost composition was in version 7, where 20 tons per hectare were used, which gives an additional yield of 5-6 c/ha compared to the control variant.

CONCLUSIONS

Thus, when applying 20 tons of compost-2 per hectare from various wastes in the soil, favorable conditions for cotton are created, and the growth and development of cotton is accelerated, which gives an additional yield of 5-6 c/ha compared to the control variant. It has also been proven that composts are one of the main sources of soil enrichment with organic fertilizers.



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AN EMPIRICAL ANALYSIS OF THE EFFECTS OF DEMONETIZATION ON KOLKATA

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ABSTRACT

Indian economy is undergoing one of the greatest transitions presently. Over the last few years starting from early 2013 there have been quite a few major reforms in the financial sector which further gave rise to even more radical changes in the functioning of the economy. Demonetization is one such event which has literally transformed the way the common man lives today. Demonetization of the 500 and 1000 rupee notes took place on the 8th of November, 2016 when the Indian Government ceased their use. The move was made to curb corruption, black money, terrorism and other issues. Apart from trying to solve the issues, it also gave rise to a new form of economy in the country, called cashless economy. More than just card based payments, there was a new mode of payment introduced to a large group of people, known as digital payment. Due to many people now using smart phones in the country, the revolution was not confined to digital payment gateways, but replaced the leather wallets with mobile wallets, for example Paytm, Mobikwik, etc. which were more convenient and apparently secure. This paper analyses the concept and rationale of demonetization, growth and development of mobile wallets, effect of demonetization on mobile wallets and Post demonetization effect on the sample selected in the Kolkata region. This is an empirical research which is based on both primary and secondary data. The secondary data has been collected from various journals, magazines and newspapers. The primary data has been collected through Google forms between time periods of April 2017 to December 2017. The respondents have been randomly selected from the Kolkata region within the age group of 18-65 years. Graphical tools like pie charts and histograms have been applied to interpret the data. The main result of this analysis was that 62% of the respondents attributed the growth of mobile wallets to the demonetization move and 42% responded that they prefer the digital mode of transactions using mobile wallets.

KEYWORDS: *demonetization, cashless economy, corruption, credit card, sustainable development.*

INTRODUCTION

The dictionary meaning of Demonetize is “to deprive (a metal) of its capacity as a monetary standard” or “To withdraw from use as currency” So, demonetization is the act of stripping a currency unit of its status as legal tender. On November 8th, 2016, the Government of India declared that the five hundred and one thousand rupee notes will no longer be legal tender effecting from midnight. The Reserve Bank of India (The Central Bank of the country) issued new five

hundred rupee notes and two thousand rupee notes from 10th November, 2016. The movement by the regime on the 8th of November 2016 had taken the entire country by surprise. There were certain reasons for Demonetization in India, namely to promote a Cashless, economy, to eradicate counterfeit currency, to eliminate black money, to combat corruption, to combat inflation, to crackdown on terrorism and Naxalism among others.



OBJECTIVES OF THE STUDY

1. To study the concept and rationale of demonetization,
2. To analyze the growth and development of mobile wallets due to demonetization,
3. To analyse the Post demonetization effect on the sample selected in the Kolkata region.

RESEARCH METHODOLOGY AND DATA COLLECTION

This is an empirical research which is based on both primary and secondary data. The secondary data has been collected from various journals, magazines and newspapers. The primary data has been collected through Google forms between time periods of April 2017 to December 2017. The respondents have been randomly selected from the Kolkata region within the age group of 18-65 years. Graphical tools like pie charts and histograms have been applied to interpret the data.

ANALYSIS AND INTERPRETATION Concept and Rationale

The annual report of Reserve Bank of India (RBI) as on 31st March 2016 stated that total bank notes in circulation valued to Indian Rupee (INR) 16.42 trillion (US \$ 240 billion). The total worth of the old denominations in the circulation amount to INR 14.2 trillion (US \$ 210 billion), which is approximately 86% of the total value of legal tender in circulation. After the announcement of demonetization by the Indian government, public was allowed to tender their old currencies at any office of the RBI or any bank branch and credit the value into their respective bank accounts till 30th December 2016. These old currencies would have to either report by paying the applicable tax and penalties or would get extinguished. Some cash holdings were perfectly "white" as income has been declared and taxes on such net income has been paid and is not applicable in the first position for example agricultural income. Cash holdings arising from such income could easily be deposited into banks while black money would face various complications. Black money holders could declare their unaccounted assets and pay taxes at a penalty rate; continue to conceal it without exchanging their old currencies and thus suffering a tax rate of 100%; or launder their black money, paying a price for converting the money into white. India's demonetization exercise is not unprecedented in its own economic history. It has experienced such instances of demonetization measures twice in the past, in January 1946 and January 1978. Government of India, in the

past, had adopted several steps to control unlawful menace, including creation of the Special Investigative Team (SIT) in the 2014 budget; the Black Money and Imposition of Tax Act 2015; Benami Transactions Act 2016; the Information Exchange Agreement with Switzerland; Changes in the tax Treaties with Mauritius, Cyprus and Singapore; and the Income Disclosure Scheme. India's demonetization exercise is quite distinct from the global economic record, in that its joint confidentiality and unexpectedness amidst normal economic and political conditions. Demonetization in other nations has occurred in the context of hyperinflation, wars, political turmoil, or other extreme circumstances. Some countries, in the past, had embraced the act of demonetization where public refused to accept the decision resulting in a big breakdown in government who implemented in their rule. In 2010, dictator of North Korea, Kim Jong-2 demonetized old currency to crack down black market, fight inflation and to improve the economy of the country. But this move of Kim Jong didn't give any better effect to the economic system. However, price of necessity goods increased and this led to public panic. On January 1991, Mikhail Gorbachev, the first president of the Soviet Union Government, withdrew the currency note of Ruble 50 and 100 to address black money in the country and increase the currency value. The government expected that it will lessen the market of black money and give a proper life to ordinary people. But this selection of the government considered a wrong twist and people started doubting on government that resulted in deprivation of public confidence, hyperinflation, cash drying up and even loss of businesses. Gorbachev faced a rebellion within eight months in August 1991 as the move was not a success.

Growth of Mobile wallets and E Wallets

Move to Electronic Currency due to the cash crunch after demonization, was the most obvious outcome of this move. With limitations on cash transactions, alternative patterns of payment like usage of plastic money (debit and credit cards), e-wallets and apps, online transactions using e-banking, etc. have gained ground. The demonetization indicates a possibility of transformation in spending behaviour on account of switching to other mode of transactions other than cash. There are numerous substitutes for cash in the contemporary financial system ranging from cheques, debit cards, credit cards, pre-paid cards, and mobile wallets. With frequent use of modern means of transactions, the consumption levels are expected to increase. In the long-run, it is expected to alter the lifestyles of the people and their spending behavior.



- Smartphone has become essential part of daily life. According to TechSci Research's latest report, India's mobile wallet market could reach \$6.6 billion by 2020. Smartphones are used as communication devices, as socialized tool, entertainment tool, internet access tool, and even payment tool.
- Mobikwik said it has registered 18-fold growth in transactions since the announcement of demonetization that saw old Rs 500 and Rs 1,000 notes ceasing to be legal tender. MobiKwik registers 7000% increase in bank transfers.
- Paytm has been witnessing over 7 million transactions worth Rs 120 crores a day, helping it cross \$5 billion GMV sales. Over 10 lakh offline merchants across India accept Paytm for payment including taxis, autos, petrol pumps, grocery shops, restaurants, coffee shops, multiplexes, and parking. Paytm has over 150 million mobile wallet users currently.
- The mobile wallet saw almost immediate results, reporting a 1,000% growth in money added to the mobile wallet, a 300% rise in app downloads, and an increase from three transactions per user per week to 18 over a three-week period.
- Freecharge claimed that the average wallet balance on its platform increased 12 times since the announcement.
- One of India's biggest banks, the State Bank of India (SBI), has blocked its customers from transferring money to their Paytm wallets, rather recommending they use the bank's own wallet, the State Bank Buddy, according to Mashable.
- Currently SBI's mobile wallets has 5 million downloads on the Google Play Store, according to Mashable. However, this could significantly grow if the bank doesn't allow its customers to use alternative wallets and leverages its massive network. The bank has over 20,000 branches in India, more than 54,000 ATMs, and it holds a 22% share of the domestic Indian banking market.
- The ratio of Oxigen's offline and online business is 90:10 in terms of gross realization but it is 60:40 in terms of gross transaction value indicating a heavy reliance on the offline business but the company aims to grow its online business. It has spiked over 160 percent as per-pressreader.com
- It has a large footprint of 2,00,000 retail touch points and more than 150 million active users, over 15,000 online and offline vendors, a wide network of over 100 banks and 14,000 trade partners scattered around the country. It handles transactions worth Rs 1200 crore every month.

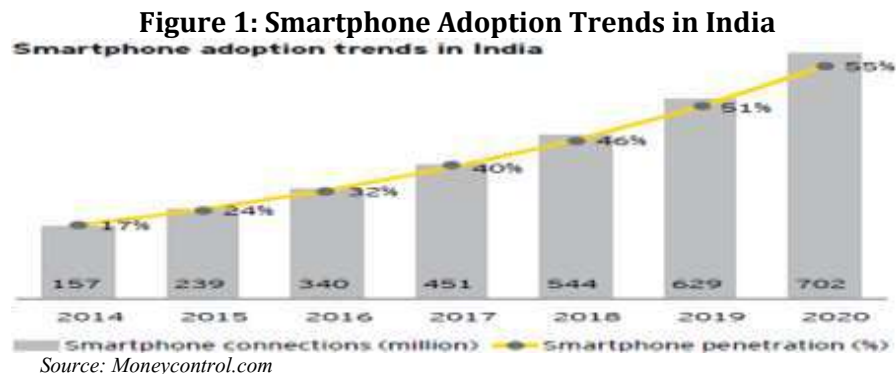




Figure 2: E- Payment Adoption Trends in India



Source: Moneycontrol.com

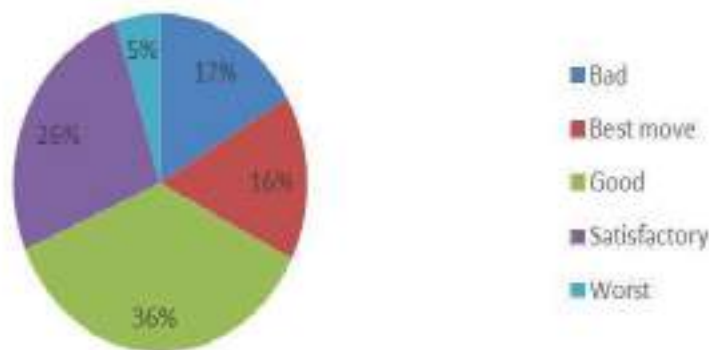
Post demonetization effect on the Sample Population.

Demographics

72% of the respondents were male and 28% female. 62% of the respondents were in the age group of 18-25 years; 34% were in the 26-40 years age group; 2% were in the 40-60 years age group; 1% was above 60 years and 1 % was below 18 years. 36% of the respondents were students; 11% were professionals; 44% were in service; 5% were in business; 2% were housewives and

2% were Entrepreneurs. 3% of the respondents were in the monthly income bracket of Rs. 5000-10000; 47% of the respondents were in the monthly income bracket of Rs. 10000-20000; 3% were in the monthly income bracket of Rs. 20000-25000; 18% were in the monthly income bracket of Rs. 25000 and above; 10% were in the monthly income bracket of Rs. 5000 and below; 19% were dependents. The analysis of some of the answers of the respondents is given below.

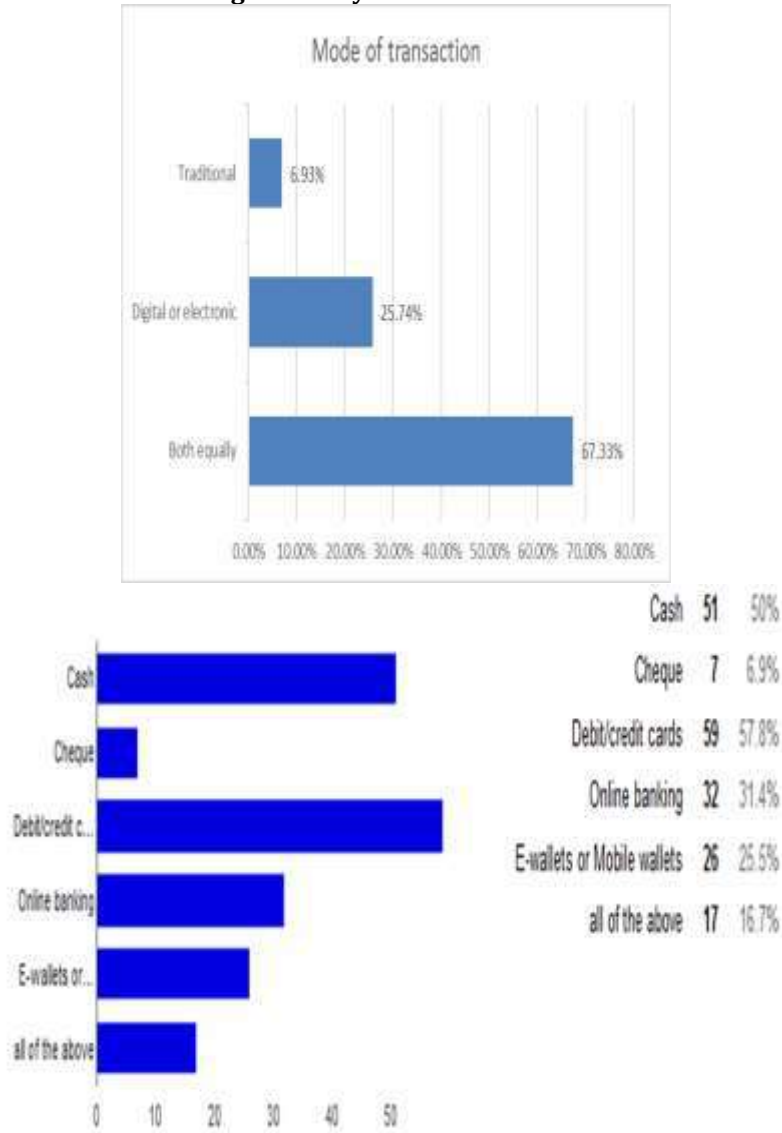
Figure 3: How do you rank PM Modi's move of demonetization?



Only 22% were not satisfied with this move. Overall, it was a satisfactory move for the population in view



Figure 4: Payment Preferences

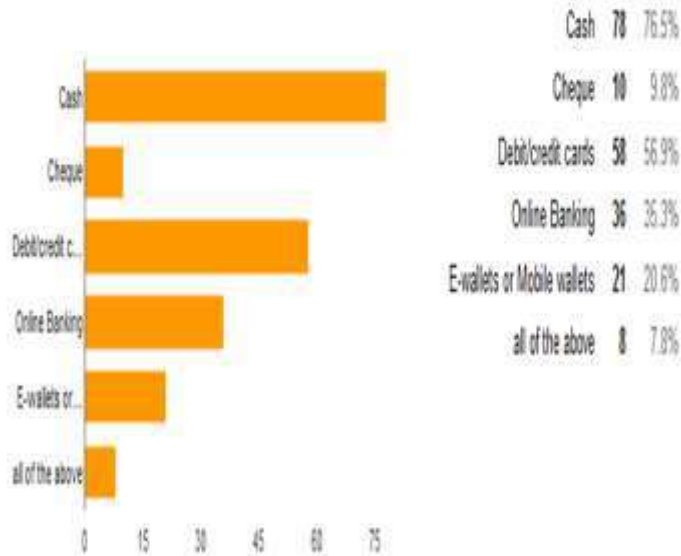


A majority of the respondents (67.33%) prefer using both the traditional and digital modes of payment. Out of those who are using the digital mode of payment also 57.8% are using credit/debit cards. Payments

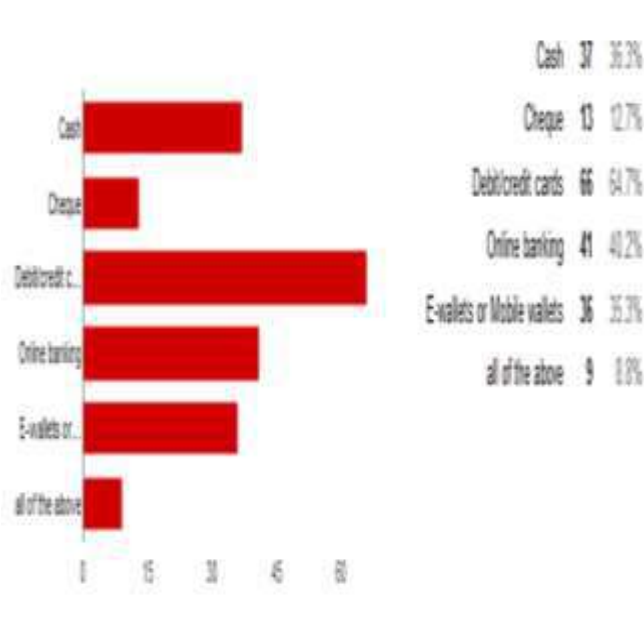
through Online banking and e – wallets are slowly gaining ground.



Figure 5: Usage Trend before and after Demonetization.
BEFORE DEMONETIZATION



AFTER DEMONETIZATION



There has been a considerable increase in the usage of Debit/Credit Cards, E- Wallets and Online Banking services post demonetization. This is not only

because of the cash crunch but also due to the ease of transaction that the respondents could avail.



Figure 6: Digital Payment Usage

Digital Media Usage

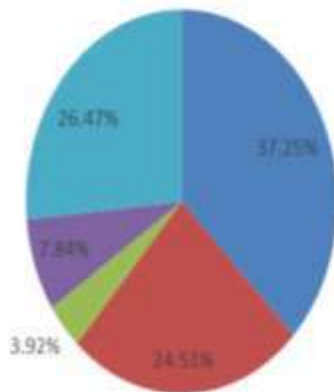
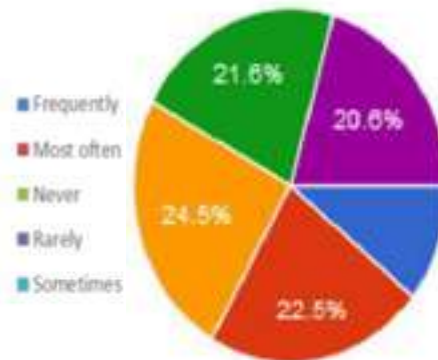


Figure 7: Mobile wallets usage



Most often	11	10.8%
Frequently	23	22.5%
Sometimes	25	24.5%
Rarely	22	21.6%
Never	21	20.6%

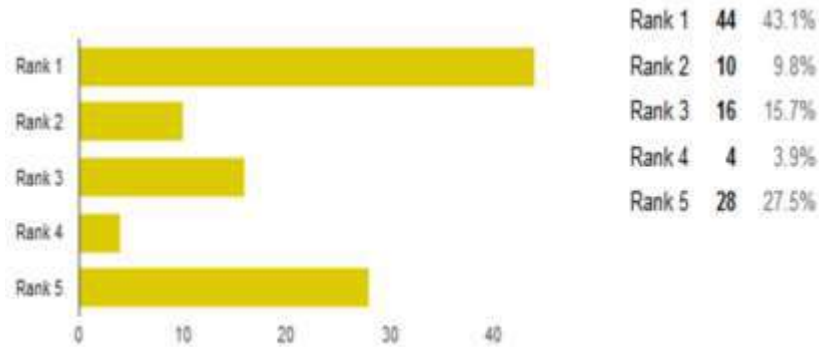
37.5 % of the respondents use the digital media frequently. 88% are generally using digital modes, out of those, 58% are generally using mobile wallets. Overall, Mobile wallet usage is taking up pace among users.

We also analyzed the preference of a type of wallet amongst the e-wallet users. Some of the aspects are discussed as below.

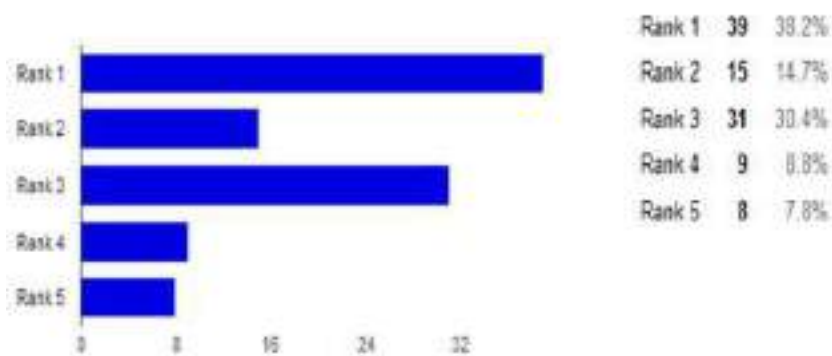


Figure 8: Wallets Preferred

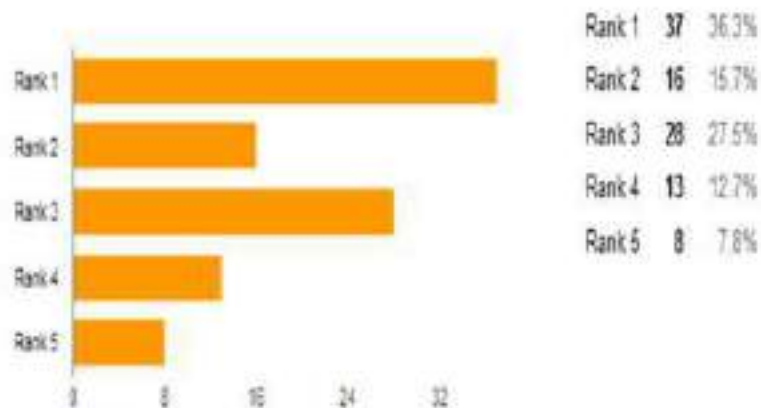
Paytm:



Oxigen:

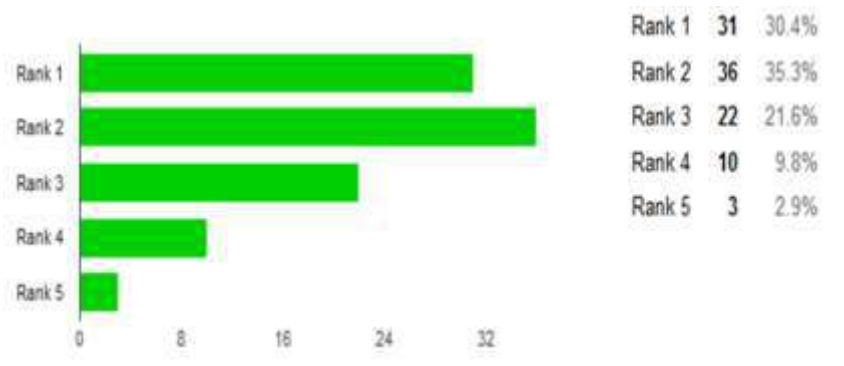


SBI Buddy:

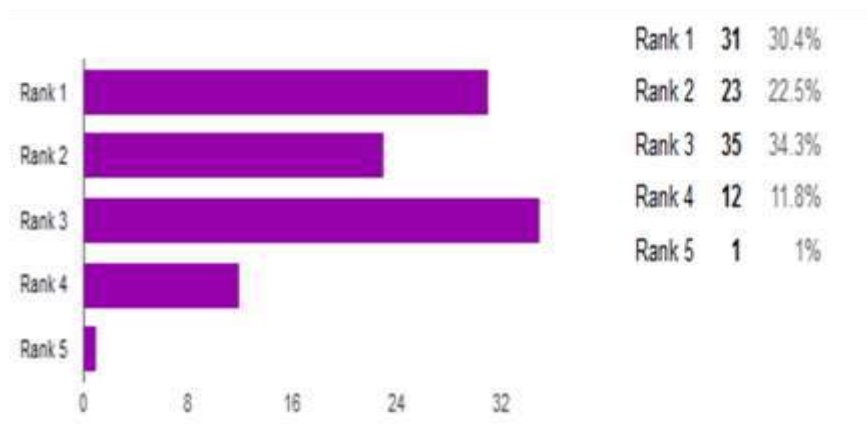




Freecharge:



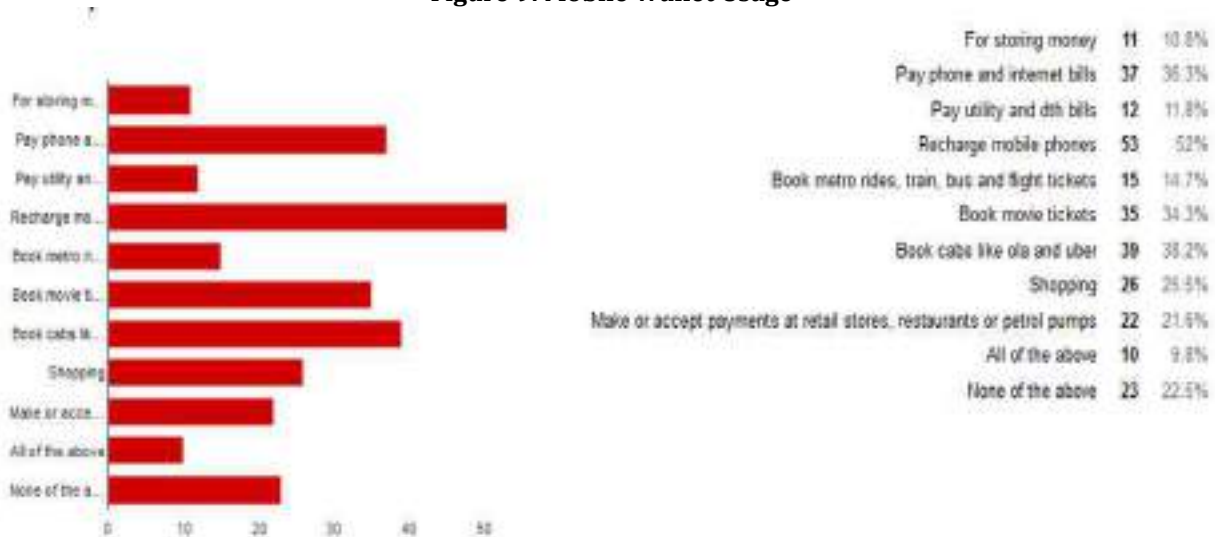
Mobikwik:



A majority of the e-wallet users prefer the Paytm application (43.1%). Oxigen and SBI Buddy are second and third in preference with 38.2% and 36.3% respectively. respondents ranking them as first preference



Figure 9: Mobile Wallet Usage

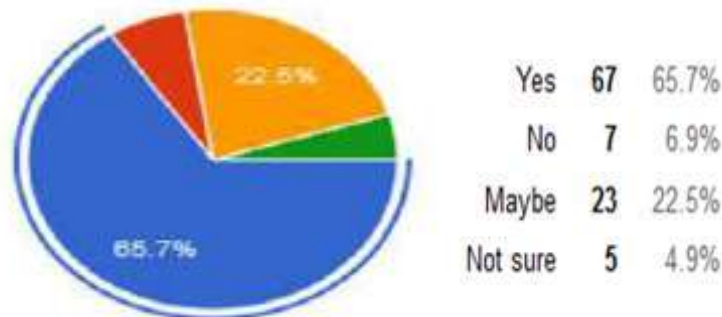


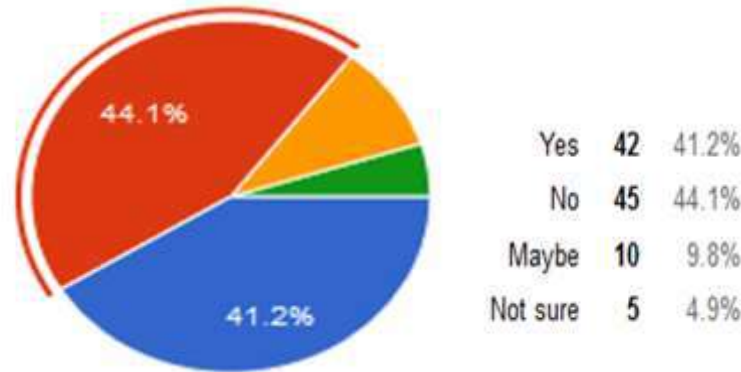
In a further analysis we found that between Cash and Mobile Wallets there were certain specific issues. Some of them have been highlighted. 41.6% respondents still prefer carrying cash, whereas 50.5% actually prefer carrying both cash and mobile wallets. 60.4% perceive that mobile wallets are comparatively safer than cash in the context of theft or loss however the mobile wallet users showed concerns over cybersecurity issues. Only 14.7% preferred using only mobile

wallets as compared to 43.1% who preferred using both cash and mobile wallets.

In the final part of our analysis we observed that 65.7% of the respondents owe the recent rise in e-wallets and mobile wallets usage to demonetization. 44.1% are not supportive of a completely cashless economy. India is still not ready to accept digitalization but the rate of acceptance is increasing gradually and steadily.

Figure 10: Rise in the use of e-wallets or mobile wallets due to demonetization



**Figure 11: Preference towards cashless digitalized economy**

CONCLUSION

They are not ready yet to shift completely to a cashless mode of functioning. Also Paytm has come up as the most popular e-wallet among the masses. The Government's recent decision to dominate the higher value currency is one of the major steps towards the eradication of black money, control corruption, terror financing, and eliminate counterfeit currency in India. The announcement of the demonization of the currency has caused enormous hassle to the public. The economy of the country has experienced a recession in the last few months, but it is expected to get back to its shape in the long run. The demonetization drive has affected some extent to the general public, but for the larger interest of the country such decisions is inevitable. Economic experts are busy analyzing the merits and demerit of this demonetization policy. However, there are only advantages of the policy and that will be reflected in the long term, the forecast is that its benefits would be witnessed in the long run. Former Prime Minister Manmohan Singh, who is a noted economist, former RBI governor and former Finance Minister of the country, refers the initiation as an 'organized looting and legalized plunder. Nevertheless, if merits are compared against demerits, it would be safe to conclude that the former outweighs the latter. Ayhan Kose, Director of Development Prospects Group at the World Bank disclosed that the unfavourable effects of demonetization in India will disappear in the long term as any reform has short-term costs. It is further added that the World Bank is expecting growth over the financial year 2018 and 2019 supported by private consumption, infrastructure spending, and a rebound in investment growth. India has already undertaken a wide range of reforms. These reforms would loosen domestic

supply bottlenecks and increased productivity, moderate inflation and civil service pay raise should go along to support real incomes and expenditure. In our sample survey we observed that though the demand for digital mode of payments have increased a lot post demonetization, yet a considerable percentage of the respondents prefer both the cash and digitalized mode.

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SUPPLY CHAIN AND LOGISTICS MANAGEMENT: AN ENTERPRISE APPLICATION OVERVIEW

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ABSTRACT

This paper covers the various factors which are considered while making logistics and supply chain management decisions. It incorporates the competitive strategy along with the supply chain strategy and creates the balance between efficiency and responsiveness so that cross functional drivers such as facilities, inventory, transportation, information, sourcing and pricing are kept in check.

KEYWORDS — *Supply Chain, Logistics, Decision Making, Enterprise, Application, Operations, Management, 3PL, ESCM, Procurement*

I. INTRODUCTION

From a logistics and supply chain point of view we are in exciting times. There are various decisions which are being made about warehousing needs of corporations, the type of storage systems which are to be used. Further the type of material handling equipment which would be used play a pivotal role in getting the strategies in place. The corporations in India used various methods to ensure all the requirements mentioned above are processed digitally in a timely manner. All this requires various key performance indicators to be assessed in order to benchmark it in with industry standards. There are various sub concepts which are involved in this this complex system. This involves outsourcing, 3PL model and E-SCM. All these aspects put together for the basis for all enterprise level decisions which are taken to meet the requirements of the supply chain industry.

II. LITERATURE REVIEW

Warehousing Decisions

The modern supply chain networks have seen all warehouses evolve into an Omnichannel warehouse. These warehouses are different from brick & mortar, online and other channels.

The reason why we are seeing this transition is because a single warehouse cannot handle all orders. Thus, via application of warehouse management technology, all orders which are coming from various channels are handled in an efficient manner. In the modern age of E-Commerce, handling of all orders via a single warehouse is impractical and can result in lost opportunities.

Due to digitalization of processes, streamlining returns is an integral part of developing an omnichannel warehouse as 30% of all purchases are returned. So, adding return capabilities to all warehouses is a mandate.

**Advantages of operating these new warehouses are**

1. Reduced delivery times
2. Better collaboration
3. Expanded options
4. More variety
5. Improved accuracy due to integration

New Storage Systems

Starting in the last 2000s we have seen a huge shift in the way storage systems operate. Now companies have started to install mobile racking systems. These systems comprise of racking superstructure, which is installed to a powered moving base, this system has been able to increase storage capacity by as much as 100%. This system replaced conventional aisles with moving aisles and this unique design combines direct access with a substantial increase in storage density.

The system provides a greater volume of storage capacity, greater product accessibility and energy conservation. In addition to cost-per pallet savings and higher revenue potential, this new system has eliminated double handling while increasing air circulation and product integrity.

The major advantages of these new systems are

1. Reduce inventory excesses
2. Improve customer service
3. Shorten delivery times
4. Enhance handling through streamlining and better timing
5. Improve inventory management and the accuracy of information through real-time monitoring
6. Facilitate product control through better monitoring and management
7. Lower overall handling costs in manufacturing, distribution and transportation

Modern MHEs

MHE stands for Material Handling Equipment. In the modern times we have various systems which are deployed to enable an efficient order to deliver cycles and help companies manage their business with buying cultures which are in a continuous state of flux. Whatever the process may be, material handling does play a crucial role in the overall success of project execution.

With respect to the Indian ecosystem, India is the only developing country which is totally self-reliant in such highly sophisticated equipment. These equipment's help to perform a variety of functions in all processes of supply chain.

In India most notably, we can see Chennai as an emerging key market for MHE with a huge number of warehouses and container freight stations coming up in and around the city. The reason behind this surge is that Chennai port is emerging as a major container handling port. This increasing the demand for forklifts, pallet trucks, stackers, order pickers and reach trucks. The major players in Indian MHE market are L&T and Godrej.

Packaging Strategies

Getting the perfect packing is the key to improve supply chain performance. It is not only associated with the box that contains the product, instead it is a coordinated system of preparing goods for a safe, efficient and a cost-effective movement through the entire supply chain network. Having the perfect packaging design maximizes the sales, profits and consumer value.

Logistics corporations improve supply chain performance by improving packaging. This is achieved by removing all unnecessary materials and steps in the shipping and packaging processes. Practices such as having too much protective material encasing the product fall under the inappropriate category. This doesn't cost more but slows down the processing and delivery time for customers.

Further proper packaging practice allows to introduce creative packaging which gives the opportunity to engage with customers. The methods which increase product safety and security while reducing materials used, focus on efficiency and resource reduction.

The factors which affect packaging design are

1. **Flow function-** It involves all features which contributes to easy handling during distribution. It includes distribution, disposal, unpacking and return logistics.
2. **Environment function-** It involves lowering the negative impact of the system on the environment and it is achieved by lowering the inputs while getting the same outputs.
3. **Market function-** It considers various aspects like layout, design and communications to add value to the brand and product.

In the modern packaging methods, the following methods can be applied to improve and optimize the network

1. Eliminate design deficiencies- Using of industry's best practices. This helps to enhance efficiency and reduce the cost of goods.



2. Packaging procurement- By streamlining the process and standardizing raw materials we can benefit and save cost as well.
3. Standardization of size and equipment- It can help reduce change over times and produce higher line utilization.
4. Optimized packaging- The key to optimize packaging is to reduce weight and include the package's aspect ratio to the design.
5. Identification of bottlenecks- By identification of bottlenecks we can increase overall line efficiency.
6. End of line solutions- These solutions help to increase efficiency. End to end automation can not only increase output but can also improve on the quality of end packaging.
7. Sustainable operations- Using of recyclable and energy efficient materials can help to reduce carbon footprint.
8. Better warehouse management- Some ways of better management can be reusable and standard pallets, differentiating between shortest and most efficient distance and always looking for even small packaging improvements.

Hence these practices are used by Indian logistics enterprises due to digitalization of processes.

Analysis of key performance factors in various transportation modes used in Indian logistics

There are various factors which determine the overall performance in the various transportation modes used in logistics.

Such as: -

1. **Fuel Consumption:** The type of fuel used in the transportation mode and the amount required as compared to the cost.
2. **Load Carried:** The maximum amount which can be placed on the cargo carrying medium.
3. **Weight of cargo:** The total actual weight of the cargo which is to be moved from point A to point B.
4. **Type of cargo carried and its dimensions:** Review if the cargo is odd sized or is oddly shaped.
5. **Type of route used:** Rail, road, air, water, type of highway.
6. **Type of goods transported:** Perishable or non-perishable goods.
7. **Limitation of usage:** How many times can the same solution be used. Single use vs multiple use.

There are various transport modes which are currently in place to carry or deliver freights from source to the destination. In India the various modes used are: -

Road Transportation: It is known as the oldest form of transportation to move products or goods from one place to another. This movement is normally done with trucks and trailers.

Trucks are mainly run by diesel engines. These engines allow them to carry heavy loads of freights. The trucks can have trailers specially fabricated which allows them to carry varied sizes of cargo through networks of various national and state highways. Each truck can be customized to carry special types of perishable and non-perishable goods.

The advantages of road freight are

1. It is a cost-effective method
2. It helps in to deliver freight in a quick and efficient manner
3. Roads give connectivity to even remote rural areas
4. Packing requirements are minimal in this medium
5. Real time tracking is easily possible
6. It can provide complete door to door service and is one of the commercial means of transport

Rail Transportation: It is one of the cheapest ways to transport goods from one place to another. Also, rail transportation is the oldest and ancient way of transportation. This mode, as compared to others has a very minimal chance of accidents and breakdowns.

Trains in India use two types of engines. Majority of routes have already been electrified so electric engines are run there while in other routes, diesel engines are used. Train carriages allow a very high load carrying capacity and their tonnage is normally very high. But the main constraint is freight trains must cover through long distances to reach their destinations as their routes are pre-mapped. Due to pre-mapped routes, easily perishable goods are normally not sent through trains. In trains there are three types of carriages, first is to carry liquids, second is to carry free size cargos and the third type is for shipping container movement.

Advantages of Rail transportation are

1. Cost effective solution for long distances
2. Freight can be transported in large quantities
3. Schedules are most reliable
4. Can be considered as the safest mode of transport

Air transportation: It is the fastest and quickest way of transportation. It is the most expensive mode of freight



movement as compared to other modes. The cost associated with this mode is highest, but its efficiency and time taken to transport the goods is very less.

In aircraft operations, aviation fuel is the costliest apart from aircraft maintenance. Aircrafts have a limited load carrying capacity which is derived by the aircraft size and configuration. Due to its speed, air freight can carry both perishable and non-perishable goods but the main limitation in this mode is the cost factor.

Advantages of air freight are

1. Faster delivery
2. Complete end to end security
3. Accurate time of delivery

Maritime Transportation: Due to the physical properties of water limited friction and conferring buoyancy, maritime transportation is the mode effective mode to more large quantities of freight over long distances. Indian maritime routes consist of coasts, sea, lakes, rivers and channels. Due to constraints of economic activities maritime circulation takes places on specific parts of the maritime space.

Maritime transportation is done through ships which run on gas turbines or diesel electric engines. Ships have a huge load carrying capacity as you can load containers on it for freight movement. All cargo which can fit inside a shipping container can be moved via the maritime route. All types of goods can be moved depending on the distance. The best part of maritime transportation is transport containers can be reused / reconfigured for future movements.

Advantages of maritime transportation are

1. Inventory costs
2. Involvement of heavy industries
3. Availability of ports

3PL

Third-party logistics in management of supply chain is when an organization used third party businesses to outsource elements of its warehousing, distribution and fulfilment services. Normally 3PL specializes in integrated warehouse and transport operations which can be customized and scaled as per customer requirements, market scenario and delivery service requirements of their products. A company which provides these services to the organization is known as a third-party supply chain management providers (3PSCM). 3PL companies target specific functions within the supply chain network which are transportation, provision of raw materials and warehousing.

3PL providers include courier companies, freight forwarders, etc. These companies are known to integrate and offer subcontracted logistics and transportation services.

3PL providers fall under the four categories

1. **The customer developer:** This is the provider which integrates itself with the customer and takes over the entire logistics function, these special providers have very limited customers and perform detailed and extensive tasks for them.
2. **Service developer:** This provider provides the customer with special services such as cross docking, tracking, tracing, packaging and security. A strong IT foundation helps the provider to perform these types of tasks.
3. **The customer adapter:** This type of provider takes control over entire logistics function of the company. The provider improves the overall output but does not develop a new service. Such providers have a very limited customer base.
4. **Standard Provider:** This is the most basic type and perform the basic pick and pack services. For these providers 3PL function is not their primary activity.

Outsourcing

When an organization outsources its entire supply chain management activity to an external organization (which is the outsourcing partner specializing in same). Outsourcing helps to minimize the overall cost, allows the company to focus on its core competencies, meet customer demands more effectively and avail more flexibility in operating and maintaining its entire supply chain network. When a company is outsourcing its SCM activities, organization takes care of all integration issues which they might face when an external organization manages the supply chain network (which is essentially the backbone of the organization). If the entire integration process is taken care of and 3P organization has prior experience and expertise in managing the supply chain network of other organizations, SCM outsourcing can provide a strategic advantage to an organization.

Major benefits of outsourcing SCM network are

1. More focus on strategic tasks
2. More security in supply
3. Reduced overall costs
4. Meeting of customer demands
5. Increased supply chain capabilities
6. More scalability



Electronic Supply Chains

E-Supply chain management is a regular practice in the manufacturing industry. Under E-SCM, all value-added activities are done via the internet. This ensures that the products produced meet the customer requirements and end up in a good return on investment.

E-SCM can be divided into three main activities

1. **Financial flow:** Consists of payment schedules, credit terms and title ownership arrangements.
2. **Information flow:** It involves transmitting of orders and updating status of delivery.
3. **Product flow:** It is the movement of goods from the supplier to the customer also reverse logistics i.e. customer to supplier.

Advantages of E-SCM are

1. It reduces paperwork, overheads, inventory build-up and number of hands required to deliver goods to the customer.
2. It reduces cycle time, increases revenue and improves customer service.
3. It improves order management, order fulfilment, forecasting, decision making, demand planning and distribution activities.
4. It increases the ability to implement JIT i.e. Just in time delivery which increases customer satisfaction.
5. It helps to take competitive advantage
6. It reduces inventory
7. It reduces overall cost
8. It improves efficiency

Buying and Procurement Process

Buying and procurement are two different things. Procurement involves the process of establishing payment terms, selecting vendors, selection, strategic vetting, negotiation and actual purchasing of goods. Procurement is acquiring services and goods which are vital to an organization. Broadly procurement can be considered as an umbrella term and buying comes under it.

Procurement has a fixed process which is followed

1. Requirement identification
2. Purchase request authorization
3. Procurement process
4. Supplier identification
5. Quotation inquiry / receipt
6. Price negotiation
7. Vendor selection

8. Acknowledgement of Purchase order
9. Advance shipping notice
10. Receipt of goods
11. Invoice recording
12. Matching - 3 way
13. Supplier payment

Buying as we have already discussed is a subset of procurement. It refers to buying of goods and services. Buying includes receiving and payment as well.

Main steps related to buying are

1. Acknowledgement of buying order
2. Advance shipping notice
3. Receipt of goods
4. Recording of invoice
5. 3-way match
6. Supplier payment

Hence, we can say that procurement deals with the sourcing activities, strategic selection of goods, negotiation and services which are important for the organization. Buying is the process of how goods and services are ordered. Buying can usually be described as the transactional function of procurement of services and goods.

Negotiations in Procurement

"You can motivate suppliers to offer their best price by starting the relationship as a conversation, not a competition (den Butter and Linse, 2008)."

Negotiations can be helpful while working out a deal and can be considered critical in procurement. There are various characteristics, tools and success factors which are useful for decision markers involved in the negotiation process.

Negotiation is a process of communication with the objective of reaching an agreement by means where appropriate, of compromise. An effective negotiation is the one which can achieve this goal and is able to secure the materials, supplies and services of the right quality, at the right time, in the right quantity, from the right source and at the right cost.

The main guidelines for procurement are

1. The objectives associated with procurement should always been clear. The goals set should achieve like you would do with a traditional stakeholder. Goals should be built into the pursuit plan they should be aligned with the company's and customers' values.
2. Always ask for a meeting. The early the meeting is done, more time you would get to evaluate and build a better relationship with the point of contact.



3. Material preparation should be done well in advance. All required materials such as references, insurance, background checks, business case, ROI calculation, etc all should be done before hand as it might be risky to prepare the materials when the actual time comes. Being a proactive professional is the key.
4. Install urgency i.e. the person or team taking the decision should clearly know why having a solution in place is important now than having it later. While calculating the overall cost, the cost associated with cost of waiting should also be factored in as if the solution being provided will be saving a lot of money, there is a less likely chance to delay.

Buyer / Supplier Relationship & Collaboration under framework of International regulation

Buyer / supplier relationships can be complex as each party wants to maximize its resources, time and cash investment. All these priorities can be competing among one another and they can strain the relationship.

The basis of a mutually beneficial relationship is that each party should be able to understand each other's business needs. Partners should realize that success of one partner can help in success of the other.

Knowing with whom you are conducting your business is important. For example, the US government has listed various parties with whom one cannot conduct business. It is important for the importer and exporter to take necessary steps to ensure all parties in the supply chain network are approved and are not restricted in any manner.

There are various methods applied which help to screen which parties are restricted. This becomes an important step as many businesses outsource parts of their supply chain network. US's packaging requirements, EU's reach initiative, China's RoHS initiative have gain momentum recently. Hence it becomes critical that all suppliers support these regulations.

In India buyers have a tradition of being willing to change suppliers if they are offered a better deal. This is seen as a strategic approach where supplier relationship management is initiated even before an agreement with the supplier is signed. This ensures the company has a competitive advantage in the long run. This is seen as a forward focused approach. Despite all these approached, having a long-term relationship with suppliers forms an integral part of modern supply chain strategy.

III. CONCLUSION

All the topics mentioned in this research article provide an overview of various drivers which support

numerous supply chain initiatives in the modern times. It is interesting to see how various cross functional drivers intervene to support and deliver various supply chain strategies. These drivers are not only responsible to drive the business needs but also to meet the future needs.

Understanding these drivers can help supply chain managers to effectively manage the costs and deliver projects as per the given timelines of the organization.

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AN OPENCV BASED EFFICIENT FACE RECOGNIZATION APPROACH FOR AUTOMATED ATTENDANCE UPDATION

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ABSTRACT

Traditional way of taking attendance can lead to various anomalies such as proxy, misallocation of attendance register. The proposed method overcomes the defects that exists in the traditional method. The latest digital register tracks the student's presence by identifying and recognizing their details by using Machine learning algorithms.

KEYWORDS- *digital register, identification, recognizing, attendance, machine learning*

I. INTRODUCTION

A robotized framework for human face acknowledgment in a constant foundation for a school to stamp the participation of their Students. The coordinated face is utilized to check participation of the Student. Our framework keeps up the participation records of Students consequently.

In past there was Manual checking of participation of students, by this Data might be odds of loosing of every single understudy or there would be some fraudulent activities like proxy attendance by the students to the tutor.

We can enhance the security of this model by implementing IRIS retina scan for more secure and robust environment.

II. LITERATURE REVIEW

[1] In this paper author proposed a model that overcomes the disadvantages exists in the manual attendance system. By using face recognition and RFID it becomes easier in tracking student's presence.

[2] Author in this paper suggests that smart attendance system that is student tracking using face recognition and RFID helps in rapidly reducing capital on attendance system. Managing attendance through smart attendance system is much easier than traditional way.

The author of the paper performed thesis on the people living in Arab countries. Where girls wear veil and boys are beard this can create ambiguity in recognizing students face. This can be overcome by using certain pattern tracking in different genders which helps in segregating both male and female.

[3] The wordsmith in this paper has proposed a method to record attendance by surveilling classroom through video. This enhances the learning efficiency of students eluding traditional roll call procedure. It detects and marks student as absent when he/she uses mobile phone beyond threshold time.

[4] The transcriber of the paper proposed that participation mechanization utilizing face acknowledgment is a non-meddling strategy and it causes the administration to keep up an exact participation database as the test picture is passed through various levels. The in-time and out-time of the understudies is checked and dependent on the time the participation is checked. Consequently, this framework whenever actualized, it just so happens to be a verified and validated framework with elite.

[5] This system has been designed to automate the attendance maintenance. The main objective behind

developing this system is to eradicate all the drawbacks and unconventional methods of manual attendance handling. The traditional methods lag the effectiveness of the system leading the time and paper wastage, and causes proxy attendance which is eliminated in automated system. So to overcome all such drawbacks of manual attendance, this framework would come out to be better and reliable solution with respect to both time and security. In this way, automated attendance system helps to distinguish between the faces in classroom and recognize the faces accurately to mark their attendance. The efficiency of the system can be improvised by fine tasking of the training process.

III. PROBLEM STATEMENT

Recording student attendance using manual method has plenty number of flaws and this lead to development of RFID based attendance this method is also incorporated with some defects. This face recognition based attendance system reduces proxy of attendance, hence only those students will get attendance who are present physically, nobody else can give attendance on behalf of someone else.

Face recognition for attendance maintenance is one of the best way to tackle issues that are existing in the preceding methodologies.

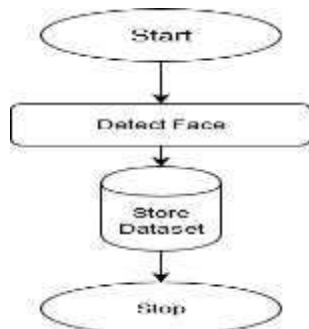


Fig 4.1 face detection and storage

- Face detection and storage: The model detects the face pattern and stores the image in the database for further usage.

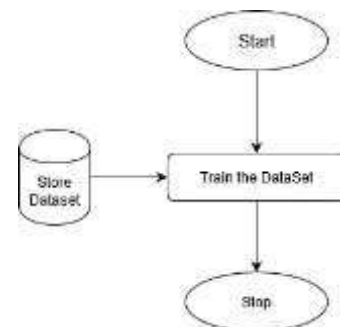


Fig 4.2 Image training

- Image training: Images that are stored in database get trained by storing different parameters of the image.

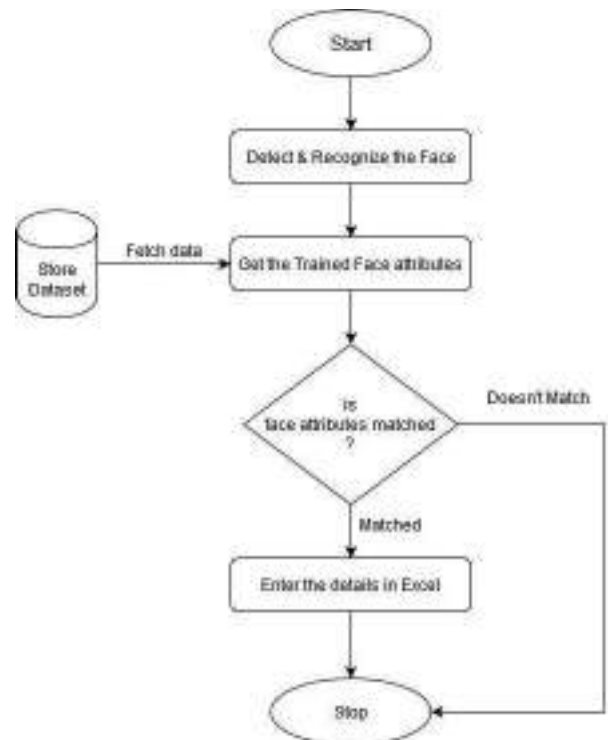
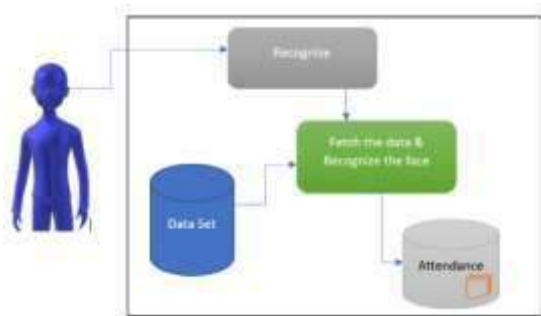


Fig 4.3 face recognition from database

- While detecting face for recognizing it with database, image of the person gets detected and checks whether there are any predefined patterns available for that image and if there is no available patterns person's face don't get recognized.

**Fig 4.4 System Module**

Initially student's face gets recognized and captured by the camera the user's attributes gets stored in the database based on the parameters that are pre-defined in the back end. Later while recording attendance, student's face gets scanned by the camera and the system logic matches for the patterns of that particular face in the database and if match is found then attendance of that specific student is marked. If student face is not matched with the patterns in the database, then unknown tag is displayed.

IV. RELATED TECHNOLOGIES

Face detection technology

Face identification is a PC innovation being utilized in an assortment of uses that distinguishes human faces in computerized pictures. Face discovery additionally alludes to the mental procedure by which people find and take care of countenances in a visual scene.

Face recognition technology

A facial recognition framework is an innovation equipped for recognizing or checking an individual from a computerized picture or a video outline from a video source. There are numerous strategies wherein facial acknowledgment frameworks work, however all in all, they work by contrasting chosen facial highlights from given picture with faces inside a database. It is likewise depicted as a Biometric Artificial Intelligence based application that can interestingly distinguish an individual by examining designs dependent on the individual's facial surfaces and shape.

V. RESULT ANALYSIS

- Face recognition for attendance brought a new trend in recording student's presence which increases the efficiency of students learning by reducing defects that exists in manual model.

The info previously taken is the face example of another understudy. The face design is broken down with the assistance of camera and Arduino assists with controlling the whole procedure. The examples once

gathered can be put away in the database alongside the understudies' subtleties. During the section of the understudy, the framework checks for every one of their faces' examples and scans for a comparable match in the database associated. On the off chance that there is a comparative example coordinating for most extreme 85%, at that point a worth 1 is come back to the database which marks participation status for the relating understudy as "present". In any case 0 is returned if there should be an occurrence of miss match and participation is checked "missing". SQL Update Queries can be utilized to accomplish it. Similar qualities are rehashed intermittently and incase on the off chance that any understudy needs to go out, at that point the face design is distinguished by the camera and in the event that the understudies returns inside 15 minutes of holding time, at that point same incentive as the earlier hour is rehashed. In the event that, in the event that the understudy returns late with the information on concerned resources, at that point the worth 1 can be returned as exemption by the personnel later. In the event that none of the two occurs and the understudy returns late, at that point the worth 0 will be returned for consistently until the understudy's faces is recognized and refreshed once more. Thus occasional participation can be accomplished.

CONCLUSION AND FUTURE ENHANCEMENTS

Face recognition is the optimized method to record pupil attendance. This has the ability to overcome the limitations that exists in the traditional attendance system and RFID. Security and observations are the significant portions which will be profoundly affected. By utilizing robust frameworks of security we can increase the integrity of the system model.

Inclusion of student assessment details such as internal marks, activity marks, contact details etc. makes the system more robust and this makes maintenance of student records easier.

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STUDY OF HEALTHY NUTRITION IN PATIENTS WITH CHRONIC HEPATITIS AND CIRRHOSIS OF THE LIVER

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SUMMARY

Healthy eating is essential to human health and learning about proper nutrition is important in the origin and prevention of diseases. A total of 125 patients with chronic hepatic diseases (47 with chronic hepatitis and 78 with hepatic cirrhosis) were examined on the basis of a WHO questionnaire. The results revealed that patients consumed animal fat, meat products more frequently in their diets, and low consumption of dairy products and vitamin-rich wet fruits and vegetables, especially in patients with hepatic cirrhosis compared with patients with chronic hepatitis. These indications are of diagnostic importance and appropriate diet therapy recommendations will be developed.

KEYWORDS: true nutrition, diet, cirrhosis of the liver, chronic hepatitis, healthy eating.

INTRODUCTION

In addition to pharmacotherapy, diet therapy and the actual nutritional status of patients throughout their lives are important in the treatment of chronic liver disease. Therefore, the search for new treatments with pathogenetic effects remains relevant. Complete and pathogenetic treatment of the disease - in the complex of preventive measures, it is important to carry out dietary treatment correctly and purposefully, because a well-founded and properly prescribed diet increases the effectiveness of other (pharmaceutical, physiotherapeutic) treatments and its remission. can also be recommended for a longer period of time. The study of proper nutrition in the development and clinical course of the disease also helps to shed light on the pathogenesis of liver disease and to differentiate the clinical course.

The liver is actively involved in the management of complex metabolic changes associated with the process of digestion and ensuring their normal passage.

It is known that in order to properly organize dietary treatment in chronic hepatitis, which is

common among liver diseases, attention to the causes and clinical course of liver disease is also important in developing solutions to its relevance.

THE AIM OF THE STUDY

To assess the status of proper nutrition in patients with chronic hepatitis and liver cirrhosis.

MATERIALS AND RESEARCH METHODS

A total of 125 patients with liver disease were observed in the follow-up. Of these, 47 were patients with chronic hepatitis and 78 were patients with liver cirrhosis. The patients were 19–75 years of age, and their mean age was $M + m = 55.9 \pm 2.1$.

In conducting the research, questionnaires (questionnaires provided by WHO), clinical, laboratory, nutritional value determination and biostatistical methods were used.

The following is the distribution of patients by diagnosis, etiology, and developmental period.

Division by diagnosis of chronic hepatitis

Total number	Etiology		
	Uncertain	HbsAg	HCV
47	-	22	25



Division by diagnosis of liver cirrhosis

Total number	Etiology			Period		
	uncertain	Virus		compensation	subcompensation	decompensation
		HbsAg	HCV			
78	-	26	52	-	26	52

CONCLUSIONS AND DISCUSSION

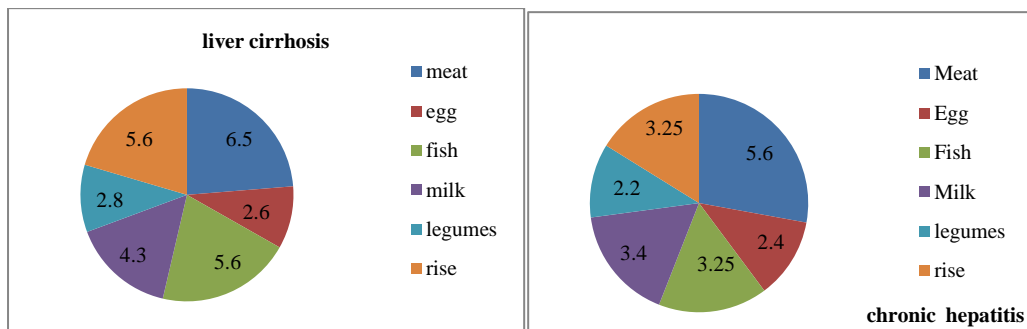
Based on a questionnaire recommended by the World Health Organization, the nutritional status of 125 patients (78 chronic hepatitis, 47 liver cirrhosis) was studied and analyzed. Diagnosis in patients was confirmed using methods adopted in clinical hepatology (total bilirubin in the blood, ALT,

AST, total protein, viral antigens, and UTT). The study of the nutrition of the patients in the follow-up, i.e., actual nutrition, was performed on the basis of a 24-hour feeding timeline.

The data obtained during the diet of patients with chronic hepatitis and cirrhosis of the liver were as follows:

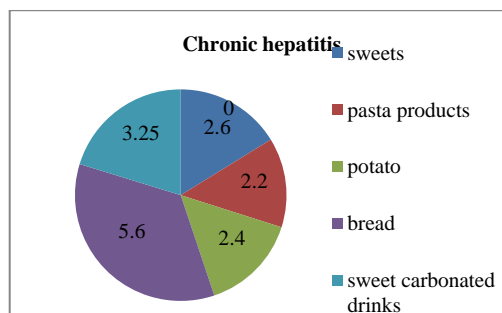
Consumption of protein-rich products in patients with chronic hepatitis and cirrhosis of the liver:

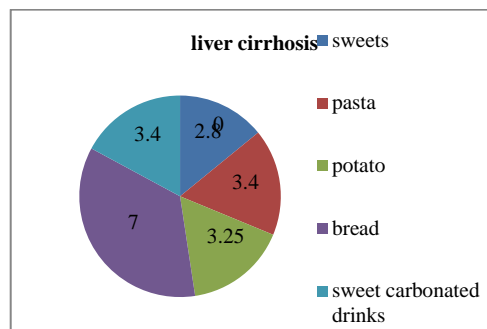
Figure 1



Consumption of carbohydrate-rich products in patients with chronic hepatitis and cirrhosis of the liver:

Figure 2





Consumption of fat-rich products in patients with cirrhosis of the liver is moderately 20-25% higher than in patients with chronic hepatitis due to animal fats (sheep and cattle) and margarine and butter.

The results show that high intake of protein and fat-rich foods, especially mutton, was found to be 1.25 times higher in patients with cirrhosis of the liver than in those with chronic hepatitis, and less in fish products. In the analysis of carbohydrate-rich products, patients with cirrhosis of the liver consumed 1.4 times more bread, 1.2 times more sweetened carbonated drinks, 1.5 times more pasta and 1.3 times more colostrum. It has also been observed that patients with chronic hepatitis consume more vegetable foods and wet fruits.

CONCLUSION

1. *In patients with chronic hepatitis and cirrhosis of the liver, proper nutrition is not normal in most respects, especially due to protein and fat products*

2. *Consumption of milk and dairy products, vitamin-rich wet fruits and vegetables is below the norm.*
3. *Negative indicators of proper nutrition are important in the development of chronic hepatitis and cirrhosis of the liver, and it is advisable to optimize them.*

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WIRELESS INFANT MONITORING SYSTEM BASED ON VIDEO OBJECT TRACKING AND ENVIRONMENTAL SENSORS

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ABSTRACT

Many research has been going on for the development of better infant monitoring system to detect the cause of SIDs (Sudden Infant Deaths) among children and also to monitor or prevent infants from facing mechanical accidents or environmental discomfort. The proposed infant monitoring system is designed to detect the motion and the temperature of the infant using various IOT devices . A camera module is also used to capture videos which allows family members to monitor infant through videos. The data collected from all the sensors will be analyzed and hence will send an alert notification to the parents or relatives of the infant if found any abnormality in the measurements of the taken by the sensors . The technique also focuses on making the whole process of monitoring the infant portable. Which means users can easily monitor their kids from anywhere they want to without having their physical presence .

KEYWORDS- *IoT , Infant Monitoring System , Sensors, Cloud Computing*

I. INTRODUCTION

According to a recent survey , almost 30 percent of infants die in a year due to heat stroke or some other mechanical and environmental accidents every year around the world.

Most of the time the reason behind an infant's death is unknown, and hence the syndrome is termed to as Sudden Infant Death Syndrome. Infants mostly die during their sleep without showing any pre-symptoms.

Also they might face mechanical accidents by moving into places which we consider dangerous for them in the absence of parents or other family members. As infants between 0-3 years cannot speak on their own even, we can't analyze it before if the kid is facing any discomfort .

There are also various evidences available for death or illness of small children because of heat stroke caused while they were inside vehicles . Parents or others might not realize the intensity of the temperature, whether it is harming their baby or not and they might continue to be in the vehicle with them . Parents might also leave their children inside their vehicle for some reason which can also be proved to be hazardous for kids as it doesn't takes much time for a vehicle to get

heat up.

Body of small kids heats up much faster than the adults and hence have greater susceptibility of getting harmed. According to National Highway Traffic Association in US, around 661 children have already died between 1998-2015 because of heatstroke in cars.

Heatstroke is truly a very devastating disease that happens suddenly, resulting in several disabilities and deaths, hence needs to be detected and prevented from occurring.

As mentioned earlier, mechanical accidents may also occur if a child is left alone inside a car due to any unexpected conditi

To overcome all the issues, the above mentioned technique has been proposed which makes use of various technologies such as IoT and cloud computing .As we know , with the introduction of the Internet of Things (IoT), invention and development of devices such as this has become easier and more efficient. The IoT has enabled various mechanical and digital devices to work more efficiently. The devices are now able to integrate and communicate with each other via Internet.



There are various levels of IoT, the most basic implementation of the IoT devices where they are connected just to collect sensor data is considered to be level 1. In the proposed model we are going to use level 4 of IoT which includes the integration of special technology such as cloud computing which allows the use of IoT devices up to a next level.

With cloud computing, people are able to access their resources from anywhere in the world, at any time as cloud providers are meant to provide services 24*7 to its users, with the help of users. Easy accessibility and security of data in cloud has made it the most emerging technology in recent times.

In the proposed technique, two sensors are used – temperature sensor and motion sensor. The temperature sensor will monitor the temperature of the infant in Celsius anytime, even when parents are not near them and will send notification to parents if the temperature goes above what is considered to be abnormal.

Similarly, the motion sensor will detect any motion of the baby that happens around it. It will detect the time when the motion happened and also when it ended. This sensor, hence can be installed in places that is considered dangerous.

Both the sensors can be connected to special microcontrollers which are available in the

market such as Arduino, Raspberry pie etc which allows us to program the sensors and make them work or behave as we want using different codes and algorithms.

The proposed system can also be installed inside cars where it will constantly monitor the temperature and motion of the infant and will keep the parents alert all the time, thus minimizing the cause of heat stroke or other accidents in infants due to temperature difference inside the car or some other unlikely incident.

A camera module is also used to monitor the infants by watching videos captured through it.

The parents or any other family member of the infant can access and analyze the data collected through all the modules used above by logging in to an application created for the particular system.

An Wi-Fi module is also used to connect all the devices to the internet so that the data collected through them can be pushed into cloud in a database where it can be analyzed and accordingly can be accessed by the users.

The entire system can be integrated with cloud using various tools, APIs and the internet.

II. OBJECTIVES

1. To develop a better infant monitoring system using various IOT devices
2. To develop a portable monitoring tool for parents to monitor their infant from any place using cloud technology
3. To develop a secure interface to the monitoring system so that only the authorized and deserved person have access to all the data to monitor the infant by using an authentication mechanism.
4. To provide an efficient monitoring system for

parents so that they get every notifications in detail

III. PROBLEMS WITH EXISTING SYSTEMS

1. Manual or traditional monitoring systems takes more time to realize the problems faced by the infant
2. Systems are not portable.
3. Data collected from the sensors are not analyzed

IV. LITERATURE REVIEW

[1] In this paper the author quoted that the current research on the development of infant monitoring system focuses on portability and compactness.

[2] This paper suggests ways to develop wearable monitoring systems for infant's which can be integrated with the baby's clothes or shoes and hence the system can be used at home to keep track of baby's health without going to hospitals every time

[3] In this paper the author proposes a model which uses parameters like infant's heart beat and body position to build a system to detect and prevent SIDs among infant's

[4] In this paper the author proposes a model based on Arduino which uses GSM module to build an efficient infant monitoring systems

V. PROBLEM STATEMENT

Many children die unknowingly due to unpredictable heat stroke, illness or accidents because of mechanical and environmental factors.

Without proper detection and alert system, it is difficult to be aware of the problems facing by the children, specially between the age of 0-3 years, as they cannot convey anything to anyone even when they are facing any discomfort. As majority of parents, also nowadays, have started leaving their kids alone because of some important reasons such as jobs etc, they cannot be with the kid all the time. During their absence, the care takers or other person around them might not also be conscious enough to detect difficulties faced by the children at the earliest.

VI. SOLUTION

The proposed system aims to overcome the limitation present in the existing system. In this model, the parents or the users of the system is logged in to an application first using a secure authentication mechanism. After getting access to the application the users can monitor the movement as well as health of the infant wirelessly from anywhere.

Various sensors such as motion and temperature sensors are used to monitor the baby from all aspects

The system is also designed to be a low cost tool so that every parents can use it to monitor their baby. Because of cloud integration, the system offers greater mobility, allowing users to access the system using mobile applications from anywhere.

Hence, the proposed system can prove to be more portable and efficient, where user can receive alerts based on analyzed data collected from various sensors used in the model and stored in cloud. Live video

capturing of the infant using camera module will help user to get real time video monitoring of the infant.

Users can also access previous alert notifications and the data collected by sensors later as the data will always be stored and protected in cloud via internet.

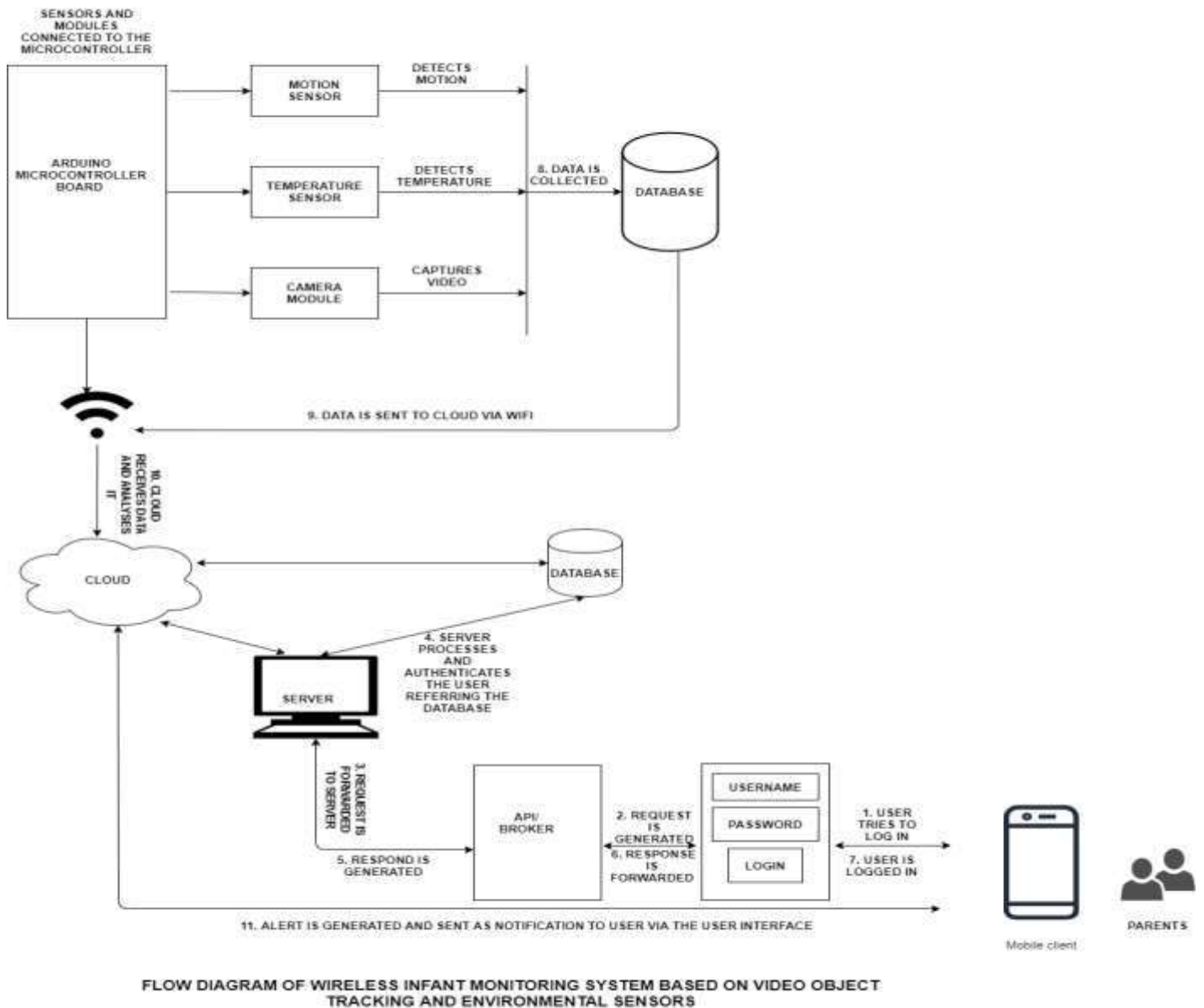


Figure 1 : System Architecture

6.1 WORKING

- Parents can log into an application designed specifically to receive alerts from the system using their credentials.
- Secure authentication mechanism is used to ensure that only the authorized person should get all the details of the baby.
- Whenever the baby is around, the temperature and motion is detected . The

data is collected and pushed into a database in cloud

- The Camera module will also capture video and will upload it in cloud database.
- Data collected from the sensors is analyzed and stored in cloud using various data analysis algorithms.
- When any abnormality is detected, an alert notification is sent to the authorized users



through the application used as an user interface.

- All the sensors used in the system can be programmed using Arduino board , to which all the sensors will be connected,
- The Wi-Fi module will help connect the device with internet , making the whole system portable and wireless.

VII.FUTURE ENHANCEMENTS

Sensors can be configured to capture and analyze infants steps , so as to determine their movement more efficiently using various machine learning techniques.

Various other sensors like pulse detection sensor, vibration sensor etc can be used to increase the number of metrics based on which a baby can be monitored.

VIII. CONCLUSION

- Use of an wireless infant monitoring system can enable saving of majority of infants from sudden deaths or illness .
- It can also help parents or medical experts to determine the causes of any abnormality of children by analyzing and studying the real time data captured by the system.
- The easy portability of the system can allow parents to be more cautious even when they are not near their baby.
- Use of application interface and authentication mechanism can also prevent unauthorized person from gaining access to the data.

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INTERNETWORKING OF SOLAR ENERGY USING ARDUINO BASED TRACKING SYSTEM

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ABSTRACT

Since the dawn of civilization, human beings have been using different energy sources in order to fulfil their various requirements. Energy is one of the human civilization's basic requirements for development. For example – electricity powers our household appliances like TV, air-conditioners, phones, washing machines etc. We also use energy to run vehicles like cars, buses and trains and it is used to run most industries and factories. Most of these energy sources are non-renewable in nature, and might get depleted soon, such as the Oil and coal. This creates a requirement for renewable energy resources which has cheap costs. Solar energy is considered as one of the main energy resources in warm countries. Also solar energy is a clean, easily accessible and abundantly available alternative energy source in nature and has been used traditionally since ages in the absence of energy sources. Hence we require a system which will be able to efficiently utilize solar energy such as solar panels but these have some drawbacks as they don't rotate with the movement of the sun, hence the need arises for that of a solar tracker.

KEYWORDS- *IoT, Ldr, Servomotors, Solar Panel*

I. INTRODUCTION

Solar energy using photovoltaic cells has already been prevalent in our society but they did not take into account the difference of angle of incidence of the sun by providing the solar panels in a fixed orientation. Because in a fixed orientation the amount of energy collected is limited hence the utilization of energy will be limited. The efficiency of the solar panel can be increased by tracking and following the movement of the sun i.e. The photovoltaic cells must be perpendicular to the sun at all the time. The project discusses the development of two-axis solar-tracking developers using Arduino Uno as main controller the system and four light-dependent resistors (LDRs) have been used for sunlight detection and to get maximum light intensity. Two servo motors have been used to rotate the solar panel according to the sun's light source detected by the LDR and the microcontroller (Arduino Uno R3) is used to control the servo motor based on signals received from the LDRs.

II. OBJECTIVES

1. The system which will be able to efficiently utilize solar energy at the maximum level.
2. The proposed system will be able to increase efficiency of the solar panel by tracking and following the movement of the sun.

III. PROBLEMS WITH EXISTING SYSTEMS

1. Solar energy using photovoltaic cells have already been prevalent in our society but they did not take into account the difference of angle of incidence of the sun where the panels are fixed. Because in a fixed position the amount of energy collected is limited hence the utilization of energy will be limited.
2. A system is required which will be able to efficiently utilize solar energy. Solar panels as they don't rotate with the movement of the sun, tracking systems must be put in place to move



the panels throughout the day in order to keep them aligning with the sun. The longer they are aligned with the sun, the more energy they can produce.

IV. LITERATURE REVIEW

A solar cell is a device which converts light energy to electrical energy through photovoltaic effect. Solar cells are the building blocks of photovoltaic modules known as solar panels. In solar tracking system, the module's surface tracks the position of the sun automatically as the day runs by. The position of the sun varies as the sun moves across the sky. For a solar powered equipment to work best it must be placed near the sun and the solar tracker can increase the efficiency of that equipment at any fixed position. However, tracking with great effect can improve both the amount of total output power produced by a system and that produced during critical system demand periods.[1] Researches have been done to improve the energy production of solar panels. These researches include; double-sided panels, conversion stages improvement, building panels integration geometrically and so on. Maximum energy is produced by a solar PV panel when it is positioned at right angle to the sun.[2] For this reason, several researches developed different types of solar panel tracking systems. Therefore, the primary purpose of this work is to develop a solar panel tracker based on Arduino advances so as to enhance the energy production of solar panel.

V. PROBLEM STATEMENT

Since solar panels are fixed to a surface, so when the sun moves away from the position that is facing the solar panel, the power generated is less and loses the opportunity to generate maximum possible power all day long. This project's objective is to have a solar panel which provides its maximum possible power for the whole day, this will only happen when the panel tracks the sun continuously and rotates accordingly, to receive sunlight to the fullest extent always during the day time.

VI. SOLUTION

Photovoltaic panels or solar panels must be perpendicular with the sun in order to get maximum energy. The methodology employed in this work includes the implementation of an Arduino based solar tracking system. Light Dependent Resistors (LDRs) are used to sense the intensity of sunlight and hence the PV solar panel is adjusted accordingly to track maximum energy. The mechanism uses servo motor to control the movement of the solar panel. The microcontroller is used to control the servo motor based on signals received from the LDRs. The result of this work has shown that the tracking solar

panel produces more energy compared to a fixed panel.

VII. IMPLEMENTATION

7.1 Working

The LDRs serve as the sensors to detect the intensity of light entering the solar panels. The LDR then sends information to the Arduino microcontroller. After receiving the information the Arduino microcontroller will tell the servo motor to rotate in a particular direction to face the sun. The solar panel is attached to the servo motor. The microcontroller is attached to a power supply (laptop or battery)

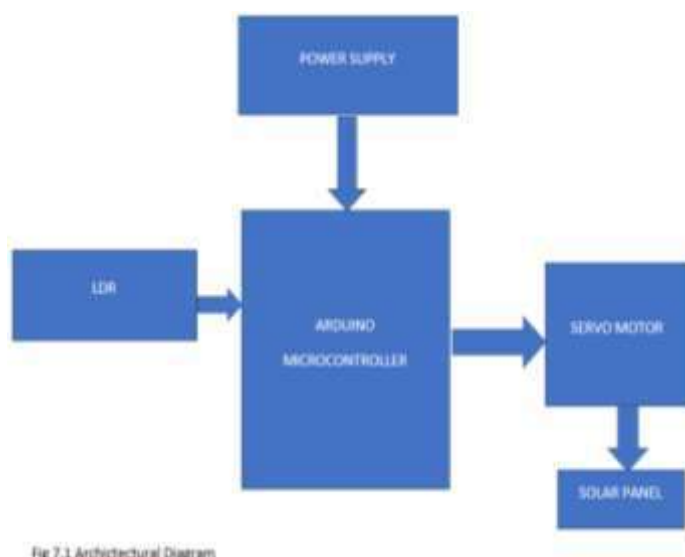


Fig 7.1 Architectural Diagram

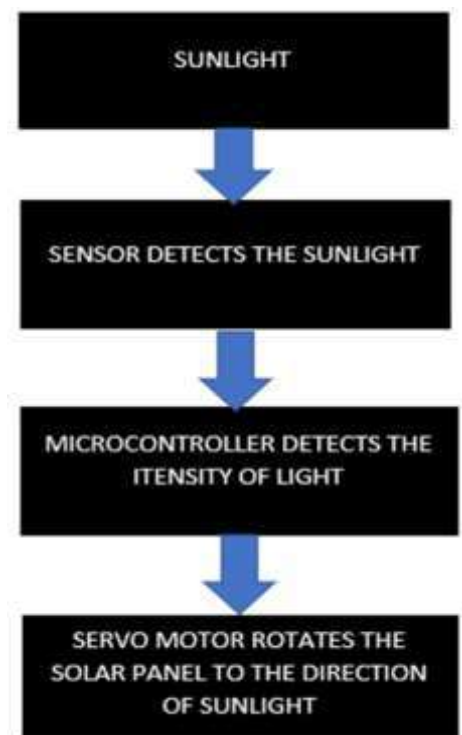


Fig: Flow Diagram

VIII. FUTURE ENHANCEMENTS

- A. More sensors and motors can be used to give better efficiency and accuracy.
- B. A temperature and humidity module(DHT11) can be implemented to get the correct temperature readings. The DHT11 is a commonly used Temperature and humidity sensor. The sensor comes with a dedicated NTC to measure temperature and an 8-bit microcontroller to output the values of temperature and humidity as serial data. The sensor is also factory calibrated and hence easy to interface with other microcontrollers.
- C. A RTC module is simply TIME and DATE remembering systems which have battery setup which in the absence of external power keeps the module running. This will help to keep the TIME and DATE up to date when it is implemented..
- D. The ESP8266 WiFi Module is a self-contained SOC with integrated TCP/IP protocol stack that can give any microcontroller access to our WiFi network, this can be implemented for connecting to the internet or cloud in order to store data of the solar panel. This module can be implemented in the future.
- E. Changes in the hardware structure can be made such as the structure that holds the panel.

IX. CONCLUSION

This proposed system is capable of checking and pursuing the intensity of sunlight and accordingly finding higher energy as a result of inconsiderate motion of the motor. The aim of this project is fulfilled with present time and resources. This presented work is also suitable for a big size of solar system. In coming days, any investor may apply extra capable sensors and more motors to move the panel according to their discretion. Again, this would improve the capability of the panel to provide more energy.

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PREDICTIVE ANALYSIS FOR LEUKEMIA SURVIVAL USING AI BOTS

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ABSTRACT

A Chatbot is an Artificial Intelligence (AI) software that conducts a conversation with users via text-based method without any human intervention at the server side. In this project we implemented only limited features like text-based chatting which is designed only for the people who are dealing with Leukemia. People can ask about anything and everything related to leukemia symptoms and the bot will provide the necessary precautions based on their queries. People can communicate with the chatbot which makes the computers closer to human-level understanding. The Chatbot collects the keywords and will start the conversation by asking queries to the users and provide the suggesting remedies.

KEYWORDS- Chatbot, Leukemia, Cancerbot.

I. INTRODUCTION

A Chabot is an assistance that individuals communicate with by means of a talk interface. You can pose inquiries utilizing your voice or by composing similarly you would ask an individual. The chatbot will as a rule react in a conversational style, and it might do activities because of your discussion (for model, request something for you). It regularly runs inside a mainstream informing application, for example, Facebook Errand person, Slack, or SMS. It addresses your inquiry, as opposed to guiding you to a site.

Over the last few years, Chatbots have played a very important role as a human-computer interfaces. Chatbots are usually consist of three modules: the user interface, an interpreter, and a knowledge base. Laven describes that chatbot as a program that challenges to imaginary typed conversation, with the aim of at least briefly misleading the human into intellectual while talking to another person. Chatbot is one of the best suitable technologies that industries can rely on, possibly substituting the old models and creating the apps and websites. A Chatbot (“Chatter Robot”) is a computer program that converts human dialogues in its usual methods including text or verbal language using artificial intelligence techniques such as Natural Language Processing (NLP), photos and audio-visual processing, and audio analysis. The best exciting feature of the bots is that they learn from the earlier communications and become intelligent and smoother over the time.

Created in 1995, ALICE was the best well-known chatbot of 20th century. Being stimulated by Elizz, it was able to chat with humans more efficiently owing to its experiential purposes. ALICE was also the encouragement for Apple’s personal assistant chatbot “Siri”. Apart from revolutionary improvements in computer science, ALICE was also the inspiration of many science fiction movies. The evolution in Chatbots came with the launch of Apple’s personal assistant Siri. Siri features aa a bright range of user commands, including performance phone actions, scheduling events, checking simple information, reminders, handling device settings, navigating areas, searching the Internet, finding information on entertainment, and is also able to engage with iOS-integrated applications. After the revolution brought by IBM’s Watson in terms of natural language processing, others also jumped in to the game. Amazon introduced Alexa & Google developed dialog agent known as Dialog Flow which offers natural language processing capabilities. Google’s agent provides single platform integration with Chabot frameworks of Facebook, Twitter, Skype, Cortana, Alexa, Slack and many more. 2 Chatbots works in two ways- rule based and smart machine based. Rule based chatbots deliver predefined answers from a data base, based on the keywords used for the search. However, smart machine based chatbots inherit its capabilities from Artificial Intelligence and Cognitive Computing and adjust their performance based on the customer communications. The most standard chatbot are various search engines for



bots, such as Chatbottle, Botlist and there is a bot for that, for example, helping developers to inform users about the launch of new talkbots. These sites also provide a ranking of bots by various limitations the number of votes, user statistics, platforms, categories (travel, productivity, social interaction, e-commerce, entertainment, news, etc.). They feature more than three and a half thousand bots for Facebook Messenger, Slack, Skype and Kik.

With online life entrance and web network ready to increment joined by propels in common language handling and man-made reasoning, chatbots are relied upon to overwhelm the market. For a designer it is critical to comprehend what the chatbot will offer and what classification the chatbot falls into. This would help pick the calculations or stages and instruments to use to fabricate the bot. It additionally helps the end-clients comprehend what's in store. Here we talk about the sorts of chatbots, the apparatuses and calculations that can be utilized for various kinds of chatbots and give a general engineering that can be followed while building bots. We likewise address the territories where in chatbots are missing and recognize the exploration regions consequently requiring consideration.

Leukemia are caused due to immature growth of blood cells in the bone marrow and leads to improper functioning of body which weakens the immune system.

According to survey of World Health Organization (WHO), depression is becoming one of the most challenging phases for the people who are dealing with health issues. Communication will help the people to improve one's mental stability. To help the people and to solve the queries of the people we are introducing a chatbot. People can communicate with the chatbot which makes the computers closer to human-level understanding. The Chabot collects the keywords and will start the conversation by asking queries to the users and provide the suggesting remedies.

A Chabot is an Artificial Intelligence (AI) software that conducts a conversation with users via text-based method without any human intervention at the server side. In this project we implemented only limited features like text-based chatting which is designed only for the people who are dealing with Leukemia.

II. LITERATURE REVIEW

[1] In this paper author proposed a model that overcomes the patients doubt regarding the questions related to cancer. It explained Most cancers chatbot could have a greater great have an effect on the existence of most cancers patients and might assist them to clarify their doubt concerning most cancers. Unlike present chatbots which centered on various domains of healthcare apart from most cancers, this chatbot centered most effective on cancer. Via an interactive session with this most cancers bot, it's far possible for the sufferers to obtain applicable information regarding cancer. This is the first-rate solution for those who are busy with their job schedules. They do not want to attend inside the queue for hours to get an appointment with a health practitioner

whenever as a substitute they could chat with the bot. According to survey of World Health Organization (WHO), depression is becoming one of the most challenging phases for the people who are dealing with health issues. Communication will help the people to improve one's mental stability.

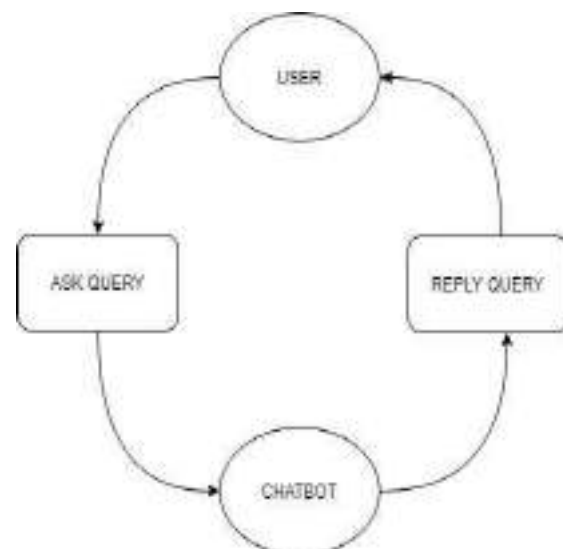
[2] In this paper the author proposed a chatbot for breast cancer where the users interacted with the bot to gain information about the breast cancer. The author conducted a study where they tried to analyze the user's emotional intelligence when they communicate with the bot and based on its users got suggestions from the bot and did one-year research to know this can improve the adherence medication rate of the patients.

III. PROBLEM STATEMENT

To get doctor's assistance for basic information about illness is not a feasible method because of money constraint, what if the hospital is located in far locations from the patient's home or unavailable of doctor on time due to busy scheduling. Any proposed method that overcomes the above-mentioned scenarios which reduces the bridge between doctor and patient will be a helpful one.

IV. DESIGN

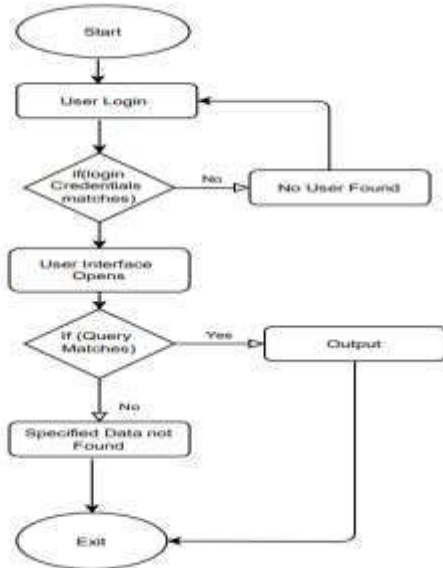
A Chatbot denotes to a conversation bot. It is a communication pretending computer program. It is all about the discussion with the user. The conversation with a Chatbot is very easy. Its responses to the queries asked by the user. The conversation with the user and the chatbot is very important. The design of chatbot indicates as follows:



Design of chatbot

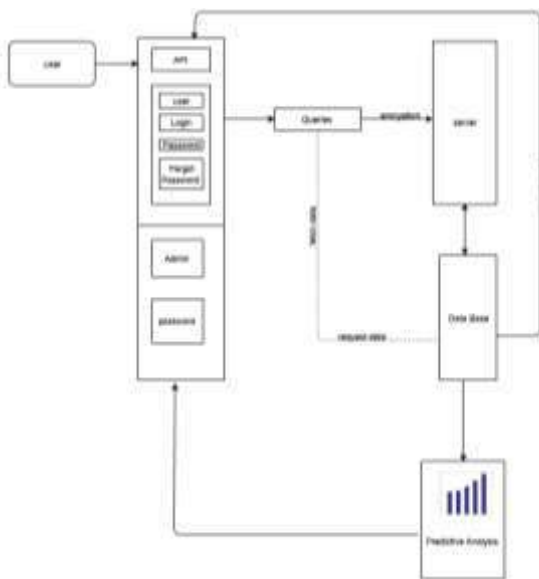


V. FLOW CHART



Chatbot replies a way it is known to the user. It follows basic English language which will be easy for the user to understand. The conversation between bot and user will be like communicating with each other. The user will login through the interface and it opens the bot where the user information will get stored in the database. The user will give query the bot then it will analyses the user request and send the respond to the user if the query is found the bot will display the output otherwise it will display the specified data is not found.

VI. ARCHITECTURE



The user will enter the credentials in UI which allows the user to interact with the bot. The user will ask the queries to the bot related to the leukemia the bot will search for the query in the database then displays the corresponding answer based on the user inquiry and from the database it will display the graph based on the user queries.

VII. RESULT AND CONCLUSION

The main objectives of the project were to develop an algorithm that will be used to identify answers related to user submitted questions. Chatbots are keen associates with man-made consciousness are drastically evolving organizations. There is a wide scope of chatbot building stages that are accessible for different endeavors, for example, internet business, retail, banking, relaxation, travel, human services, etc.

This project explains about the implemented chatbot is a rule based one where the users rely on the list of questions and the corresponding answers. Users can be used to get the required information about Leukemia and that will help the people to understand the symptoms of that particular cancer it will help them guide their closed ones. This Chatbot will save the time of the people if the respected doctor is living far from the place where they live.

VIII. FUTURE ENHANCEMENT

Voice recognition and speech recognition can be added which will help the users to clarify their doubts and can also incorporate speech we must install multiple languages so that the bot can respond in the language the user wants to speak. Can create a better interface where hand gestures can be added for the bot which will make the users feel they are talking to the human instead of bots.

Developing NLO technology for automated calls will also help the users to use the chatbot during critical situations.

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THE FEATURE OF PRAGMATICS AND THE PRAGMATIC ANALYSIS IN CONTEXT

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DISCUSSION

Pragmatics is the study of how language is used in particular situations to express a meaning or attitude that may not be obvious from the actual words. The person who aimed to learn the subject of pragmatics, was Klaus. According to him "Pragmatics is learning psychological as well as sociological side of linguistic character". Pragmatic linguistic was formed as an independent branch of linguistics in 60th and 70th years. The conference which was called pragmatics of natural languages was held in 1970. According to it, the expression plays an important role in pragmatic analysis. Conference was told the feature of thesauruses in pragmatic analysis. For instance; the word 'love'. People can express it by the word "kiss", or the heart which is drawn to the paper or saying "I love you". All of these samples express the word "love". But it differs from each other by expression. The power of expressive is different. Psychologists noted that the principles of assimilation play a vital role. Pragmatics is the study of relationship between word and uses of the word. For example, "I have got a new boat and now I have a specific picture of boat and you have different one in your mind. It is related to interpretation and utterances. According to George Yuli express pragmatics along four detail detentions.

Pragmatics is concerned with the study of meaning as communicated by a speaker and interpreted by listener. It has, consequently, more to do with the analysis of what people mean by utterances than what the words or phrases in those

utterances might mean by themselves. Pragmatics is the study of speaker meaning. First of all, This type of study necessarily involves the interpretation of what people mean in specific context and how the context influences what is said. For example, You are at my place and I ask you could bring me a glass of water? So the utterances are not fitting the context. You can see how the context influences the meaning :

-Hi, How are you?

-Lovely weather today. So You can see it is grammatically correct, but it does not fit context and the situation. It requires a consideration of how speakers organize what they want to say in accordance with who they're talking to, where, when, and under what circumstances, Pragmatics is the study of contextual meaning.

Second of the dimensions is this approach also necessarily explores how listeners can make inferences about what is said in order to arrive at an interpretation of the speaker's intended meaning. This type of study explores how a greater deal of what is unsaid is recognized as part of what is communicated. We might say that is investigation of invisible meaning. Pragmatics is the study of how meaning more gets communicated than is said, which means that you as a listener have to investigate the invisible meaning. For instance,

-Please, close the window! The invisible meaning, person asks that the person is freezing. That room is too noisy outside depending on the situation. So, for example if I hear noise of outside, the utterance "please, close the window. The



invisible meaning which is not being spoken is that is too noisy.

Last dimension is the perspective then raises the question of what determines the choice between the said and the unsaid. The basic answer is tried to the notion of distance. Closeness, whether it is physical, social, or conceptual, implies shared experience. On the assumption of how close, or distant the listener is, speakers determine how much needs to be said. Pragmatics is the study of the expression of relative distance. Physical closeness would be "take this!" The only person close the speaker know what this refers to and Social closeness can be found between friend. For sample, If I tell you we had fun at the weekend. You would know that last weekend and that you know which friends of mine I meant by we. One traditional distinction in language analysis contrasts pragmatics with syntax and semantics. Syntax is the study of relationships between linguistic forms, how they are arranged in sequence, and which sequences are well-formed. Semantics is the study of the relationships between linguistic forms and entities in the world; that is, how words literally connect to things. Semantic analysis also try to establish the relationships between verbal descriptions. Pragmatics is the study of relationships between linguistic forms and the users of those forms. In this three-part of distinction, only pragmatics allows humans into the analysis. The advantage of studying language via pragmatics is that one can talk about people's intended meaning, their assumptions, their purposes or goals, and the kinds of actions that they are performing when they speak. The pragmatic analysis is showed in the following popular work "Gone with the wind" of an American writer Margaret. "ELLEN O'HARA was thirty-two years old, and, according to the standards of her day, she was a middle-aged woman, one who had borne six children and buried three. She was a tall woman, standing a head higher than her fiery little husband, but she moved with such quiet grace in her swaying hoops that the height attracted no attention to itself. Her neck, rising from the black taffeta sheath of her basque, was creamy-skinned, rounded and slender, and it seemed always tilted slightly backward by the weight of her luxuriant hair in its net at the back of her head. From her French mother, whose parents had fled Haiti in the Revolution of 1791, had come her slanting dark eyes, shadowed by inky lashes, and her black hair; and from her father, a soldier of Napoleon, she had her long straight nose and her square-cut jaw that was softened by the gentle curving of her cheeks. But only from life could Ellen's face have acquired its look of pride that had no haughtiness, its graciousness, its melancholy and its utter lack of

humor.[5,27]"According to context, the writer depicted the hero "ELLEN O'HARA" for writer in order to understand who is "ELLEN O'HARA. The play writer is giving description about her appearance, family members, quality of her to be clarify for readers. According to the semantic of this context, the woman appears in the imagine of reader because of the expression. The locutionary act is effecting to improve the language of work. The roles of diexes are important also. We can face also several thesauruses in the context. For instance, the name of hero "ELLEN O'HARA" is given for us because of being unknown for us in the first time. In the second time instead of "ELLEN O'HARA", the personal pronoun is given. Because it is clearly for us in the second time. Why the author used other thesauruses like "her". Because the description firstly given, it is directing the hero for us. The context has also other thesauruses like "father", and "a soldier of Napoleon". If the author does not use synonyms, the quality of the work would be low for readers. The word "father" is utilized, because "ELLEN O'HARA" is the girl of him. But the play writer think him unknown for readers, so description for her father is given the context as "a soldier of Napoleon". If the play writer does not give expression of him, the semantic of father would be unclear for readers, the readers had no idea for the semantic of the word "father"

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ABOUT SOME ISSUES OF TRAINING PROFESSIONALS FOR THE DIGITAL ECONOMY

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ABSTRACT

In this article, summarizing numerous approaches of defining the concept of the digital economy, the author suggests considering the digital economy as a result of the evolution of society, its technical and scientific progress. The analysis of the state of digitalization of the economy has shown that all the processes of informatization of society do not only affect technological problems, but also organizational, legal, managerial, and educational ones. Based on the functioning conditions of the digital economy, the author considers a number of topical issues of future economic development and training professional personnel in the higher educational system of the Republic of Uzbekistan. The author suggests some strategies for further active improvement of the digital economy by creating new directions in the system of higher educational institutions.

KEYWORDS: *digital economy, digital information environment, digital competence model, higher educational system, network information educational environment.*

INTRODUCTION

In the modern economy, the system of higher professional education is one of the key and most promising platforms for the global competition of States for economic power and political influence in the XXI century. To compete in the new knowledge economy, the Republic of Uzbekistan must dramatically increase the share of highly qualified people in the labor market.

According to the world economic forum, digitalization would carry huge potential for business and society over the next decade and could bring in more than \$30 trillion in additional revenue. In General, the contribution of the global economy of digitalization of all spheres of activities are estimated at \$100 trillion until 2025 [1,2].

LITERATURE REVIEW

The sphere of digital economy in the system of professional education is quite recent for science. In existing research, we can note a significant preponderance in the direction of studying the practical aspects of its implementation, which creates certain restrictions on the depth of its theoretical

study. Many experts believe that all Informatization processes are only technological and do not affect organizational, legal, managerial, or educational problems. The problem of widespread introduction of information and communication technologies in industries and spheres is covered by the works of many scientists.

These are the works of such scientists as A.V. Bogoviz (2018) [3], N. Chakpitak (2018) [4], H. Goldstein (2017) [5], G. Gupta (2019) [6], C. P. Martin-Shields (2017) [7], M. Pilik (2017) [8], K. H. Tan (2017) [9], I. C. Tsai (2018) [10], B. A. Begalov, I. E. Zhukovskaya (2016)[11], O. I. Popova (2018) [12], A.V. Konon (2019) [13], A. I. Chuchalin (2018) [14] and others.

RESEARCH METHODOLOGY

The methodological basis of the research consists of dialectical method, system and synergetic approach, methods of logical and comparative analysis, synthesis, grouping and generalization, expert assessments, methods of the observation, the analogy and the quantitative analysis, the analytical and predictive methods.



ANALYSIS AND RESULTS

According to the research of the Center for economic research and reform national labor market and human capital, the only way for the country to keep it competitive in the global economy — to carry out the scenario ahead of modernization is a qualitative change in the labor market and increase the share of highly skilled professionals.

Of course, higher education is the fundamental human right and the main driving force for human development. It creates opportunities to improve people's lives by providing them with knowledge and skills, so that people in adverse socio-economic conditions will eventually be able to get out of poverty on their own [15].

A new impetus to radically improve the scope, a radical revision of the content of training at the level of international standards, and to ensure execution of the Strategy five priority directions of the development of the Republic of Uzbekistan in the years 2017-2021, effective and timely implementation of tasks defined in the Message of the President of the Republic of Uzbekistan to Oliy Majlis on January 24, 2020 [16], joint sessions and organizational meetings of the chambers of Parliament approved the **State program for the implementation of the action Strategy for the five priority areas of development of the Republic of Uzbekistan in 2017-2021 the "Year of development of science, education and the digital economy"** [17].

In addition, in order to radically revise the content of training in accordance with the priorities of socio-economic development of the country, creating the necessary conditions for training of

specialists with higher education on international standards the decision of the President of the Republic of Uzbekistan from April 20, 2017 PP-2909 "On measures for further development of the system of higher education" [18].

According to the decree approved the Program of complex development of the higher education system for the period 2017 — 2021 quality and radically improving the level of higher education, strengthening and modernizing the material-technical base of higher educational institutions, provide modern teaching and research laboratories, information and communication technologies.

However, despite the significant achievements that Uzbekistan managed to achieve in this area in recent years, international competition puts the country in the field of higher education absolutely new tasks, which allow you want the country to remain a full, independent and respected member of the world community by mid-century.

Generalizing numerous approaches to the definition of the concept [5-14], the author suggests considering the digital economy because of the evolution of society, its technical and scientific progress. The digital economy exists and develops simultaneously with the types of economies known to science, because it does not replace the existing system of economic relations, but rather complements and modernizes it. In this regard, we will present some characteristic features of the digital economy in table 1.

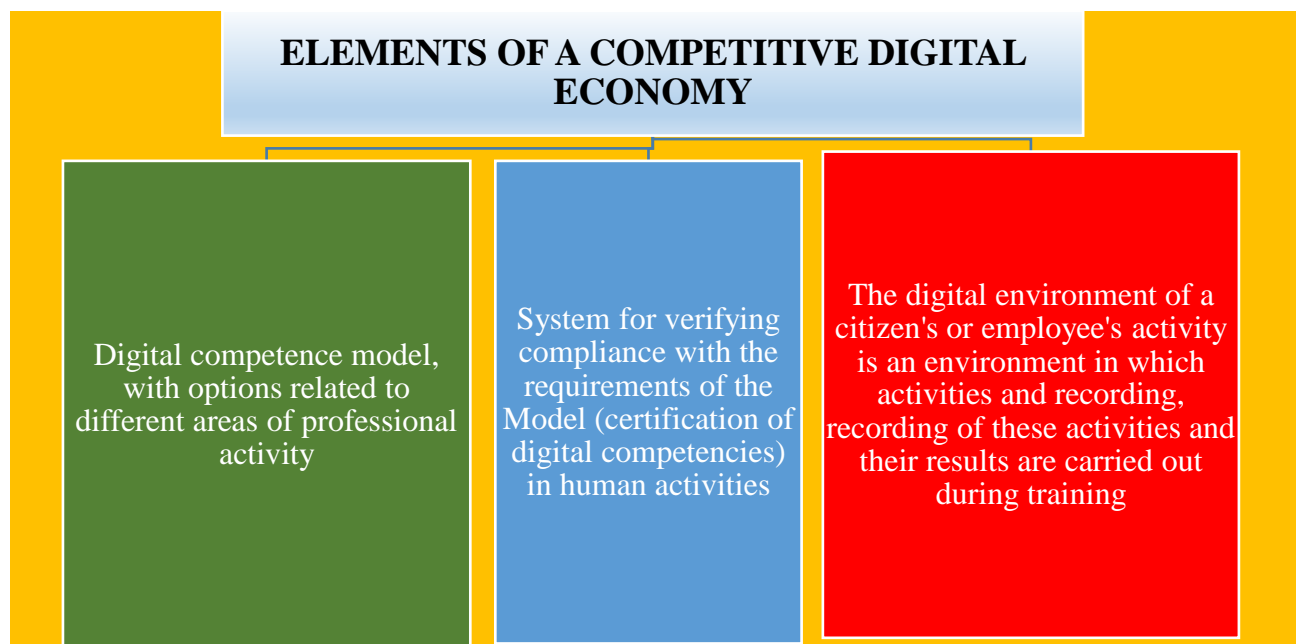


Table 1-Characteristics of the digital economy

Characteristics	Manifestation
Special - intangible form of sale	Conditionally, the digital economy is based on "indirectly" existing relationships, which are only possible in the form of electronic exchange of digitized data.
Special Tools	Complete and inseparable dependence of economic relations on telecommunications networks and computer technology, which distances the digital economy from the real (or traditional) economy. If telecommunications networks and computer technology are excluded from the relationship, the digital economy becomes impossible.
Unprecedentedly high speed of operations	This is true for both individual operations and the economic activities of entities as a whole. This factor is intended to have a favorable impact on the pace of development of virtual economic relations, but it can also serve as an aggravating circumstance in the event of crises. Lightning-fast connections can collapse with the same speed, causing a chain reaction ("Domino effect").
The appearance of not similar types of goods, services, and money	Their existence is possible only in digital (electronic) form. Examples of this are e-Commerce, the production of virtual (or digital) goods, and making payments using electronic money.

The described features of the digital economy serve as an impulse for further development of society, namely: the non-material form of the economy, implemented through specialized technical devices, requires the creation of an appropriate protection system that ensures the safe implementation of economic activities. All of the

above requires transformation of forms and methods of regulation and control of new economic relations, as well as the formation of new models of economic, social and political organization of society. Based on the above, we will present the necessary elements of a competitive digital economy in picture 1.



Pic. 1. Elements of a competitive digital economy.



Knowledge of information technologies and even the basic models of their application is not enough for the effective activity of a citizen and a competent specialist in the digital economy system, in the XXI century. Critical and creative thinking,

initiative and responsibility, adaptability, innovation, entrepreneurship, and emotional intelligence are also required [19, 20].

You can conditionally group these competencies into 3 blocks (Pic.2).



Pic. 2. Competencies required in the digital economy

The digital economy provides, in particular, for improving the quality of life, reducing human costs of life support, optimizing educational routes for citizens with disabilities, and using their human potential as a positive element of the digital economy.

Currently, the labor market is being intensively transformed with the development of the digital economy. Scientific and technological changes in recent years pose a big and difficult task for modern professionals-the constant development of their own professional competencies, even after receiving a diploma of higher or special education. It is too early to say that automation of production, analytics and other services leads to the replacement of people by machines – now, only 5% of modern labor positions are subject to automation. At the peak of relevance is the question of human interaction skills with complex computer systems. If engineers will not be a revelation all the rising demand for skills in the use of "smart" systems, the humanists feel digital transformation in full: not considered as

competitive an economist, not skilled in an analysis of large data sets, or attorney, not using digital Arsenal "legal tech". Thus, the labor market creates a demand for a new generation of specialists who use digital systems as the main tool of everyday work.

Every year changes occur faster and less time is required for the penetration of new technologies. It is important to understand that the labor market is extremely interested in preserving not jobs, but in preserving specialists who will take up new jobs created by digitalization.

The activation of the digital economy implies the creation of new directions in the system of higher educational institutions in the future.

First, the formation of new professions directly depends on the importance of certain innovative technologies for the market. For example, there is an obvious demand for engineers and programmers who create and maintain real-time data analysis systems, the industrial Internet, and other technologies of the fourth industrial revolution. In the social sphere, it is obvious to rely on big data



analysts who can serve the needs of economists, financiers, marketers and managers.

It is obvious that in the digital economy all modern competencies revolve around the skills of working with information. This means that any new way of extracting, transmitting, processing, and interpreting information will generate new professions that are in high demand on the labor market.

Secondly, such changes do not only concern professionals directly involved in the innovative and high-tech process. Therefore, there is a request for lawyers in the field of digital intellectual property, consultants on digital document management. Among economists, financiers, sociologists and political scientists, there are specialists working with big data and advanced analytics.

The penetration of traditional information technology competencies into all areas of professional activity results in new trends. Therefore, the term "*digital humanities*" is gaining popularity now, meaning the use of complex digital technologies in the humanities (historians, philologists, and sculptors).

Let us look at some of the main trends in education that are dictated by the digital economy.

Education systems face a serious challenge in training people who have the skills to take up worthy positions in the modern labor market. Leading universities operate in a competitive environment, and therefore act ahead of the curve. Thus, humanities universities enter into a network partnership with technical universities, allowing them to educate a new generation of "humanitarians" with "*hard skills*" and teach with "*soft skills*", which were previously difficult to imagine. At the same time, education is particularly transferred to online – the rapid development of open online courses and cloud-based educational platforms have attracted universities to the digital space.

Most likely, in the near future we will face the "duplication" of universities – the presence of the usual "physical" university and its "digital counterpart" in the online space, which can both work together and offer their own educational programs.

Of course, in order to keep up with digitalization, a set of new competencies and skills is required. It becomes relevant that the employee has the skills and knowledge required for both an engineer and an economist. This is important in order not only to understand the essence of the production process and how it is simplified thanks to technology, but also to be able to manage this process and to know how to assess the effect of digitalization [21, 22].

How well are national higher education institutions adapted to the current challenges of the digital economy?

In the educational sphere, digitalization involves the following interrelated directions: the formation of the image of the graduate, educational standards, programs, evaluation systems, educational content, methods and methods of educational activity at all levels of education and throughout the entire structure of the educational process [23].

Frankly, education can never keep up with the latest trends. And the very essence of higher education is not to "pump up" students with strictly technical, applied skills, but to form fundamental professional qualities, which in turn are very slowly undergoing changes. At the same time, the market requires the release of "ready-made" specialists who can join in the workflow immediately after graduation [13, 24].

Given this dual and complex nature, HEI should look for new ways to implement educational programs.

Each of the modern universities tries to be a mirror of the industry for which it trains personnel. Moreover, if there is a clear trend towards digitalization in the industry, this cannot but affect the approach to training. Today, a number of universities are creating working groups to improve the digital literacy of students and teachers. Some universities go further and develop educational master's programs, participate in the creation of online courses and manuals [25, 26].

First of all, university leaders should understand that digitalization of the educational process is not another fashion trend, but a real technological revolution, like the creation of a steam engine or telephone communication. Trend pioneers will win the most, followers will be able to survive in a competitive race, and agnostics will find themselves on the sidelines of progress and outside the market.

For a modern specialist, the most important thing is not a specific set of skills, but the ability to understand and anticipate trends in their professional activities. We live in the era of *lifelong learning*, and every practical skill can be mastered by a person at any time of life, sometimes even without breaking away from production. However, only HEU can provide something that will remain beyond the limits of computer capabilities for a long time, and perhaps always – a creative approach to any modern challenge, whether it is a managerial decision-making or a subtle diplomatic game [27].



CONCLUSION

Thus, the study showed that the total digitalization and introduction of information and communication technologies is a natural and legitimate process, the digitalization of the economy is a global process that does not depend on the economic, political, social and other difficulties of each country. Its influence requires certain changes in any country. The success of digitalization of the economy of Uzbekistan will depend entirely on the availability of qualified specialists and a radical change in the mentality of society. At the same time, it will be necessary to adapt the sphere of higher professional education to the requirements of the digital economy.

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APPLICATION OF GENERALIZABILITY THEORY IN RELIABILITY ASSESSMENT OF CHEMISTRY ESSAY ACHIEVEMENT TEST

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ABSTRACT

The study used generalizability theory (GT) to estimate the reliability of the West African Senior School Certificate Examination in Chemistry essay questions conducted in May/June 2018. It was guided by two research questions. The study adopted a two –facet fully crossed random design (S x I x R) using a sample of 74 senior secondary three chemistry students in Obio/Akpor Local Government Area of Rivers State, Nigeria. A two-stage sampling method via simple random technique by balloting at stage one and then non-proportionate stratified random sampling and accidental/convenience sampling at stage two, were used to obtain the required sample. Data were collected using an adopted instrument tagged WASSCE Chemistry paper 2 question conducted by West African Examination Council in May/June, 2018. It is made up of two sections, section A has only one item for all candidates while section B has four items, for Nigerians, so in all it has five questions/ items. Data obtained were analysed using factorial analysis of variance by VARCOMP procedure, via univariate model. The results obtained indicated that multiple sources of error include students, items, raters, interaction effects between students and items (SI), students and raters (SR), items and raters IR and students, items and raters SIR. However, the largest component of error resulted from SI followed by SIR, item, raters, SR and then IR. Based on the findings, it was recommended among all that information obtained from WASSCE chemistry paper 2 conducted in may/June 2018 should be depend on. Again that generalizability theory should be used in determining the reliability of any given measure due to its ability to disentangle multiple sources of error.

INTRODUCTION

Chemistry is a central scientific subject that deals with the study of matter, its composition and interaction with the world. It is widely used in almost every facets of life such as food, clothing, health, shelter, career development, industries and technological aspect of the societal development. For instance chemistry is a subject that is related to many scientific disciplines such as engineering, pharmacy,

medicine, agriculture laboratory scientist, biochemistry and even, teaching, technologists, nutritionists and so on. Based on all these, the importance of chemistry in life and societal developments cannot be overemphasized. Since it is glaring that everything on earth depends so much on chemistry thus, chemistry helps in our day to day decision that affects our lives.

To actually gain all the benefits in chemistry there must be higher level of chemistry achievement



among students in the post primary schools. Achievements in chemistry among students in the post primary schools determines the quantity and quality of those who will further their education in studying chemistry and its related disciplines as earlier mentioned. The achievement of students in chemistry is determined by their raw scores in the subject after assessment.

In assessing students' achievement in chemistry different tools are employed. These tools could be oral test, work-sample test and sometimes paper and pencil tests which may take different item formats such as objective and essay item formats. It is observed that some examining bodies such as West African Examination Council (WAEC) used work sample test (practical in chemistry, and a combination of objective and essay questions, to achieve adequate assessment of the students/candidates skills. This is because the limitation of one item format say objective may be covered by the inclusion of essay item format. However in this study only the essay questions conducted by WAEC to assessed students' chemistry achievement in 2018 was considered.

Essay questions help to develop critical and logical thinking among students (Orluwene, 2012). They are questions used to assess the students' ability to organize and present their ideas in a logical and coherent manner. Through essay questions students can demonstrate their initiative and the originality of their thoughts and so on.

On the other hand, as it is said every coin has two sides, essay test despite its merits as earlier stated have the problem on unreliable scoring whether intra, inter-rater or on repeated measurement. This is because it is polytomously scored and students' scores are affected by the attitude of the scorer (Orluwene, 2012). On this basis different raters can come up with different scores if given opportunity to rate the students' responses independently. Sometimes the same rater can also grade the same question differently at two or more different occasions. As Anatol and Hariharan (2009) rightly stated that, the grading of essay question is challenged by subjectivity, Halo-effect and uneven variability. Coffman in Gugiu, Gugiu and Baldus (2012) stated that the variations in the scores of students may depend on the employment of different rating standards by different raters, different criteria employed for rating responses by the same rater at different occasions or by different raters independently.

In another dimension Brown (2010) reported that factors like gender, students name, how responses are organized and presented and the language used in

the write-up may also influenced the variation in students' scores. In addition, difficulty levels of the essay questions may also contribute to the variation in students scores rated by different raters independently or the same rater at different occasions.

Anatol and Hariharan (2009) reported that several studies that investigated the reliability of the students' scores in essay questions rated by multiple raters indicated that reliability coefficient obtained ranged from very low to fairly high. To support the above assertion, Gugiu et al (2012) stated that the problem of low reliability of essay questions dates back to 1930 when the reliability coefficients that ranged from 0.25 to 0.51 were obtained from an instrument that 61 teachers graded within 11 weeks independently. The one graded by five instructors yielded the coefficient range of -0.41 to 0.85; for 16 instructors the coefficient range of 0.42 to 0.91 was obtained.

In all, it is presumed that, it is difficult to obtain reliable scores from the ratings on essay questions mostly when CTT is applied mean while the scores of the students in the test whether objective or essay tests represents the results obtained from assessment, which is used for prediction selection, certification, classification, placement and evaluation decisions (Orluwene, 2012). In other words, test results are useful for decision making, so for authentic decision to be made, the tests used to obtain the data that guided the decision making must be of good quality or possess good psychometric properties. Psychometric properties of a test provide good and sound information about the meaningfulness and usefulness of the test and its result. The psychometric properties of a test include validities, reliabilities, item's difficulty, discrimination and distracter levels. However, among all the psychometric properties mentioned, the present study focused on the reliability of the West African Senior School Certificate Examination in chemistry essay questions conducted in the year 2018.

Reliability of a test also known as the dependability of a test is the authentic means of generalising the correctness of students observed score on a given test to the universe score that those students would have received under different forms of a test, (equivalent forms) different testing conditions (test-retest) different raters (inter-rater) and internal consistency etc. Dependability is the accuracy of generalizing from a person's observed score on a test or other measures to the average score that students would have received over all possible testing conditions.



It entails the quantification of how a given test is consistent or inconsistent in reproducing students' observed scores in a repeated measurement (Brennan, 2011). Reliability is the extent to which a measure yields consistent results (Ary, Jacobs & Razavieh, 2002). To Anastasi and Urbina (2006:98) reliability is the consistency of scores obtained by the same person when re-examined with the same test on different occasions or with different sets of equivalent items or under other variable examining conditions. To this end, the researchers viewed reliability as the extent to which students scores are nearly the same or unchanged on repeated measurement or equivalent measures.

Reliability is one of the principal qualities of a test. It determines the level to which the decision made based on the data collected from a measure is authentic. In other words it determines the level of confidence the test users will have on the test and its results. Orluwene, (2012) asserted that an unreliable measure of a variable will not provide an accurate indication of the individual's level in that variable. This concur with Elliot, Kratochwill, Cook and Travers (2000:432) assertion that unless a test is reasonably consistent on different occasions or with different samples of the same behaviour, one can have very little or no confidence in its results. On the other hand an assessment that provides inconsistent results cannot be depended upon to provide information useful for authentic decision making. In all, if confidence is to be placed on the data obtained from any test, the results obtained from it must be highly consistent regardless of the method for quantifying the reliability of that test.

In recognition to the role of reliable instruments to decision making, the desire to design assessments, examination and tests that are free from measurement error became a big concern to most test users such as classroom teachers, examining bodies and recruitment personnel's (Rust, 2007). In justifying the credibility of the decision to be made or made, obtaining high level of assurance on the data or results from the test, the test developer employed different approaches of assessing the reliability of the test. These approaches are Classical Test Theory (CTT), Generalizability Theory (GT) and Item Response Theory (IRT) (Schuwirth & Vleuten, 2011). Classical test theory is the oldest and most used theories in establishing reliability and other qualities of a test. It is centred on the assumption that an individual's observed score is a component of true score and error score (i.e. $O_s = T_s + E_s$).

The true score represents the score a student obtained as a result of his/her ability while the error score is the score obtained as a result of any condition

that is irrelevant to the purpose of the test. In classical test theory, the multiple sources of errors are not distinguished so measurement error is regarded as the undifferentiated random variation. Based on this, an individual's true indication of his/her ability in a given test may not be accurately known. The error component for items may reflect differential item difficulties or easiness while component for occasion reflects the different periods in which the test was administered to the students. The component for test forms reflects the difference in the composition of two or more different forms of test administered to students. Sometimes an observed score may have higher or more components of the error score than the true score, as such, decision that will be made from such data may be undependable. This is because measurement error is accidental deviation that is different in each individual case and occurs in parts in every direction according to the laws of probability.

It is also a randomly entangled error that may lead to increase or decrease in the observed score (Onunkwo, 2002).

Furthermore, in CTT, the reliability coefficient is expressed mathematically as reliability coefficient =

$$\frac{\text{True score variance}}{\dots \text{equation 1}}$$

... equation 1

True score variance + total error variance

From equation 1, it is clear that error variance in CTT is a single entangled (undifferentiated) entity. So in CTT, the partitioning of the observed score into true score and error score is likened unto using one-way analysis of variance to partition systematic and random error effects. Shavelson and Webb (2005) asserted that with the undifferentiated measurement error results obtained cannot be generalised.

Indeed, in determining reliability of a test using CTT, there are different methods that can be employed such include test retest, parallel form, scorer, split half Kuder-Richardson formulas 20 and 21 and Cronbach alpha methods. Despite the method used, CTT considers and provides only one source of error in a measurement at a time. For instance for test retest method, it assumes that the only source of error is occasion of testing, equivalent form method provides only one source of error in relation to forms of the test then internal consistency considers only the items. Shavelson and Webb (2005) asserted that the inability of CTT to separate the error score into different sources affected the generalization of the result obtained adversely. However, there are some measurement situations that involve the probability of the existence of multiple sources of error. In such cases, the



application of CTT may not be feasible but may require any measurement theory in which more than one sources of error can be differentiated so that a technically weak test will not be used for decision making. This limitation of CTT paved way for the use of generalizability theory in estimating the reliability of a test.

GENERALIZABILITY THEORY (GT)

Generalizability theory is the statistical theory that uses factorial (random-effects) analysis of variance procedures to identify and estimate different sources of measurement error in an observed score that may in one way or the other influence the measurement of behaviour. GT identifies the different sources of both systematic and random variations, separate them and that of their interaction (Shavelson & Webb, 2005) Generalizability theory is a measurement theory that aimed at estimating the reliability of measurement obtained from different instruments or devices such as achievement test, rating scales and observation tools (Alkharusi, 2012).

GT assumes that data to be analysed must either be interval or ordinal in nature. Again that a student's observed score is made up of universe score and multiple sources of errors. Hence in GT, the reliability coefficient is expressed mathematically as;

$$G\text{-coefficient} = \frac{\text{Universe score variance}}{\text{Universe score variance} + \text{Individual source of error variance}}$$

... equation 2

So comparing question 1 and 2, it could be deduced that the true score in CTT was replaced with universe score in GT, while the undifferentiated (inseparable) error score in CTT was replaced with multiple sources of error score. So in GT, $O_s = T_s + E_{s1} + E_{s2} + E_{s3} + E_{s4}$ where O_s is the observed score, T_s is the true score E_{s1} , E_{s2} , E_{s3} are error scores from component 1, 2, 3 and so on.

In GT, the students or the testees are the object of measurement that is the person to be measured while the test score is a sample from a universe of admissible observations (Shavelson & Webb, 2005). So each student's observed score is broken-down into different components such as component for student, item, occasion and/or rater depending on the nature of the study. The students' component of the score is not a reflection of error but the systematic variations in students (individual difference among students. Then the other score components; item, occasion, rater and their interactions reflect sources of measurement error.

This is an indication that GT assumes that in a measurement process, error may emanate from one or more of the following sources, the test items, testing occasions, test forms, the rater, and their interactions (such as $P \times I$, $P \times O$, $P \times I \times O$ etc).

In other words, GT identifies and estimates the components of the individual observed score attributed to the student/examinee, the facets and their interactions. The facets are the characteristics of the testing conditions which represent the sources of variations such as the tests forms, test items, rater and occasion that exist in levels.

The levels of the facets are known as the condition. So "facets" and "condition" are the same as "factors" and "levels" respectively. Then the universe is the possible combination of the levels of the facets. It is the combination of the facets of observation that determine the condition to which the decision maker wish to generalise from a measurement to behaviour in the universe.

UNIVERSE OF GENERALISATION

In GT, the concept of reliability is applicable to either simple or complex universe depending on number of characteristics of testing conditions the decision maker intend to investigate (facets). Specifically, there are one-facet, two-facet, three-facet and more than three-facet universes.

One-facet universe is the universe of study where only a source of measurement error will be investigated. That is it is a design in which the universe of admissible observations and that of generalisation involve the same condition known as item facet. Item facet can either be denoted as "i" or "I" based on the reference to be made, if the reference is to be made to G-study it will be denoted as 'I' but if it is to be made to D-study then item facet will be denoted as I while the object of measurement student/person is denoted as S or P respectively depending on the term used.

Brennan (2001) stated that there are two possible designs that could be applied in a G-study. They are the crossed and nested design that is PXI or the I:P design where P is the person (student or examinee)

- i is the item
- x is crossed with
- : is nested within

Based on the indexes, in the PXI design each student or examinee is tested on the same sample of test items. For I:P design each student is tested using different sample of test items. Each examinee is expected to have two scores from either the same test items



administered on two different occasions or from the administration of two different forms of test items.

Two-facet universe is a study where the universe of admissible observations could be determined by the combination of two different facets such as items and occasion, where the universe of admissible observation are to be determine from all acceptable items that are administered at different points in time. A two-facet universe that is items x raters indicate that universe of admissible observations are to be determined using all acceptable items that are rated by different raters.

Sometimes, the complexities of a measure may not be determined by only two facets but more than two, in such cases a three or more faceted universe is required. So three-facet universe is a study in which the decision maker or test users tends to generalize or investigates the variability of test performance over three or more facets such as (items, occasion and test combined). Then the universe of observation will be determined from all possible items that can be given by all possible points in time by different test administrators.

Furthermore, generalizability theory is applied in two distinguished stage in terms of studies, generalizability study (G-study) and decision studies (D-study) to determine the dependability of scores obtained from measurement of behaviours. The G-studies provide the estimation of the generaliability coefficient of the variances from all possible facets while the D-studies help the test users to determine the coefficients among all possible interactions (Kane, 2002, Brennan, 2011).

Generalisability theory also help to distinguished between two types of error variances associated with behavior measurement. These are the relative error variance and absolute error variances used to make relative and absolute decisions respectively. Relative decision entails the consistency of scores used in ranking students based on the differences in their performances in a given test. This error variance is associated with norm-reference interpretation of scores. So in all, relative error variance is the difference between a student's observed deviation score and his/her deviation from the universe score.

In contrast, absolute error variance is used to index the absolute level of an individual's performance in relation to the predetermined level without making reference to the performance of other students/individuals. This is mostly associated with criterion- reference interpretation.

Generalization theory also provides two reliability indexes terms generaliability coefficient and dependency coefficient. Generalizability coefficient is a measure of the estimate of the proportion of variance in a set of scores that are systematic for test designed for relative decision. Thus it is otherwise known as a norm-reference reliability or relative reliability that shows how accurate the generalisation of a person's observed score in relation to his or her universe score. It ranges from 0 to 1 where higher values indicate more dependable measures.

Dependability coefficient is a measure of the estimate o the proportion of variance in a set of scores for test designed for absolute decision, so it is sometimes termed as absolute reliability or criterion reference reliability where the cut-off score is set to the mean performance of the group. Like the generalizability coefficient, dependability coefficient (Φ) has a ceiling of 1.00 while higher values represent greater precision. Generalizability and dependability coefficients are determined after the identification and estimation of the weights of various sources of error components.

Sequel to all these, generalizability theory primarily aimed at generalizing the scores from a specific group on a given measure to the universe of admissible observation and G studies, as well as the universe of G-studies and D-studies. Considering all the features of generalizability theory, it is deduced that it has the following advantages over the CTT in

1. It provides estimates for all the distinguished sources of measurement errors individually and in their combined effects using factorial ANOVA.
2. It provides detailed information concerning the generalizability studies and decision studies.
3. It enables the test developers and users to determine how many occasions, test forms, items and raters that are needed to promote dependable result for decision making (Yin & Shavelson, 2008).
4. GT recognizes that test users may be involved in two main different types of decisions based on the obtained scores. Thus, it distinguishes between relative error variance and absolute error variance leading to relative and absolute decision.
5. It also help to provide the estimate for each examinee's structural level of knowledge based on the examinee's performance in a test.



6. It provides estimate of reliability coefficients for test-retest, inter rater equivalent form and internal consistency.

Despite all the potential benefits of GT in measurement of behaviour, it is rarely used in reporting results of measures while CTT that does not have the ability to separate the multiple sources of measurement error but entangled them is widely used (Teker, Guler and Uyanik 2015). Baird and Black (2013) observed that public examination violates the assumption of item independence, normality of scores, and unidimensionality. Again that some of the public examinations are technically weak tests due to the establishment of their internal consistency, occasion-related factors and inter-rater reliabilities using, CTT.

In conclusion, Baird and Black (2013) stated that the use of CTT has made the field of educational measurement to be under-theorized so they suggested the use of a more flexible, powerful and better theory to take account of the educational context of public examinations which WASSCE chemistry essay test is one. Owing to this, the researchers were compelled to embark on the present study, which only focused on the two-facet universe where the a chemistry essay questions conducted by west African examination council in May/June 2018 was administered once on the SS3 students and their responses were rated by two different raters independently.

The rationale had been that, it is hoped that through the findings from the study a clear understanding on the limitation of the common method of establishing reliability will be made through the identification of the multiple sources of measurement error. Again, a test that its result will help to accurately determine the future technologists, medical doctor, engineers, and sound chemistry teachers may be developed. In another angle, the findings from this study may help to increase the confidence people have on the test result and as well promote transparency in the field of measurement by informing the test users the true ability of the students, which will in turn enhance productivity among future employee's of labour. This is because through the administration of a test with accurate dependability level, classification of students in their various areas of specialization will be effectively done. Finally through the findings from this study decision about the students and the subject will be substantially improved upon.

AIM AND OBJECTIVES OF THE STUDY

The aim of the study was to determine the reliability of WASSCE 2018 chemistry essay test using generalizability theory. Specifically the study sought to

1. Identify and estimate the magnitude of the variance component of chemistry essay test of 2018 May/June conducted by WASSCE.
2. Estimate the relative and absolute error variance, universe score, G-coefficient and D-coefficient of the chemistry essay questions conducted by WASSCE in May/June 2018.

EMPIRICAL STUDIES RELATED TO GENERALIZABILITY THEORY

In the past, there are various studies related to generalizability theory (GT) that were conducted. For instance, Solanor Flores and Li (2006) conducted a study on the use of generalizability theory in the assessment of linguistic minorities among students. A two-facet, student raters x items random study was conducted using three different sample sizes that were administered test on standard English, standard Haitian-crete and local chilect of Haitian-crete. Results from data analysis using urGENOVA, showed that in all the samples used across the different languages the largest percentage of error variance emanated from the students and item interaction. This was followed by that of the main effect, students, items and then the three-way interaction of students, raters and items. On the other hand, it was found that the variance component for raters and the interaction of students by raters contributed little or nothing to the total error variance.

Heitman, Kovaleski and Pugh (2009) used generalizability theory to estimate the reliability of ankle complex laxity measurement across different examiners and multiple trials. It was found that high measurement error was attached to the facets associated with raters than with trial for both anteroposterior and inversion aversion trials.

In 2013, semmetroth measured sources of variance on a special education teacher observation tool using generalizability theory by two facet partially rested design, in which occasions were nested within teachers and crossed with raters. It was reported that multiple sources of errors affected the levels of reliability of the special education. Specifically, it was found that the largest variance component emanated from the interaction effect of occasion nested within teachers and crossed with raters. This was followed



persons, the interaction of person and raters and then raters.

The study conducted by Yelboga (2015) considered the estimation of the variance component of a proficiency examination in two different situations, cross pattern and mixed pattern using different programs such as GENOVA, EDuG, SPSS and SAS. It was reported that the percentage of variance component for all source obtained for all the programmes were consistent. That means in all the programmes multiple component of variances were obtained and the values were consistent. It was also specifically reported that the variance component for the three-way interaction of person, task and evaluate was the largest, followed by that of person and task, person, task, task and evaluator, person and rater and then lastly the evaluators.

Furthermore, Teker, Guler and Uyanik (2015) compared the effectiveness of spss and EduG in estimating the component of variance of a nine-item statistic test using three raters which gave rise to a two-facet design. The researchers used two designs, the fully crossed and nested random design, that is (P x I x R) and (P x I: r) respectively. It was found that the variance components estimated for the main effects, person, item and raters, two-way interaction effects for person and item (p1), person and raters (Pr) and item and raters (ir) as well as for the three-way interaction effects of person, item and raters (Pir) were approximately the same with both SPSS and Edu-G programmes. This trend was the same in both the crossed and nested random designs. In addition it was also reported that the largest variance component was attached to the main effect students. This is followed by that of the two-way interaction effects between students and item (S1) and thirdly by the three-way interaction effects of students, items and raters. On the whole the main effects of items and raters contributed little or nothing to the total error variance.

Nevertheless, Mushquash and O'Connor (2006) in their two-facet fully-crossed design study reported that the multiple sources such as items, (1) person and item (Pi), person and occasion (Po) and the three-way interaction effects of person, item and occasions (PiO) contributed to the variance in the undergraduate students scores in Rosenberg self-esteem scale. However, that the largest contribution to the total variance was that of three-way interaction effects of person, item and occasions (pio). This is followed by that of person, person by item interaction, item, person by occasions interactions and lastly by the items by occasions interaction. It was also reported that error variance in relation to the relative decision was a little

below that of the absolute decision while the G-coefficient for relative decision was a little greater than that of the absolute decision.

An analysis of the previous related studies reviewed indicated that multiple sources of variances contributed to the error in a measure and that no indigenous study like the present study has been conducted. Again, none of the study was conducted in relation to chemistry achievement test. Thus, more so, CTT assumed that all observed scores are components of a true and an error score that are entangled. It is also worthy of note that with CTT, Gugiu et al (2012) asserted that it is difficult to obtain high reliable scores from essay test when rated by more than one raters. On these bases, it becomes very imperative to adopt other better approaches of determining reliability that will help to separate the various components of errors, minimize measurement errors and then increase the probability of getting high reliable scores. Precisely, the psychometricians had recently recommended the use of generalizability theory. This is because GT assumed that the error variance results from multiple sources and their determinations reveal the level of accuracy and dependability of the scores obtained from the measures. To crown it, Brennan (2001) stated that GT provides examination of the various sources of influence on score reliability within a single analysis.

METHODS

The study adopted a two-facet fully crossed random design (S x I x R). This is because all the students used for the study responded to all the items and all their responses were doubled scored using two random, blinded and independent scorers Shavelson and Webb (1991) stated that in a crossed design every person responds to the same set of items which will be rated by all the raters independently. So in this study which is denoted as (S x I x R), S is the students which denote the object of measurement and not facet. 'I' denotes the five items administered to the students while "R" is the two raters. Thus the items and raters are the two facets. The crossed (X) symbol denote that all the items will be responded by all the students and all the raters must also rate all the items independently.

A sample of 74 senior secondary three chemistry students, in Obio/Akpor Local Government Area of Rivers State, Nigeria was used for the study. They were obtained using two-stage sampling method where at the first stage, simple random technique by balloting was used to select six senior secondary schools in the area.



At the second stage, non-proportionate stratified random sampling and accidental/ convenience sampling techniques were used to select 15 senior secondary three students from each school irrespective of the size of chemistry students in each of the six chosen schools. It is worthy of note that accidental/convenience sampling technique was used because the 15 senior secondary three chemistry students were selected based on their availability and willingness to respond to the items in the test. On the whole 90 Senior Secondary three chemistry students were obtained. However after test administration, during scoring and collation it was observed that 16 students did not answer all the items, so they were removed and 74 senior secondary three chemistry students were then used for the study. This sample of 74 senior secondary three chemistry students is adequate for the study. This is because Alilgan (2013) recommended a sample of 50 to 300 to be adequate for unbiased adequate estimation of the coefficient and phi-coefficients.

Furthermore, for data collection, an adapted instrument tagged WASSCE chemistry paper 2 question conducted by West African Examination Council for school candidates in May/ June 2018 was used. It is made up of 5 essay (open ended) questions with two sections (A and B). section A is made up of only one question for all candidates in all the countries. Then the section B, which is country based has four questions to answer only three. However, on the basis of two-facet model of generalizability theory, the students were asked to answer all the four questions in that section for Nigeria candidates plus the one question in section A given a total of 5 questions.

The face and content validities as well as the reliability of the instrument were not estimated on the basis that examinations conducted by West African examination council (WAEC) are a standardised test. During the administration of the instrument a direct-delivery approach was employed. The copies of the instruments were administered by the researchers and the assistant of the chemistry teacher of each school. The rules and instruction governing the examination were strictly followed except that time allowed which supposed to be 2 hours was changed to 2½ hours. This is based on the shift of answering only 4 questions to answering all the 5 questions in compliance to the two-facet fully crossed design.

To maintain standard, the responses of the students were rated using two independent raters who are WASSCE chemistry paper 2 examiners in Port Harcourt Rivers State, Nigeria. These raters utilized the

2018 chemistry II marking scheme as a guide to their scoring/rating:

Data obtained from their scoring were subjected to Scientific Package for Social Science (SPSS) to run a student x item x rater random effect analysis of variance by univariate model. This was used to partition the total variability in the data set into its separate sources of variations for the object of measurement (students), components for the main effects sources such as students, items and raters and their interactions. This is because the score given to each student by each rater on each item is conceived to be the deviation from the grand mean over all students, raters and items where the degree of deviation was determined by students (object of measurement) effect in the form of universe score, items' and raters' effect.

In addition to the three main effects each facet, item and raters' interaction with the object of measurement (students) in a two-way interaction SI and SR respectively as well as the two-way interaction effect between the two facets items and raters (IR) were estimated. There was also a three way interaction effect among the object of measurement (S) items and raters (SIR) and that of error component.

To obtain the variance estimate for each component the data were subjected to factorial analysis of variance by variance component procedure. This is as suggested by vispoel, Morris and Kline (2018). They stated that variance components for G-theory analyses can be computed using the VARCOMP procedure in SPSS via univariate model. This can also be done alternatively, by setting the observed mean squares from the ANOVA to the expected mean squares equations. After obtaining the variance components estimates, the percentage of the total variance for each variance estimate was determined by dividing each variance estimate by the total variance and multiplied by 100.

In determining the estimate of the error variances for relative and absolute conditions the following formula as stated in Vispoel et al (2018) were used.

$$\text{Relative error variances} = \frac{\sigma^2 pr}{n_r} + \frac{\sigma^2 pi}{n_i} + \frac{\sigma^2 pr}{n_r n_i}$$

Absolute error variances (σ absolute)
=

$$\frac{\sigma^2 r}{n_r} + \frac{\sigma^2 i}{n_i} + \frac{\sigma^2 pi}{n_i} + \frac{\sigma^2 pr}{n_r} + \frac{\sigma^2 ri}{n_i n_r} + \frac{\sigma^2 SIR}{n_i n_r}$$



Where $\frac{\sigma^2 pr}{n_r}$ = transient error variance

$\frac{\sigma^2 pi}{ni}$ = specific-factor variance

$\sigma^2 pri$ = Random-response error variance

RESULTS

After data analysis the results obtained for research question 1 and 2 are presented in tables 1 and 2 respectively.

Table 1: Estimated variance components and percentage of score variation for WASSCE on chemistry essay question 2018.

Source of variation	Sum of squares	df	Mean square	Variance component	% variance component
Student(s)	2828.81	73	39.75	0.481	2.36
Item (1)	901.72	4	225.43	1.285	6.31
Rater (R)	19.46	1	19.46	0.039	0.192
S x I	9855.28	292	33.75	15.27	75.04
S x R	249.14	73	3.41	0.0378	0.186
I x R	18.89	4	4.72	0.020	0.098
S x I x R	94.51	292	3.221	3.221	15.83
Error	0.000	0	0.000	0.000	0.000
Total	14813.81	739	-	20.35	

The results in table 1 revealed that the estimated variance for the object of measurement (students) is 0.481, which accounted for 2.36% of the total variance in the chemistry essay questions scores. For items, its variance component estimate is 1.285 which is equivalent to 6.31% of the total variance while that of the raters is 0.039, which constituted 0.19% of the total variance.

Moreso, in table 1, it is also revealed that variance components for all the two-way interactions between each of the facets and object of measurement were also obtained. For instance, it is shown that for interaction between students and items (SI) an estimate value of 15.27, which represent 75% of the total

variance in the students score in the WASSCE 2018 chemistry essay questions was obtained. For the interaction between students and raters (SR), an estimate value of 0.0378, which accounted for 0.186% of the total variance, was obtained. Then for the interaction between the two-facets, item and raters (IR) an estimate value of 0.020 equivalents to 0.098% of the total variance was obtained.

Finally, in the same table1, it is shown that the variance component for the three-way interaction effects among students, items and raters (SIR) is 3.221, which is equivalent to 15.83% of the total variance in the students' score in chemistry essay question conducted by WAEC 2018.

Table 2: Estimated generalizability coefficients relative and absolute decisions

Relative error variance	Absolute error variance	Universe score	G-coefficient	D-coefficient
0.124	0.116	10.02	0.795	0.806

Table 2 shows that values estimated for relative error variance and absolute error variance are 0.124 and 0.116 respectively while that of the universe score is 10.02. Furthermore, a critical observation on table 2 revealed that estimated values obtained for G-coefficient (P²) and D-coefficient (index of dependability) (θ) are 0.795 and 0.806 respectively.

DISCUSSION OF FINDINGS

Generalizability theory is used to determine the reliability of instrument when multiple sources of variations contribute to measurement error. That means generalizability theory helps to disentangle the multiple sources of error in a given measure. In this study, the result obtained after data analysis, revealed that multiple sources contributed to the measurement error in the chemistry essay questions conducted by West



African examination council in 2018. The sources of measurement error include the items, raters, the interaction effects of SI, SR, IR and SIR. However a critical evaluation of their variance components revealed that the largest variance component was obtained from the two-way interaction effects between the object of measurement(s) and the item (SI). This implies that the relative standing of the students differ across items. In other words the students did not score high in all the items leading to great variations in their performances across the items. This finding suggests that difficulty levels of the items greatly differ and that the students also differ in their ability levels.

The next largest variance component emanated from the three-way interaction effects among the main effects student, items and raters (SIR). The estimated value obtained for this source of variation (SIR) indicates that students relative standing differ across the items and the rating of the students in all the items by the raters also differ to a great extent. This implies that the different raters rated the students differently across items. The raters' levels of agreement in their ratings differ very well across the students. However, this finding to some extent supported that of Yelboga (2015) since both study reported that SIR contributed a large measurement error to the total variance.

It was also found that the variance component for item (1) was reasonably high. This means that part of the measurement error came from the item, which implies that the mean performance of the students differ from item to item. This variation in the mean performance of the students across the items may be attributed to differential difficulty levels across the items. Again, it could be traceable to the relative standing of the students which vary from one item to another.

Furthermore, from the study, it was found that the variance component for students was some-what large. This implies that the universe score among the students vary from one person to another. So since students represent the object of measurement and not error, it is then deduced that the level of variance component obtain from students represent the systematic individual differences in chemistry to a reasonable extent.

Again from the study it was also found that other sources of measurement error in chemistry essay questions conducted by WAEC 2018 such as raters, interaction effects between students and raters (SR) and that of items and raters (SR) have very small variance components. Thus they contributed very small to the measurement error in the chemistry essay question.

However, the small variance components for these sources may suggest that inaccuracies in generating the scores of the students are very small. This may be due to the use of similar marking scheme by the raters. Hence, there is a high level of agreement between the raters in the relative standing of the students in a given item. In other words the two raters were somewhat comparable in their ratings of the students' performance in the chemistry essay questions. This finding is not in line with that of Heitman et al (2009). They reported that a large measurement error was attached to raters. The two findings also differ on the bases of instruments and respondents that both study considered.

It was also found that the unmeasured error component contributed little or nothing to the total variance. This may suggest that the sources of measurement errors in the chemistry essay questions as separated by G-theory analysis have been indentified and little or no other sources yet to be identified based on 2-facet study design.

Nevertheless, from the study it was found that little inconsistency was observed in the ranking of the students by the raters based on their performances in the chemistry essay questions. Considering the absolute error variance estimate, it was revealed that the students observed scores did not deviate so much from the cut-off point which is the universe score.

With respect to the generalizability coefficients obtained, it is obvious that the students' relative standing can be differentiated with high degree of accuracy despite the random fluctuation of the conditions of the measurement. This is because the estimated proportion of the students observed score variance due to their universe score variance is quite high. Finally, the dependability coefficient obtained implies that a higher precision of accuracy was recorded in the performance level of students in relation to the predetermined cut-off point. Hence, the result obtained yielded higher precision level of accuracy in both relative and absolute decision making concerning the students. This is because the variance components corresponding to the main effects items and persons/students are quite high.

RECOMMENDATIONS

On the basis of the findings the following were recommended.

- 1) The use GT in determining reliability/dependability of measuring instruments should be emphasized by the examining bodies and institutions of learning.



- This is based on its ability to disentangle the multiple sources of error.
- 2) Researchers and test developers should endeavor to report the reliability of scores from measurement scale without underestimating the contributions of multiple sources of error variance in a set.
 - 3) Information obtained from WASSCE paper 2 conducted in May/June 2018 should be depend on.
 - 4) The use of marking scheme should be encouraged as it helps to reduce the measurement error that would emanate from raters.
 - 5) Items with comparable difficulty levels should be used to make up a given test.

CONCLUSION

Owing to the findings from this study it is conceivable that generalizability theory under the two-facet model is one of the most sophisticated methods of determining reliability of scores. Again it had been demonstrated that 2-facet model of generalizability can be used to estimate and integrate reliability. It is also in limelight that chemistry, essay question conducted by West African Examination Council in 2018 is reliable, and hence scores obtained from it are dependable. It is also confirmed that generalizability theory is a method of estimating reliability that can disentangle the various error components in a measurement.

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THE IMPORTANCE OF TEACHING ICT SKILLS FOR ENGLISH TEACHERS

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ABSTRACT

Article discusses the necessity of digital literacy for English learning and teaching environment and improving quality on ICT (Information and communication technology). The targeted admission focusing on teaching through incorporating ICT into classroom to enhance teaching standards and qualities for rural areas as a proposal form.

KEYWORDS: *ICT skills, software applications, online lessons, super-fast access, non-traditional method, ADP project;*

DISCUSSION

It is obvious that recent years have seen a significant improvement on learning and teaching the English language as the globalization is in its peak point. As a developing country, Uzbekistan government also has been paying attention to the teaching of this language to young generation through the incorporation of information and communication technology (ICT) into schools. ICT has been taken as a vitally important tool of teaching language effectively. Simply, current fast-flowing world urges people to rush in every field of life, surely involving education. In as much as the Internet, in a widely proved sense, can offer users super-fast access as well as endless resources, the tendency to online lessons, where sharing and obtaining information is nothing but a few steps with least time spent, is considerably rising.

Today's school pupils are growing up in a technology rich world that is increasingly reflected in their learning environments. As a proof for the point, according to the decree "On measures to further improve foreign language learning system". «In order to increase teaching standards in distant rural areas, the higher educational institutions allow targeting admission of people living in distant areas to foreign language programs on the condition that they will oblige themselves to work in the acquired specialty at their residence area for at least 5 years after graduation. Furthermore, ADP project funded for

providing computers and other teaching tools to schools earlier on June 2009 for the purpose of improving quality in ITC sphere in teaching and learning language. The Ministry of Public Education established to software applications, e-books, DVD sets, audiovisual equipment for all public schools providing them a head start.

Schools are provided ICT from the government in many different ways in the classroom. From the use of smart boards to deliver lessons, most school textbooks and workbooks are designed in multi-teaching way and covered mostly listening aspects; however, in most cases being lack of media literacy even some teachers do not have a tiny knowledge how to do it the given task. In this point, I want to highlight those minuses from my personal perspective and experience.

To begin with, the discrepancy between how the learning style used to be and now is gives a birth to a better understanding of the issue stated above. Those so-called "traditional" approaches of teaching do not necessarily meet the requirements of what today's youth need.

According to the Ministry of Public Education three quarter of public schools are provided with ICT facilities which available to entire education sphere, however, it does not mean government projected all the things properly. The crucial thing to manage the implementation of the project in which teachers are obligated to be the knowledgeable person of their



aspect and having been an advanced on ICT skills. Education network have crucial role for self-esteem of the teachers, enlarging their knowledge. Moreover, being able to technically master and select appropriate material are crucial factors teaching English language. In order to keep up the up-to-date technologies pedagogical practices are seen as a solution and experience on a daily basis puts all teachers for the top of improvement. Here it can be seen so many reasons to engage in digital literacy for saving time, to be more efficient of the lesson. On behalf of the standard of foreign language teachers, for each week, they are obligated to attend the methodological seminars and they are free from the lesson on Fridays, however in most cases provided lesson are mostly designed on traditional style, which means being a lack of knowledge on ICT could be obstacle in most cases.

Therefore, I wholeheartedly aimed to conduct research of English teacher as a population role in one district of Tashkent region whose lack of experience on that and how to enhance their ICT literacy in a limited period of time. Through this research, I will provide all the numbers and other findings as a proposal form. As a population role mainly considered English teachers of the district. To be more precise 183 English teachers out of 67 schools. District is consisting of 8 mini-territorial place and two small towns. All the schoolteachers have to attend more class, which is the served to improve their competence deeper. In terms of learning environment for all teachers, need improvement on methods mostly 97 teachers, who were not retrained the last five year periods. The main peculiarities of the project or course we can say

They are:

- Enable to use all skills integrated way
- Knowing the general point of using gadgets
- More focus on student-centered

held once a week in different territory (three separate section because of a great number of teachers and better comprehension) 3 IT experts conduct the lesson 90 minutes for each territory volunteer teachers and provide a master class for those teachers with good explanation. After the conducted lesson, all participants provide their oral and written feedback and organize debate the strength and weakness of the lesson.

The aim of the planned project to consolidate teachers ITC skills while conducting the lesson. The Ministry of Public Education try to introduce new teaching methods designed fully IT system among education standard. Further some special feature to demonstrate main target in potentially:

- To strengthen and enlarge the staff adequate knowledge with IT sphere

- To be awaken interests for language teaching pupils with the help of demonstrating best visual materials rather than traditional GT method
- To develop ICT literacy and assist who are unexperienced teachers, when and where to use this knowledge

Inventory

- Physical training for each week on Fridays are held mostly on the list not in reality
- There is no any commission part for the implementation of the project
- Even though Fridays are methodological day, most English classes scheduled on this day
- Textbooks and workbooks such as “Fly high”, “matters” are designed mostly based on listening, however, instructor do not use those speakers, and students could not listen at all

Here main point is controlling and paying more attention of the designed language rooms, in most cases without experiences teachers even do not know how to use it, or mostly rural areas they do not have enough materials, as a consequences pupil could not cover the tasks in order and fully, these leads the pupils to get bored.

Funding

For the implementation of the project 3 months, enough for each group of teachers and appointed one IT master to provide adequate knowledge for conducting lesson with multimedia. For each one 2500000 sum is allocated for per month, here we have three separate group teachers overall 21 000 000 million sum is adequate for teacher training. Then, those schools, which are not designed with IT materials, funded by the Public Ministry of Education and the financial department of the Ministry 50-mln sum.

Recommendations

The primary thing is to get a success it must be designed from the target population, it means in most rural places energy issues will encounter of the teacher that is why in each school they must be extra battery mechanisms to get rid of such situations. In most cases teacher knowledge should not be evaluate properly, then he or she loses their motivation. The Ministry of Public Education should have control the implementation of funding and other small staff. Teachers are obligated to participate and have to complete of the project, it is the proofment whether they are aware of IT competence or not.

Timeline

Actually, these recommendations have been outlined for this upcoming study year in 2020-2021 and anticipation would be following points:



- Language competence will have acquired more easily with the help of master ICT skills;
- Textbook material is covered in detail;
- Conducting lesson system would be more efficient than the traditional style and do not require much time in assessing;
- Teachers and instructors will be high qualified on both language competence and ICT skills;

Target language

- General English
- Classroom-based terminology

Assessment

- Holistic assessment
- Informal assessment
- Summative assessment

Actors

In the field of actors, global comprehension of language planning policy in public education, could earn advantages on academic evaluation of actors at schools (Chua, C. S K., & Baldauf, R.B. (2011). Broadening contribution of the actors in my language planning, I opt for institutional layer, which are included teacher administration, additional staff for the development of their literacy and government officials deal with the improvement for the proposal. That layer includes schools, which appropriate for the mesa level language planning, and frequently effects on language planning policy. Implementation of the current language planning the actor role also vitally important so that among the actor agencies a group of experts has to be involved in the teaching role of those intended audience.

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INCOMPLETE SYNTACTIC CONSTRUCTIONS IN COGNITIVE-DISCURSIVE INFORMATION AND ISOFUNCTIONAL ASPECTS

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ANNOTATION

In this article, incomplete syntactic constructions are considered in line with the latest linguistic approaches the study is carried out in the framework of a cognitive-discursive paradigm using informational and isofunctional approaches, an attempt is made of an explanatory approach. The data of philosophy, psychology, psycholinguistics, cognitiology, information theory are attracted, which is relevant for the modern inter subject paradigm of linguistics.

KEY WORDS: *incompleteness, ellipsis, discourse, isofunctional, information gap, extralinguistic, lacuna.*

Аннотация

*В статье рассматриваются неполные синтаксические конструкции в русле новейших лингвистических подходов исследование проводится в рамках когнитивно-дискурсивной парадигмы с использованием информационного и изофункционального подходов, предпринимается попытка объяснительного подхода. Привлекаются данные философии, психологии, психолингвистики, когнитологии, теории информации что для современной межпредметной парадигмы лингвистики является актуальным.
Ключевые слова: *неполнота, эллипсис, дискурс, изо функциональность, информационный разрыв, экстралингвистика, лакуна.**

DISCUSSION

The problems of compressing the plan of expression in incomplete constructions and the successful functioning of “*concise*” statements in the discourse are in the focus of attention of modern scientists - their solution would allow to obtain fundamentally new data on methods of encoding language information. Syntactic incompleteness refers to the most frequent phenomena of everyday discourse, and its description, taking into account various kinds of factors, is especially relevant. According to P.A. Lekant, the distinction between complete and incomplete sentences is very important for linguistic

theory and educational practice. The need for a multidimensional study of incomplete syntactic constructions is stated by many other researchers [1].

The data of modern syntactic theories allow us to illuminate in a new way such difficult issues as the composition, status and functioning of incomplete sentences in modern Russian. In our opinion, attempts to limit the list of incomplete constructions, differentiate different types of incompleteness, which were earlier undertaken, have insufficient explanatory power because researchers searched for incompleteness mechanisms at the level of syntactic and semantic structures, incompleteness was not considered as a systemic phenomenon functioning at



different levels language from cognition to discourse[2].

Among the central questions of the theory of incompleteness are its criteria. With traditional approaches to the study of the described phenomenon, the following criteria are among the main criteria:

- 1) the syntactic role of the omitted member or members of the sentence;
- 2) the specifics of the available composition, i.e. verbally represented members of the proposal;
- 3) consideration of the situation and context;
- 4) taking into account the syntactic position of the omitted component;
- 5) accounting for the semantic position of the non-verbalized component. All available classifications mainly follow the principle of minimalism strive to highlight the minimum number of criteria for incompleteness. The result of this approach is the unlawful narrowing of the boundaries of the phenomenon of syntactic incompleteness in which it is delimited from a number of "related" phenomena, primarily from ellipsis and from semantic incompleteness[3]. Moreover, the distinction between semantic and syntactic incompleteness in almost all studies is based on the principle of opposition.

In our understanding, semantic incompleteness is not opposed to syntactic. Semantic incompleteness is the presence of a gap in the cognitive structure of the utterance

eg: He remembered something, while syntactic incompleteness is the presence of an unsubstituted syntactic position, which is mandatory for recovery based on internal information contained in the structure itself or external information contained in the discourse (context) *eg: Anton bought the ball, and Pavel bought chess*. At the same time an incomplete offer is isofunctional to the corresponding full one *eg: ..and Pavel acquired chess*[4]. An incomplete sentence system is a combination of isofunctional structures with varying degrees of explicitness of components. An incomplete sentence representing a unit of information does not represent the whole in a communicative act, but only a fragment of his image of the world that is essential for the speaker - the main actual proposition in a minimal explicit predicative design.

In most cases, complete isofunctional variants of incomplete syntactic constructions are easily transformed into structures in which one of the components actualizes non-essential and the second - actual, preferred information. Thus, the isofunctional invariant of a potentially incomplete sentence can be a complete sentence and even a poly propositive full sentence, in which an entire proposition can be omitted when incompleteness is formed. The

cognitive structure of the utterance is at the deepest level of the linguistic system and only as a result of the processes of nomination, predication and verbalization takes on structurally-semantic outlines. As a result of these processes a random or intentional "loss" of a fragment of cognitive information may occur, which will affect the semantic and or syntactic structure of the statement[5].

We call such a "loss" an information gap. Its nature and place of origin are directly related to which of the types of incompleteness is realized at the place of formation of this gap. An essential point is the importance or relevance for the communication of information that "fell" into the gap. If this information affects a fragment of the picture of the world that is irrelevant for the given discourse, uncritical for the reconstruction of the necessary knowledge, then most likely neither the one who makes the statement, nor the one to whom it is addressed, will notice the absence of this information. If the information is of an additional, commenting nature then it if it turns out to be significant in the process of deploying the discourse is represented in a connecting or parcel design (depending on when its relevance appears). Moreover, the absence of an informational fragment of the proposition does not mean its destruction, even if a significant part is lost. As long as reconstruction of the proposition is possible we can talk about the *information gap*[7].

If the information gap is observed at the stage of formation of the cognitive structure of the utterance is a loss of the information component even before the construction of the syntactic structure it can be assumed that such a loss will not affect the syntactic structure (which, when formed, compensates for the shortage) and remains in the semantics of the statement. If the information gap is manifested at the stage of formation of the verbal-grammatical structure and at the stage of formation of the cognitive structure of the utterance of the gap then such a gap is represented at the level of the syntactic structure. A situation is possible where relevant information "falls out" of the cognitive structure and its "lack" is felt both at the level of the structure (the gap is represented in the syntax) and at the level of semantics. Hence we can conclude that the two types of incompleteness are directly related to the stage at which the cognitive transformation of a fragment of the picture of the world into a statement reveals a gap: on the preverbal or on the verbal-syntactic.

Two types of information gap are distinguished in the article

a) in the presence of a gap in the cognitive structure, semantic incompleteness is formed on its basis



b) if there is a gap in the discursive structure (and its absence in the cognitive structure) - syntactic incompleteness is formed on the basis of this phenomenon.

The following reasons for the formation of the information gap are revealed:

- 1) Time saving: the speaker wants the statement to be shorter (time of utterance)
- 2) Volume saving: the speaker seeks to make the statement as compact as possible
- 3) The presence of precedential conventional models: there are a large number of typical models for deploying discourse that are of a precedential nature and can form the basis of various variations:

For example

- How are you? - Fine.

- And you?

A typical dialogue, which is common when two friends meet. His cues, according to the customary tradition, do not provide for the deployment of one of the phrases to the full syntactic version.

- 4) The absence of the need for a representation of the syntactic component - this formal factor occurs in most cases when all the necessary semantics of the component are already expressed by other components of the statement: *Everything in the garden!*

The imperativeness and the presence of the circumstances of the place, as well as the third syntactic person give enough information that the verb of movement takes place in the statement - the insignificance of how this movement will be carried out allows this verb to be omitted.

- 5) An expression of the insignificance of a given information fragment in comparison with other information - this cognitive plan factor makes it possible to artificially reduce the relevance of a restored but omitted component compared to information that is verbalized.

- 6) The impossibility of verbalization - this factor can be called operational-cognitive: *for example*, for the representation of an information fragment there is no means of expression or it is not found in a timely manner.

- 7) Cohesive factors - by means of a lacunae, a reference is formed to another fragment of discourse, cohesion is formed: there are several informational positions on the same object, itself may be replaced by pronouns or may periodically be omitted, its position remains empty, intended for independent completion by the recipient.

- 8) Stylistic factors that usually act together with cohesive ones to avoid unnecessary repetitions in communication (text). Along with the synonymous substitution, which is more characteristic of written forms of speech, a lacuna in the place of the

previously mentioned object is more often used in colloquial speech.

- 9) Extralinguistic (situational) factors, which are based on a direct reference to the objects of extralinguistic reality: *This is yours. Where's mine ?*

- 10) an important factor is the inferiority of the position of the omitted component. This is especially pronounced in the case of omission of communication means representing the logical position: *you buy now - there will be no money left - (If) you buy (this) now, (then) there will be no money left*[8].

The lacuna in the syntactic structure obeys the general rules of information theory, it can be:

a) replenished or irreplaceable;

b) critical or non-critical to maintain the information integrity of the message.

The possible number of combinations of these parameters is four and in accordance with the distribution of these signs four degrees of syntactic incompleteness can be distinguished by the nature of the information gap:

- 1) replaceable, uncritical — elliptic constructions of the 2nd person equal to them in status, definitive constructions of the 2nd person, definitely personal and etc. The cognitive completion procedure in these cases is minimal information deficiency is compensated for by the information contained within the construct itself, RAM functions within the structure stored in it.
- 2) replaceable, critical - cases of incompleteness, amenable to reconstruction (most structures traditionally distinguished as incomplete). The cognitive replenishment procedure in this case is characterized by a greater or lesser degree of volumetricity and is quite effective, information is being reconstructed, various types of memory are functioning from short-term to store the immediate context and current discourse to long-term, including a knowledge base about the world and its laws.
- 3) irreplaceable, uncritical cases of discursive use of structures with gaps that do not affect the integrity of the discourse: *I saw here ... - What did you see? - No, I forgot that* Often in this situation deictic filling of the gap occurs: *- I forgot this ... - What did I forget? - It doesn't matter*

The cognitive replenishment procedure in this case is characterized by low efficiency there is a substitution of the most likely missing information; memory access does not produce the expected effect.



- 4) irreplaceable, critical - cases of interrupted communication and other communicative failures associated with the irreplaceable lack of the necessary component I just heard: **“Guys, they are here ...”** - and the connection disappeared.

The cognitive replenishment procedure in this case again becomes minimal there is no data memory access is inefficient, a partial effect is achieved as a result of modeling one or several possible options while the result is considered unsatisfactory, there is not enough information with the simulated fragment of the picture of the world remains unreliable and incomplete.

Since all these phenomena are characterized by one mechanism of formation and functioning they should be qualified as cases of syntactic incompleteness.

Thus, the two levels of formation of the information gap create two types of incompleteness (semantic and syntactic) but these two types of incompleteness are not opposed to each other, but are only different in origin and functioning. In addition, it follows that the spectrum of manifestations of syntactic incompleteness is continuous and covers the entire syntactic system of the language.

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POSSIBILITIES OF AESTHETIC EDUCATION THROUGH TEXT IN MOTHER TONGUE CLASSES

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ABSTRACT

In the article, it is reflected the scientific and methodological views on the possibilities of using the literary text for aesthetic education in the native language classes, aesthetic feeling, artistic perception, pedagogical and psychological interpretation of aesthetic attitudes.

KEYWORDS: *aesthetic experience, aesthetic activity, artistic text, artistic perception, artistic taste, artistic means of expression, artistic and aesthetic education, speech culture*

INTRODUCTION

Aesthetic feeling is the most important emotion that defines a person's spiritual need for beauty and characterizes him as a person. Lack of development of aesthetic senses slows down the process of formation of the intellect and its moral qualities. In that case, the ability to see, understand and appreciate beauty is one of the necessary skills [1; –P.24]. It is known that the aesthetic sense is expressed nature, mankind and in the form of admiration and enjoyment of the artistic beauty.

The results of aesthetic perception through aesthetic experience and emotion, which act as a driving force for creativity, are reinforced in the aesthetic sense that defines the whole process of creation at the same incomprehensible level. In contrast to aesthetic experiences, emotions and pleasures, when an aesthetic feeling is formed, it has a special place in the aesthetic creative ability, as it is strengthened by a special physiological mechanism that ensures the constant functioning of this product of the psyche' remains one of the last constants [2; –P.4].

MAIN PART

The process of artistic comprehension of the content of literary texts in mother tongue lessons as a means of aesthetic pleasure, the ability to use words and phrases directly, that is, the study of the linguistic features of the work, the rich potential of our language, the organization of its activities serves as an object of occupation. The reader discovers the author's aesthetic

skills in creating a work in harmony with life, tries to feel the pleasure of art, to change his attitude to world events.

In literature classes, artistic cognition, aesthetic education, artistic taste education issues are analyzed research works and monographs of methodist scholars such as K.Yuldashev [3], B.Tukhliyev [4.], M.Mirkasimova [5], S.Matchonov [6], K. Husanbaeva [7], R. Niyozmetova [8], Y. Juraev.

It is crucial issue to develop an aesthetic sense of the language through the use of literary texts in mother tongue lessons. M.T. Baranov emphasized that, "The aesthetic feeling of language stems from the richness of language tools, their expressiveness, the beauty of the sound of speech, the accuracy of language, the appropriate use of language tools and their effectiveness. Experience has shown that these elements of the aesthetic sense of language develop only partially or not at all in most students without the special influence of the teacher. Therefore, it is necessary to work purposefully on the formation of aesthetic attitude of students to language" [1; –P.25]. Aesthetic education in mother tongue classes, based on artistic models, in our opinion, has the same goal.

Aesthetic education is a key component of the spiritual culture that humanity has accumulated in the process of gaining aesthetic experience. It is formed in man's perception of beauty and becomes the product of his perception of the material world from this point of view. I.L.Iinskaya gives the following explanation of the concept of "aesthetic relationship" from the dictionary:



Aesthetic attitude is a specific emotional and spiritual attitude of man to reality, in the process of which the subject realizes his ideal ideas about perfection, beauty and harmony, to evaluate the various manifestations of appropriate life” [2; –P.3].

One of the things that excites students in their native language classes is the word art, the second is the beauty of nature, and the third is the beautiful behavior. Third of them are in artistic text. Let’s take one of the exercise materials from the textbook “Mother tongue”:

Shirinsoy oqshomlari! Naqadar jozibador, naqadar orombaxsh!.. Quyosh qizil baxmal kabi tovlanib, o’zini azim chinorlar panasiga olganda, bu yerdagi oqshomlar ko’hna tabiat ko’rki – tongdan ham musaffo bo’lib ketadi. Go’yo butun qishloqqa atlas poyandoz solinganday. Keng ko’chalar ham, qator oq uylar ham, oldi gulzor klub ham goh sariq, goh qizg’ish tusga kirib qishloq husniga husn qo’shadi. Bu yerning odamlari-chi? Ular orombaxsh oqshomlardan ham go’zal. (O’. Umarbekov)

Translation of artistic text. Shirinsoy’s evenings! How charming, how relaxing! When the sun shines like red velvet and takes refuge in the giant plane trees, the evenings here are the beauty of ancient nature – clearer than the mornings. It’s as if the whole village is covered with atlas. The wide streets, the rows of white houses, and the flowers in front of club, all turn yellow and red, adding to the beauty of the village. What about the people here? They are better than restful evenings.

The reader is also moved by the excitement of the beauty of nature. To be able to feel the beauty of nature and to love beautiful people even more than on a relaxed evening is a beautiful behavior. That’s the decent thing to do, and it should end there.

In a prose play, all three of the above-mentioned aspects that give the reader an artistic pleasure may not appear at once. The combination of the three is more characteristic of poetic passages. For example, textbook “Mother tongue” contains the following poem:

*Gul bag’rini nasim tildi – to’kildi,
Saboga hikoyat qildi – to’kildi.
Falak ishiga boq: bir haftada gul
Chiqdi, g’unchaladi, kuldi – to’kildi...*

(Umar Hayyom)

(The wind hurt, and spilled the flower’s heart out,
He told the story to the sky, and spilled it.

Look at the work of destiny: flowers in a week
It came out, and sprouted, and opened, and spilled)

The reader who reads the poem will be overwhelmed by delicate emotions. The words in it (spilled – spilled, spilled – cracked, spilled – fell to the ground) attract his attention and allow him to feel different situations.

The writer uses artistic means and poetic forms to make the image of the character, character, event, object more vivid, to show the author’s attitude to the portrayed,

to arouse the emotional response (sympathy) in the reader, to form a certain assessment.

The subtlety of the literary text, the beauty of nature, the beauty of the character, the feeling of pleasure, becomes a fact of aesthetic consciousness. Emotions that arise as a result of exposure to something are stored in the mind and memory for a long time. The reader’s heart is drawn to a work of art that has such an impact. This is a testament to his aesthetic taste, artistic views and beliefs. Every time she reads a literary text in her mother tongue class, she expects to enjoy it.

I.L. Ilinskaya believes that aesthetic feelings can arise only in the process of aesthetic perception: “The lower class student pays less attention to the details of what is being observed. He often misses important things and can’t keep track of them. It is therefore necessary to give something simpler (artistic text) for observation first. In such a text, readers are attracted by vivid expressions and unusual behaviors ” [2; –P.5]. According to the author’s observations, the child is quickly affected by the literary text, the creative imagination of the reconstruction is activated, which is accompanied by involuntary actions (evaluative speeches, gestures, sudden questions). Aesthetic activity, which begins with exposure, evokes aesthetic feelings. I.L. Ilinskaya suggests that the process of reading a literary text should not only evoke an aesthetic sense, but also imprint it in the child’s aesthetic consciousness, which will motivate the child to further aesthetic activity. The author reflects the aesthetic activity through the following diagram:

“Perception → emotion → experience → emotion
→ pleasure → judgment → motive → activity → need”
[2; –P.7].

It is clear from the drawing that the realized artistic perception arouses excitement, excitement gives rise to inner experiences, which in turn give rise to emotions, which in turn lead to pleasure. The pleasure of the work is the basis for its evaluation. All this creates in the reader a motive – a desire, a purpose. This situation creates a special need for the imagination to engage in artistic creation, that is, to master the art of speech, stimulating creative activity.

Participating in aesthetic activities by discovering the artistic aspects of an artistic text does not end with artistic perception, but rather motivates artistic creation. In this process, artistic taste develops, artistic culture is formed. Art culture is not only a passive perception of beauty, but also an expression of one’s attitude to it, an appreciation of it.

CONCLUSION

Thus, the analysis and interpretation of some sources on psychology and methodology shows that the texts used in native language lessons should be used not only to distinguish language phenomena, but also to



acquaint students with the rich potential of our language and thus provide them with aesthetic education.

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ASSONANCE IN THE CHILDREN'S LITERATURE

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ABSTRACT

There is observed the assonance phenomenon which is used for reinforcing the meaning of the poetic work; in revealing the inner experiences and feelings of the lyrical protagonist; in the provision of emotional expressiveness.

KEYWORDS. *language, fiction, poem, poetic text, language of fiction, sound, assonance, stylistic coloring, reinforcing the meaning, emotional expressiveness, tone of sounds, stretching of sounds, folding of sounds, amplification of sounds, reduction of sounds.*

INTRODUCTION

In children, true human qualities such as spiritual and moral purification, faith, honesty, piety, honor and kindness do not form by itself. The basis of everything is education and, in this laborious, work the role of children's literature is especially important. The brilliance of characters in the works of fiction, the accuracy of words meanings, the melody and the musicality of the text give peace and tranquility to the child's soul, enchant him. [3;3]

The process of learning language and proper use of its capabilities is very complicated and difficult for preschool and school-age children. Russian linguist E.N.Panov wrote about it follows: *"A child begins to learn a language from things around him, their quality then by imitation their actions. Much time is required from a child to realize notions about them and to form words from sounds about appeared imaginations"*. [6;7]

So, the influence of fiction, especially, poetic works on a child is great in the knowledge of the world, forming an active position to the environment and phenomena around him, finding his place firstly in the family then in the society.

H.Tohtaboyev, famous children's writer wrote: *"A man should "speak" with nature from childhood. The earlier this process begins the faster nature, its flora and fauna can open a child's heart and show own secrets"*. [7;3]

MAIN PART

The same opinion we can say about a society. A child will grow and develop if he can find answers to the interested questions.

There given the following lines in the poem of talented poetess Kavsar Turdiyeva "A childhood – when I am a king": – *Дунёда қанча болалар? Дунёда қанча, қанча, қанча болалар? – Дунёда анча, анча, анча болалар, Уларда дук-дук-дук урар юраклар, Уларда кўп-кўп, кўп-кўп орзу, тилаклар. Ранглари турли, турли, турли болалар, Йўллари нурли, нурли, нурли болалар. Орзуси мўлдир, мўлдир, мўлдир, Бирлашса зўрдир, зўрдир, зўрдир.*

(- How many children are there in the world? How many, many, many children are there in the world? – There are many, many, many children in the world, Tuk-tuk-tuk their hearts beat, They have a lot of, a lot of, a lot of wishes. Different, different, different coloured children, With bright, bright, bright roads children. Dreams are many-many, many-many, If they unite it is perfect, perfect, perfect) [4;400]

In these lines the ideas about children are given in simple, folk style, by the method question-answer and repeating certain words. In the science this method is called linguistic poetics. Linguistic poetics method influences on a child more than simple speech and helps to find answers to the discursive interested questions; provides full live inter communication. That is why recently language of fiction has been studied more not only from the literary point of view but also its phonetic, graphic,



morphological, lexical, syntactic levels, in the linguistic poetic aspect.

In fiction the use of tone of sounds, including, reinforcing meaning in the poetry, revealing the psychology of the lyrical protagonist, emotional influencing on a reader and providing emotional expressiveness is very important. In actual fact, in the Turkish poetry the phonetic means as: stretching of sounds, folding of sounds, amplification of sounds, and reduction of sounds are one of the oldest methods of reinforcing meaning in the poetry and have become the essential part of the texts. On the one hands, the complex of sounds, constituents the poetic text, is similar to usual speech units complex, but if we look deeper, each sound in the text, its role in the text, the pronunciation of sounds and changing the meaning are very significant in creating the poetic text.

For example, there are such lines in the poem of a famous children's poet Anvar Obidjon "I am still a child":

*Дадажоним, дадажон,
Отим нега "Отажон?"
Ахир, кимга отаман,
Шуни ўйла-а-аб ётаман.*

(Daddy, my daddy,
Why is my name "Oтажон"
After all, who I shall throw
I li-i-e and think about it). [2;61]

In the poem 19 sounds were used 63 times. "A" sound 15 times, "n" and "o" sounds 7 times, "m", "e" sounds 5 times, "d", "m" sounds 4 times, "j" sound 3 times, "g", "y" sounds 2 times and other 9 sounds 1 time are used. It is obvious that Anvar Obidjon, for increasing friskiness, sensitivity, emotional expressiveness in the poem, paid the main attention to "a" sound. If we observe from the amount point of view, 24 % of sounds in the fragment are "a" sound. It is clear that the author used some phonetic means in this poem. Firstly, he used effectively the lightness, openness and friskiness of the "a" sound. Secondly, he didn't lose sight of similar pronunciation "a" and "o" sounds in the children's speech. Thirdly, in the word "o'yla-a-ab" he could reflect the psychological condition of a protagonist by the folding of "a" sound. In linguistics this method is called assonance linguistics.

ASSONANCE (from French assonance) – is taken from the word consonance and means consonance by the repeating of the same or similar vowels. [11;6]

The correct use of vowel sounds in the speech ensures the completeness of the communication process. Trying of an infant saying folding of vowels "a-a-a", "e-e-e", "o-o-o" and other sounds is not in vain.

Today, the poetry has risen to a new level of quality in terms of form and content. Picture poems, landscape poems, digital poems, question poems and their audio and video versions were created for children. In these poems there effectively used vowels' acoustic-physiologic features typical for children's speech. Particularly, in the poems of Anvar Obidjon, T. Adashboyev, K.Turdiyeva, Abdurahmon Akbar, Dilshod Rajab, Sh.Salimova, Qambar Otayev, X.Komilov the use of phonopoetic means has risen to the level of mastery. Uzbek children's poets could provide stylistic colouring and emotional expressiveness through stretching of sounds, folding of sounds, amplification of sounds, reduction of sounds in their poems.

There are two kinds of assonance in the Uzbek children's poetry.

To repeat and to fold the certain sound in the word in order to incred stylistic colouring, providing emotional expressiveness and clarifying the being promoted reality.

The following meanings appear through this kind of assonance:

a) strengthen the situation: *Шунда бирдан "Па-ақ!" этди. Ана энди Қўрқитди.* (there came 'pa-aq' sound. That's scary) [10;19]

b) being surprised: *Хўкиз айтар: – Уй эмас, Мў-ў-жиза, қаранг! "Э-ҳа, э-ҳа" – дер Эшак, Бўлиб ҳанг-у манг.* (The ox says, "It's not home, Miracle look!" "Yeah, yeah," said the astonished Donkey) [1;158]

"А"дан аввал турай деб, Биринчи бўл юрай деб, "О!-о" оғзини очди, "А" ҳайратини сочди. (To get up before "A", To be the first, "O! - O" opened his mouth, "A" was amazed) [4;165]

c) duration of movement, repetition: *Қуёним бор – "вов-вов" дер, Кучугим бор – беда ер. Тонгда қичқириб: "Қуқ-ку-у", Балиғим бермас уйку.* (I have a rabbit - he says "woof-woof", I have a dog eating clover. Screaming in the morning, "Cro-o-w", my fish keep me awake) [1;165]

d) a call, an urge: *Даҳлизда ҳам бўзлайди томчи: Чи-чиқ! Чиқ-а! Чиқ! Чиққин, – дейди.* (- There is a drop in the hallway too: Ca-a-p, ca-a-p! Co-o-me out! Co-o-me out!" it says) [8;41]

e) regretting: *Тараф бўлсам Ҳошимга, Мушт ёғилди бошимга. Қочиб қолди Ҳошим-а, Эссизгина бошим-а.* (When I was on the side of Hashim, Fists rained down on me. Hashim ran awa – a-y, My poor head) [10;27]

f) pleading, begging: *Кетмай тургин, Жо-о-он, Хотам. Қуригунча иштончам.* (Don't go, Dea-ar, Hotam. Till my pants will dry) [1;240]

g) to intimidate, to panic: *– Бу милтиқми? – Ҳа. – Қўштиғми? – Ҳа. –*



Сотиладими? – Ҳа. – Отиладими? – Ва-а-а! (- Is this a gun? - Yes. "Double-barreled?" - Yes. "Is it for sale?" - Yes. "Does it shoot?" - Va-a-a!) [1; 238]

h) ignorance: *Учраб қолди далада, Шоху ўткир бир Така. Бе-е, у тайёр ўлжа-ку, Таъмин тотганман, ука. (There was in the field, A Taka with a sharp horn. Ва-а-а, Oh that is ready prey for me, I tasted you before, bro) [1;153]*

i) objection: *Қуваб қолди бир тўп ари... – Ари дегин? – Э, йўқ... ойим! Адашаман гапдан доим. (A group of bees chased me ... - Really, bee? "Oh, no ... my Mom!" I always mix the words) [1;133]*

j) irony, hint: *Бўйи бир метр филнинг, Вазни тўқсон киломиш. Унга тез ёрдам қилинг, Ахир, у – ча-қа-лоқ-миш! Деганларга шошманг, денг. (An elephant is one meter tall, Weight is only ninety pounds. Help him quickly, After all, he is a ba-a-by! Don't be in a hurry, say) [9;34]*

k) to be in an uncomfortable position: *Э-э... Бе-э... Эчки таърифга тополмади сўз. (- E-e ... Be-e ... The goat could not find to explain) [1;158]*

l) to open the mouth: *Чўчима ҳадеб, Ўтмасин фурсат. Ўтирда “а-а” деб, Тилингни кўрсат. (Don't be afraid, don't waste time. Sit down and say "a-a" and show your tongue) [5;17]*

2. To adapt the vowels in words that come in different places in the text, to provide melody, mutual harmony.

Striking example of the assonance phenomena effective use may be the poems of talented children's poetess Kavsar Turdiyeva. In hers "Mother language", "Be in respect for a letter", "If a letter "A" makes a game", "A workshop of letters", "How letters have written a poem", "The game of letters", "If letters run away", "The Island of magic letters", "Advice in the ABC", "ABC with a riddle", "Alife ABC" series of poems the harmony of the vowel sounds, their melodic harmony with each other and the formation of a distinctive stylistic coloring are represented at a high literary level. Most importantly, with the effective use of linguistic features of vowel sounds the author was able to introduce the most important spiritual and educational goals of the educational process into their description.

For example:

*“А” ҳарфи кутиб меҳмон,
Бугун ёзди дастурхон.
Бу ойдир август ойи,
Айвондир кутган жойи.
Атроф атиргул, арча,
Аста йиғилди барча.*

*Агроном ва астронавт,
Артист ҳамда аргонавт” [4;167]*

(The letter “A” waiting for guests

Today it has set the table

This is August month

In the terrace “A” is waiting for them

There are roses, fur-trees around

Slowly all has come

Agronomist and astronaut,

An artist and an argonaut”)

26 words were used in one paragraph. The main attention is paid to repeating and inner melody of “a” sound. So “a” sound is used 23 times. Obviously, K.Turdiyeva knows well the linguistic features of vowel sounds and tries to teach them readers too.

“А” десанг ҳайрат ошар, “У” товуши мунглидир. “А” да оғзинг очилар, Бу товушлар (унлидир)”, – *says the poetess.* (When you say "A", you are more surprised, when you say "U", you are sad. Open your mouth in "A", These sounds are (vowels)”) [10;141]

Except the stylistic coloring there represented physiologic-acoustic features of the sounds “a” and “u”.

“Азиз деди Асалга: – Азим ўхшар касалга” (“Aziz said to Asal: - Azim seems to be ill”) [4;167] in this format of lines the main attention is paid to the melody of “a” sound in the words. In general, in the poetess' works there are many examples such as *“Иста илм излашга, Интил мақсад кўзлашга”, “Офтоб – осмоннинг мулки, Одоб – одамнинг кўрки”* (“Wish to search knowledge, Try to achieve the goal”, "The sun is the property of the heaven, Etiquette is the beauty of a man") [10;221] which help to show the stylistic features of "i", "o" and other vowel sounds.

CONCLUSION

The following results can be achieved in the upbringing of children with the use of such phonopoetic means:

1. Developing a child's speech. Correcting deficiencies in his speech apparatus.

2. Explain a pupil the differences between vowel sounds, to help to understand the physiologic and articulation processes in the pronunciation of vowels.

3. Create a certain image of vowel sounds in a child's consciousness.

4. Teach pupils about vowel sounds.

5. Form and develop the correct pronunciation skills of vowel sounds in a child.

As we know, vowel sounds provide pleasant, gentle and melody of the text.



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THE CONTRASTIVE ANALYSIS HYPOTHESIS: A CASE STUDY OF AN UIGHUR-UZBEK-RUSSIAN MULTILINGUAL WOMAN

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ABSTRACT

In this case study, I will observe 30 year old woman learning Russian learning Russian as L2 while her L1 is Uighur-Uzbek. As her target language quite differ from her native one I will figure out errors by comparing her L1 with L2 and make out conclusions on the challenges she faces during her language learning process.

KEY WORDS : *language acquisition, multilingual, contrastive analysis, target language, L1, L2*

INTRODUCTION

The influence of mother tongue to the language learning process has been one of the controversial issues in second language acquisition for decades. This issue have been studied from different first language background to find an accurate answer to the influence of the native language on learning a foreign language. However, this is still disputable among language teaching professionals as well as linguists and there is still no agreement at present on what precisely it contributes or how. Moreover, Contrastive Analysis theory remains an influential construct in the field of second language acquisition; using comparisons of languages to explain areas of difficulty for learners. Following such a theory may contribute to a better understanding of the acquisition process of second language structures. As a method it distinguishes between what are needed and not needed to learn by the target language(TL) learner by evaluating languages (M.Gass & Selinker, 2008). In addition, CA is a technique to identify whether two languages have something in common, which assess both similarities and differences in languages, conforming to the belief in language universals. (Johnson, 1999). Both statements indicate that CA holds a principle which is important in order to identify what are required by the TL learner to learn in TL and what are not. If there is no familiar characteristic in the languages, it indicates that the learner might have difficulty in learning the TL. While much could be said about comparing languages, a more important aspect is about the influence from TL in first language (L1).

In this case study, I will observe 30 year old woman learning Russian learning Russian as L2 while her L1 is Uighur-Uzbek. As her target language quite differ from her native one I will figure out errors by comparing her L1 with L2 and make out conclusions on the challenges she faces during her language learning process.

LITERATURE REVIEW

CA was first developed by Charles Fries (1945) as an integral component of the methodology of FL teaching (Alkhresheh, 2013). It was noted that in learning a FL, the learner tended to bring with him the knowledge of the L1, and suggested that this should be taken into consideration in teaching the L2. So, the psychological foundation of CA is transfer theory, substituting the L1 for the prior learning and the L2 for the subsequent learning. According to CA, the most effective materials for teaching a L2 are those that are based upon a scientific description of the language to be learnt, carefully compared with a parallel description of the native language (NL hereinafter) of the learner. The best way to achieve this was to undertake a comparative analysis of L1 and L2. Given this, CA assumes that those elements that are similar to the NL will be simpler to the learner, and those that are different will be difficult. Therefore, it is recommended that pedagogical materials be designed which would address the target language (TL hereinafter) in a systematic fashion based on the predicted difficulty of structures as derived from CA. It is believed that, carrying out 'CA' as well as planning the fitting course outline and instruction materials is as a result of the effort put in by Lane as cited by (Ammar and



Nina, 2006). Such analyses were envisioned to be carried out in terms of forms, meaning and distributions of linguistic and cultural units in both L1 and L2. Three major sources contributed to a general rationale for conducting CA studies: First, the observation by students of language contact of the phenomenon of interference. Such a phenomenon was defined by Weinrich as "those instances of deviation from norms of either language which occur in the speech of the bilinguals as the result of their familiarity with more than one language"(cited in Bowers, 2002, 186). The practical experience of teachers of FL and their identification of deviations attributed to the learner's mother tongue (MT hereinafter) provide the second source, whilst the learning theory of interference within L1 based on findings in psychology constitutes the third dimension. Given the above rationale, CA can be viewed in terms of three separate approaches: First, the purely linguistic approach, which maintains that CA is nothing more than contrasting for the sake of contrasting and the new knowledge it might provide. The second approach, on the other hand, maintains that CA is capable of encompassing all the errors which occur in SLA. Finally, there is a third position somewhere between these two points of view that contends that CA has been relegated much too high a position in language learning in the past, and further, on its own merits. CA does not hold a legitimate position in the general scheme of language teaching.

Some strong claims were made of the CAH by language teaching experts and linguists. Robert Lado (1957, p. vii), for example, in the preface to *Linguistics Across Cultures*, said, "The plan of the book rests on the assumption that we can predict and describe the patterns that will cause difficulty in learning, and those that will not cause difficulty, by comparing systematically the language and the culture to be learned with the native language and culture of the student." An equally strong claim was made by Banathy, Trager, and Waddle (1966, p. 37): "The change that has to take place in the language behavior of a foreign language student can be equated with the differences between the structure of the student's native language and culture and that of the target language and culture."

Such claims were supported by what some researchers claimed to be an empirical method of prediction. A well-known model was offered by Stockwell, Bowen, and Martin (1965), who posited what they called a hierarchy of difficulty by which a teacher or linguist could make a prediction of the relative difficulty of a given aspect of the target language. Further, they posited eight possible degrees of difficulty for phonological systems and 16 degrees for grammar. Clifford Prator (1967) subsequently reduced those numbers to six degrees for both phonology and grammar.

Level 0—Transfer. No difference or contrast.

Level 1—Coalescence. Two items in the LI become coalesced into one item in the L2.

Level 2—Underdifferentiation. An item in the LI is absent in the L2.

Level 3—Reinterpretation. An item that exists in the native language is given a new shape or distribution.

Level 4—Overdifferentiation. A new item entirely, bearing little if any similarity to the native language item.

Level 5—Split. One item in the native language becomes two or more in the target language.

PARTICIPANT PROFILE

The subject is my uncle's 30-year-old wife who was born in the family with Uzbek background, in one of the Uighur spoken cities of China. Although she was born in Uzbek family, but she firstly learned to speak in Uighur as her whole family spoke only Uighur, except her grandfather who was originally Uzbek from Andijan. The subject had spent 7 years in Uighur city till her family decided to move to Andijan where she started to go to Uzbek school. As she was young and surrounded with Uzbek environment in a year she had learnt Uzbek. She had code-switching as she used Uzbek only with her friends at school, yard, but with her family members she switched into Uighur. She had only spoken Uighur, couldn't write, read in it and wasn't aware of its grammar as well. She also wasn't good at Uzbek grammar during her school years as she said, she was quite good at reciting poems rather retelling by comprehending their meaning. Her family was quite far from European culture and related languages, so she didn't have any interest to learning Russian as L2 at school. Then at her twelve's she started learning Arabian language to be able to read Quran, but she only learned Arabian letters and how to read them, without knowing or understanding their meaning. At the age of 17 she started learning Uighur as its' letters were similar with Arabian, so she learned the letters easily and learnt reading in Uighur, yet cannot write in it. She tried to apply to study at Madrasah in order to be enhance her religious knowledge and learn Arabian deeper, but as she got married all her language competence left in its' that level. Years passed her children started going to Russian school and they needed help to catch up all subjects in quite unknown for them language, as the only language they knew was uzbek and at home everybody speaks in pure uzbek without any interference of Russian. Then my subject decided to learn Russian in order to understand and be able to explain given to children homework. She spent a year attending Russian courses but all her effort was fruitless, because she could not understand the grammar and notion of absolutely new for her language. Furthermore, she practiced Russian only at class and other time she used her native language, as she did not have any Russian



speaking friend or acquaintance to practice it . actually she speaks in Uzbek with her husband as he is pure Uzbek and his relatives, with her children , with her friends from Andijan only in Uzbek; but with her relatives, with her sisters, brothers, parents in Uighur. She had changed her tutors many times thinking that they could not convey knowledge to her properly and that's why she still can not learn Russian, due to tutor's poor experience and methods. After a year- break the subject started again attending Russian courses. This time she liked classroom atmosphere and tutors friendly approach, this makes her not to miss classes and learn Russian with enthusiasm. She also mentioned that she can not catch up with task accomplishment in class and her tutor is pure Russian ,who does not know uzbek, my subject can not ask questions if she misses something or can not do tasks independently unlike her group mates. However, when she is at home alone, after getting explanation in native language from me about the theme, topic, they had at class, she can accomplish task independently.

RESEARCH DESIGN

During two weeks I have observed subject's L2 acquisition and basic focus was given on grammar competence, as her new tutor started first month of the courses from introducing them basic grammar notions of Russian. The subject faced problems with differentiating gender in Russian (ОН,ОНА,ОНО) he/she/it, as in Uzbek for this is applied one word "U" . Furthermore she had quite enough errors in putting endings to the adjectives according to the phrase following them (Appendix B) as in Russian adjectives also change according to the gender, which lacks in Uzbek.

For example; Subject: |Новый тетрадь- but it should be – новая тетрадь Красный ручка-- but it should be -красная ручка

From these examples we can see that subject has negative transfer while learning L2 which does not have any similarities to compare with her L1, moreover lack of grammar competence of her native language has caused challenges on her language learning process. Besides that subjects difficulties with pronunciation should also be mentioned here, because she still can not correctly pronounce words with sounds a letters in Russian like Ы , Ъ. While observing her mistakes on her handouts I have noticed mistakes according to hierarchy of difficulty which was divided into 6 degrees of difficulty according to Clifford Plators notion and these are following ones:

Level 1—Coalescence. Two items in the LI become coalesced into one item in the L2. Gender distinction: Russian *ее.ее* (*his/her*) in Uzbek the only word for both genders "uning"

Level 3—Reinterpretation. An item that exists in the native language is given a new shape or distribution. New pronunciation of

"J" in Russian (Ж); jahon(as in English word jolly) – жук (two sounds 'dj')

Level 5—Split. One item in the native language becomes two or more in the target language. Third person pronoun in Uzbek "U" divides into three forms "ОН,ОНА,ОНО" (he, she, it)

DATA COLLECTION AND FINDINGS

Observations done on hierarchy of difficulties according to Clifford Plators reduced degrees only 3 levels were found out while contrasting 2 languages which differ from each other quite deeply. These degrees were analyzed from subjects errors done on her handout and have clarified the root of her problems which affects her language learning process.

CA is defined as a pedagogical procedure which explains errors committed by L2 learners by comparing between the two systems of the TL and NL of the learners. In other words, CA can also be defined as a linguistic comparison of the structures of two or more languages so as to demonstrate their differences and similarities. It stipulates that when the L1 and L2 are different, learning might be relatively unsuccessful or difficult. As we can see from the subject's experience where we have compared and contrasted her L1 and L2 and despite the fact that she had learned till her 27 languages which were similar to each other easier, rather the one she did not know at all, such as learning Uighur reading relying on her Arabian, which made language acquisition process faster. However, still she has incomplete base of each language that she know and learn, in terms of grammar, phonology, lexicology and each time when she introduced new topic to learn lots of questions turn around her mind and leads her to confusion during the lesson and accomplishing tasks much more slower than others.

CONCLUSION

I have analyzed Contrastive analysis hypothesis in this case study where multilingual woman's L2 has been compared with her L1. According to my findings on CAH of that the influence of mother tongue to target language is vital, it can serve as a base to L2 learning, shaping idea about language acquisition. Thus subject chosen for this theory can be clear explanation to the correctness of CAH in terms of her difficulties, errors she has been doing so far. Adopting CA theory by some of the latest studies is a good indicator to its effectiveness in describing L2 learners' errors especially those which can be due to interference from the MT. There are numerous studies that show the effectiveness of the CA. According to these studies, the knowledge about the kinds and degree of differences and similarities between languages on a number of linguistic levels helps in the process of predicting possible difficulties faced by L2 learners. From the pedagogical perspective, it could be revealed that CA helps students to see clearly some of the



problems they might face. CA remains an influential construct in the field of SLA; using comparisons of languages to explain areas of difficulty for learners. Following CA may contribute to a better understanding of the acquisition process of English L2 structures. It could be said that one of the undoubted merits of CA is the fact that it offered a natural, even if only partial explanation to the errors committed by L2/FL learners.

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TESL 5230 SECOND LANGUAGE ACQUISITION

Mas'ala: Hujjat 1 namunda bir ta'lim yozma. Tadqiqot chiqarishida bir nusxa, atada bir nusxa va yana bir nusxa ham o'qituvchida saqlanadi. Hujjatning qaytarilgan yoki taqdim qilingan nusxasi ham qabul qilinadi.

Sinf tadqiqotida ishtirok etishga rozilik

Men Najimova Nargiza AQSHning Webster universiteti magistratura bo'limining ta'lim yo'nalishi (TESL 5230) talabasi. Mazkur bo'lim talabalariga ikkinchi tili o'rgatish jarayonini tadqiqot etish maqsadida chat tili o'rgatuvchilar haqida o'zaki va yozma ma'lumotlar to'plash vazifasi berilgan. Siz ushbu tadqiqotda ishtirok etishga taklif qilinasi.

Tadqiqotning bir qismi sifatida siz bilan bo'ladigan 10-20 daqiqalik intervyu yozib olinishi mumkin. Yoki sizga yozma so'rovnomasi berilib, turli masalalar yuzasidan o'z fikrlaringizni bayon qilish so'raladi. Berilgan savollarga javob berish yoki hammaalik sizning istiyoringizda. Shuningdek, sizga yozma test yoki topshiriq ham berilishi mumkin. Barcha audio, video yoki yozma namunalari transkripsiya qilinsada sizning shaxsingiz sir tutilib, taxallus orqali beriladi. To'plangan barcha ma'lumotlar faqat mazkur kurs, TESL 5230 da ta'lim maqsadlarida foydalaniladi. Barcha yozuvlar, namunalar va qaydlar maxfiy saqlanadi.

Mazkur tadqiqot ishtirokchisiga kompensatsiya berilmaydi. Istalgan vaqtda siz (a) ishtirok etishdan bosh tortishingiz, (b) sinovni to'xtatishni talab qilishingiz, (c) yoki siz bergan ma'lumotlardan foydalanishni to'xtatishingiz mumkin. Agar savollaringiz bo'lsa, 902121943 raqam orqali men bilan bog'laning. Shuningdek kurs TESL 5230 o'qituvchisi, Alimova Kamola bilan 94 6400887 raqami orqali bog'lanishingiz mumkin.

Sizning izroingiz mazkur hujjatni o'qib, tanishib chiqqandigingiz va tadqiqotda ishtirok etishga roziligingizni bildiradi. Mazkur hujjatni imzolab bo'lganingizdan keyin ham ishtirok etishdan bosh tortishingiz mumkin. Sizga ushbu hujjattan bir nusxasi beriladi.

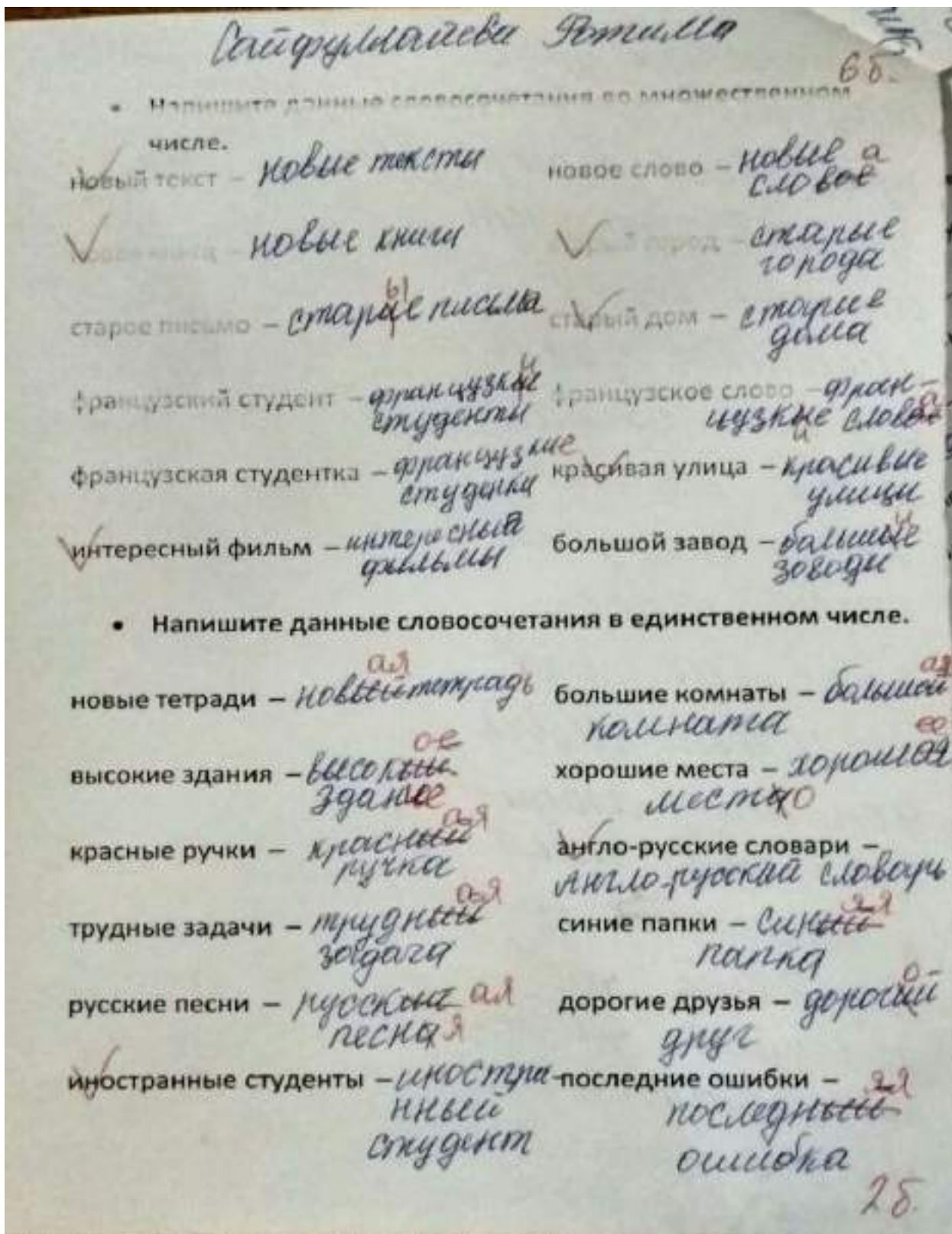
J Saipulla Buxatimayeva Prof 24.10.2018
 Ishtirokchi (yoki ona-onasi, vasiy) (imzo) Sana

Najimova Nargiza 24.10.2018
 Tadqiqotchi (imzo) Sana

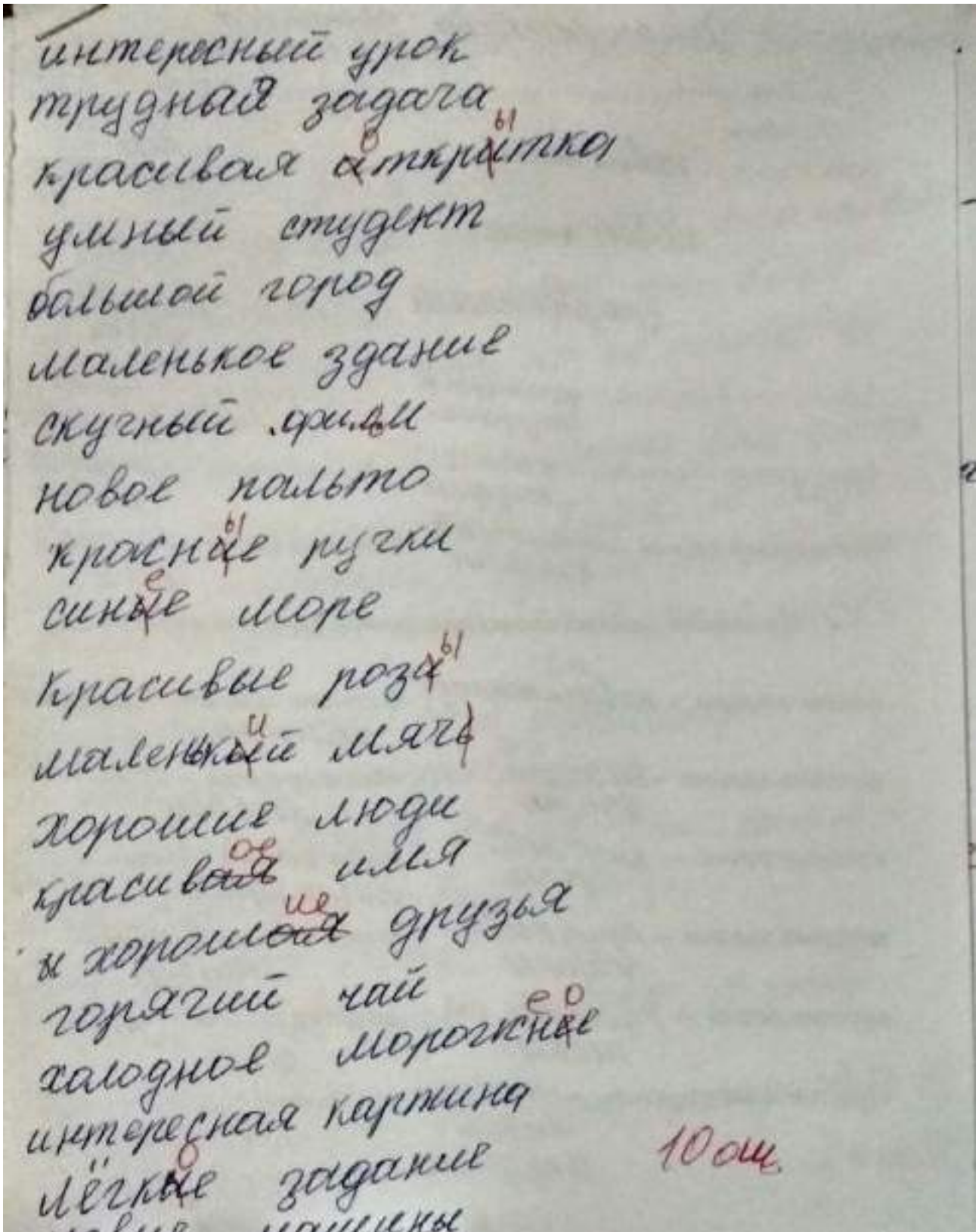
Modified form – Source: University of Illinois, Course: Second Language Acquisition (ELL 589)

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Appendix: A



Appendix B



Appendix C



Упражнение 52. В данных предложениях допишите окончания прилагательных.

1. Твой синий шарф лежит на стуле.
2. Твоя зимняя шапка лежит на столе.
3. Твоя зимняя обувь стоит в углу.
4. Твое зимнее пальто лежит на кровати.
5. Все мои зимние вещи лежат в шкафу.
6. Мой старший брат женат.
7. Моя старшая сестра замужем.
8. Мои младшие братья учатся в школе.
9. Мой друг уже сделал домашнее задание, а я пишу последнее упражнение.
10. Это последняя страница учебника.
11. Это вчерашняя газета, а сегодняшние газеты лежат на столе.
12. Зимние каникулы начинаются в январе, а летние каникулы начинаются в июле.
13. Март, апрель, май – это весенние месяцы.

Упражнение 53. Допишите окончания прилагательных в данных предложениях.

1. В нашем общежитии хорошая столовая.
 2. Рядом находится небольшой магазин.
 3. Здесь всегда есть свежий хлеб и свежая булка.
 4. Сколько стоят эти горячие пирожки?
 5. Он пьет горячий сладкий чай, а я люблю горячее молоко.
 6. Марта купила теплые перчатки и теплый шарф.
 7. Мы купили спортивные костюмы.
 8. Я купил синий костюм, а мой друг – черный костюм.
 9. Сейчас мы делаем домашнее задание.
 10. Мой друг повторяет старый текст, а я учу новые слова.
 11. Саша и Миша – мои младшие братья. Они хорошие друзья.
 12. В этом киоске всегда есть свежие красивые цветы.
- Вчера я купила там крупные красивые и белые розы.

24

Сайт учителя. Р

8,5

Appendix D



THE ROLE OF ECOTEXTS IN FORMATION OF ECOLOGICAL CONSCIOUSNESS AND ECOLOGICAL CULTURE AT PUPILS

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ABSTRACT

The article highlights the fact that the formation of environmental awareness and environmental culture in students from primary school in the educational process is a topical issue of today. It has been shown that the use of ecotexts is effective.

KEYWORDS. *language, ecology, text, ekotext, ecological consciousness, ecological culture.*

INTRODUCTION

There given different definitions to the term ecology in the science because many other inter subjects have appeared and got important research objects in it. For example: human ecology, demecology, social ecology, ecosystem's ecology, biosphere ecology, chemical ecology, biochemical ecology, macro ecology, global ecology. V.V.Koloshyan supposes: "Modern interpretation of the term ecology is not limited with definition of our environment but covers all spheres of a human activity. Such wide and right understanding of ecology makes it possible to use it as a universal factor in all fields of human activity." [1;292]

As we know, ecological consciousness and ecological culture is one of the holistic parts of the educational process and as a man's complex worldview consists of some stages. In this process, it is advisable to use ecotexts, considering as one of the specific, holistic forms of language. There are reflected nature, its unique beauties, plants and world of animals, people's relationship to them and ideas about nature protection. It's well known that our nature is multifaceted. Cities and villages, mountains and plains, water and waterless lands are totally differentiated from each other. And the attitude to the wealth of nature is not the same. Somebody tries to protect and to pass it to the next generation when another one is busy by destroying it. Based on this, today, one of the main demands to the process of education is the task to form ecological culture and

ecological consciousness among pupils beginning from the primary school.

MAIN PART

We suppose, such a large-scale and benevolent work should be performed in the following directions.

I. It is necessary to use following type of texts for understanding and feeling unique and irreplaceable beauties of our nature, heavenly lands, majestic mountains and magnificent plains, pure waters, fertile lands, clear and peaceful sky, various plants and unique animal world to pupils. In these kinds of texts the natural landscapes are described through the specific describing meanings, adjectives, synonyms, repetitions and phrases. There are two aims: the first one is to form and develop a sense of enjoyment of nature and feeling of its beauty in the hearts of pupils; the second one is to develop students the skill of appropriate use of words and the wealth of mother tongue.

1. "You can not get enough of the nature of these places. It shines in different ways depending on the seasons and acquires beauty. If you are here in winter months, it will also have its own pleasure. The mountains and hills are dressed in white, with coming spring the silver streams like pearls from the peaks begin to sing, and the blossoms, crimson tulips bloom and shine like flowers sewn on the blue suzan of nature spread on the hills". [2;201]

After reading these type of texts it is appropriate to ask questions that encourage them to think and to be creative.



1) What kind of place is talked in the text about?

2) After comparing, tell us the similarities and differences between this place and the place you live.

3) Why does man strive for nature? What are its beauties?

4) Have you ever been to mountains and hills? Tell us about them.

5) Explain the meaning of phrases “the mountains and hills are dressed in white”, “the silver streams like pearls from the peaks begin to sing”, “the blossoms, crimson tulips bloom and shine like flowers sewn on the blue sultan of nature spread on the hills”.

The above mentioned type of texts encourages students to care for the world of plants. Precisely that the productive use of texts about keeping nature clean and preserving the flora will have a high efficiency on the educational process. In this way we can develop students' worldview and form their ecological culture.

The above noted texts help to learn to feel and enjoy the beauties of nature.

II. In order to form ecological consciousness and ecological culture it is not enough to feel and perceive the nature by people. The main task is to develop the sense of kindness and compassion to it. Of course, each man, as a part of nature which “feeds and dresses” him, must love it and be thankful. In this case, naturally, the use of ecotexts involving great concepts as Mother Nature, motherland and birthplace will give high results in the process of education and upbringing.

Because the Motherland is not only the mountains, hills, trees, buildings where you live, the Motherland is the greatest feelings of nobility inheriting from generation to generation.

1. “A wonderful gift of nature is our Mother Earth. The earth is the mother of all wealth and blessings. To love our Mother Earth is to love nature, to protect it and landscaping the environment. Why do we call it the Mother Earth? Because, after birth, we breathe with its air. The first step we make on its bosom. It dresses, feeds and cares for us. We grow and develop in its arms. If your mother gives milk, your father gives salt, Mother-Earth gives bread, water and life ... That is why it is associated with the name of the most honorable person - mother.” [3;160]

Questions for to students:

1) What do you understand by the word Motherland?

2) Why do we call our birthplace - Motherland?

3) Why do not the people living in the mountains, hills, desert steppes exchange their lands for riches?

4) What do you understand by the meaning of the sentence “Mother-Earth gives bread, water and life ...”?

5) “To love our Mother Earth is to love nature, to protect it and landscaping the environment”, What can you tell about this sentence?

III. The next step of developing ecological consciousness and culture is connected with forming feelings of preserving and protecting natural resources. Here the following ecotexts may help.

1. Rustam looked straight into his eyes: “In the meetings and conversations at school how many times you said to protect nature and animals world. But you ... It means we must follow teachers' advice but not for his actions!?”

– “If I said so”, - said doctor Kamol, - “I was right”. “The nature is our wealth but everything is for a man. There is nothing more valuable than a man”.

Davron continued: “It is not right to destroy everything hiding behind the notion – there is nothing more valuable than a man!?”

A doctor became angry after these words:

– “Who is destroying everything?! Stop chatting zany!?! Have you ever seen me here before?!”

– “If you come one time, this man comes then another one, if everyone comes once and hunts, will be here any animal?” [4;83]

Questions for discussion:

1) What do you understand by “A man is a part of nature”?

2) Why do people refer to the nature badly?

3) Is it right to cut down trees, to destroy plants, to harm animals?

This kind of ecotexts calls students for vigilance and caution. Remember us that protection of nature and its beauties is a holy duty of each one.

2. – “Sister, if nobody throw nothing into water, will there flow clear, clean water in our river?”

– “Of course, Tahir. This is the beginning of it. Look, such clear water” - my sister pointed to the valley. [5;168]

These kind of texts teach children to keep water clean.

IV. In this stage people make conclusions about nature and its destiny. The most important thing is that people pay tribute to the cases happening around them. The ecological consciousness will have formed at them and on the base of it the ecological culture will appear and develop.

1. This story happened 20 years ago... Now there are not those gardens and groves. Children of Mingbulok haven't even seen wild rabbits and hens. The destruction of orchards, vineyards, groves, and



the extermination of animals and birds seem to be caused by the same doctor Kamol, brigadier, policeman, and others like them. Who else knows ...
[4;83]

The following questions may be asked on the base of the text:

- 1) Let's discuss about the nature of your birthplace.*
- 2) What is your attitude to the hunting of animals?*
- 3) What are the negative consequences of the complete disappearance of deserts and seas?*
- 4) Tell us about how the drying up of the Aral Sea is affecting on the Central Asian climate, the way of people's lives in this region.*

CONCLUSION

These ecotexts help to grow up young generation fully developed and call for pupils concern with a feeling of love and compassion to the nature and its parts: ground, water, air, plants and world of animals. After all, our highest aim is the same, to grow up spiritually rich, physically healthy and harmonically developed generation.

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SOME CONSIDERATIONS ON THE WAY TERMS ARE USED IN THE EXPRESSION OF ARTISTIC WORKS

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ANNOTATION

The article explores the use of terms in fiction as a means of expressing value in connection with the writer's mentality. The introduction of the terms vertically and horizontally in fiction is illustrated by the works of Askad Mukhtar.

KEYWORDS: Pragmatic purpose, artistic purpose, scientific and lexical means, metaphor, horizontal and vertical communication, blocks of text

DISCUSSION

Terms that are used in artistic literature are characterized by their ability to attract the reader's attention. In the 80s of the last century, despite the stage of development of science and technology and the abundance of popular scientific publications, the scientific lexicon in fiction was considered as a foreign, specific (specific) element for the literary text. It is no exaggeration to say that the use of scientific and lexical means in a literary text is a change in the literary language and the realization of the writer's artistic purpose. In connection with the idiolect of the writer, the elements of the language of science and technology are "copied" by the author into the literary language (text) in such a way that the reader is not able to notice the violation of style. In our view, the process of incorporating scientific elements (terms) into an artistic (poetic) text is a fact that does not require proof. By its very nature, artistic discourse is polystylistic. In it, different tools can be synthesized. Including terms that can be used to give the same meaning are no exception.

Nowadays, the best issue on the agenda is to treat those who need help to disseminate rational artistic images badly and to cut off artistic and scientific thinking based on their results. Indeed, metaphor is regarded by linguists not only as a feature of language but also as a way of knowing. Particular

attention is paid to the role and value of metaphors in scientific research. Because metaphor is a product of the writer's creativity and liberates the scientist's thinking. For example, G.G. Kuliev emphasizes that metaphor is very important for the verbalization of new knowledge. In this case, "finding a metaphor encourages you to find a specific word", and only then "the period of categorization of metaphorical language begins." Nevertheless, the use of metaphors in the scientific and artistic fields has its own specifics. In a scientific text, logical and coherent content is important, while in a literary text, "content acquires aesthetic significance only on the basis of a certain form." The language of literature is figurative and ambiguous. The language of scientific literature should be neutral, unambiguous and "unnoticed".

"Language is a weapon for science," R. Bart writes. That's why it's important to make it as transparent and neutral as possible. "For literature, language is "being," "the world in which it lives." For the language, the literary content in the general case is no different from the scientific content. Because there is no scientific matter that has escaped the attention of artistic literature, which is able to imagine scientific knowledge in its entirety, divided into different directions. It is the breadth of the scope of the subject that forms the basis for the inclusion of various methodological tools in the scope of the speech structure of the work of art. In particular, we can



analyze the transformation of terms into a generator of pragmatic goals, based on the works of the famous writer Askad Mukhtor.

We begin the analysis with Askad Mukhtor's "Buronlarda bordek halovat." The protagonist of the work, Mardonkul Zargarov, is a geologist, a highly qualified specialist and a unique person. This is evident not only from his activities and works, but also from the specific level of reflection expressed through the elements of scientific discourse.

Zargarov explained to his wife, Fatima, "Life seems to go on in search of something. The search seems more interesting than the discovery itself, I wonder. When I stop, I feel like I'm drowning." Mardonkul Zargarov can see events that are not related to his profession with a different perspective. For example, during the conversation with Gita, who works in the mine, he gets the following bite: "But here the ore is cleaned from the chaos. The people of this place are gradually becoming pure metal, without any impurities. You should not be afraid of people. Be afraid of yourself." Thinking about why Gita wanted to run away from the mine with her husband, Zargarov skillfully uses terms such as "ore" and "pure metal" in his speech to better explain the nature of the incident to Gita and influence her. As a result, the terms introduced as analogies play a key role in the full delivery of the load imposed on the listener.

For Zargarov, as we have already mentioned, his profession and life are intertwined. His unique thinking and worldview can even be seen in his description of people. "I get told a lot about it," he said. "But I'm sure that every bad person is like a bucket of ore, even if it's just a grain of gold."

Here not only the terms but also the metaphorical adjectives that are associated with them are highlighted. Apparently, despite the predominance of terms in the separated text, the description has a sign of empathy and comparison, attracting the reader's attention.

It is noteworthy that the situation at work is completely different - Kumtov, desert, geologists Mardonkul Zargarov: - "I received a stern warning - what to do. Am I going against the obkom because I have a big caliber?" For him, eternity, eternity, and freedom were all associated with this desert, where all things were entrenched. The general words in this description, the usual metaphors, give the work an epic distance. As of for thousands of years, all people seem to have thought and spoken about it.

Thoughts on eternal topics take on a new tone, which is unconventional for literature, with the involvement of scientific information, and sound convincing. The weight of these thoughts is borne not by the use of terms alone, but by the protagonist as a whole who sees existence through the prism of

geological science, who can ask the right questions, and who can philosophically observe and make his own decisions.

Seeing terms only within the boundaries of the receptive sentence is not enough for their essence, however, important features of the terms become clear against the background of a broader linguistic context. With the range of its functions, the terms move almost throughout the text, not only providing thematic development of the text, but also deepening it polysemantically, as well as adding to it the subtleties of connotative-stylistic paint. At this point, it is appropriate to focus on two more points in the example of the same text. First of all, it is expedient to distinguish between horizontal and vertical relations in the interconnection of sentences within the text, as well as in the connection of terms with the main - introductory sentence (as well as with other sentences in general). Given the participation of terms in the formation of blocks of text, that is, the fact that they are indicators of the existence of both horizontal and vertical connections between sentences, we observe how important the terms are in the text. For example:

Weinstein was later renamed the "Doctor of Dust Sciences" for an interesting work.

Both types of relations should be taken into account when studying the use of terms in a literary text. It is worth noting that such relationships are especially noteworthy in the literary text. From these considerations, it becomes clearer that a small passage cut from the text is not sufficient to assess the poetic, aesthetic value of a word or other unit in an artistic text. Since the essence of an aesthetic sign cannot be fully expressed in syntagmatic or broader horizontal relations, it is necessary to work with a coherent artistic text or a larger piece of text that is sufficient for the expression of vertical relations.

One can fully agree with the idea that a whole literary text or a larger piece of text is needed to visualize a vertical relationship. The vertical connections of terms in the text can be both with the previous context (this situation is more common) and with the next context. The term "Doctor of Dust Sciences" quoted above has a vertical connection with the relevant passage in the previous context and at the same time with the following passage that follows five or six paragraphs:

Weinstein's "eureka" began this morning. He tried more and came to the firm conclusion that a thick layer of wind-blown sand covered the insulators, the traverses, and by night frost or dew, a circuit was formed and the "candles" were lit.

It is no secret that a person's behavior in the process of activity is reflected in his speech. In a work of art, the writer feels the need for a variety of



linguistic means in expressing the pragmatic purpose, the manifestations of the hidden private content associated with the inner purpose of the subject of speech. In the same process, the terms are placed in the play as a product of the artistic goal and perfectly express the pragmatic burden placed on them.

For example:

I am amazed that you drive such a big car like a toy.

"I hope I won't become a "painter"," I told him.

In this text, the appearance of hidden private content related to the internal purpose of the subject of speech is expressed using the professional term "painter". It is necessary to get acquainted with the full content of the work in order to understand the illocutive purpose inherent in the spoken word expressed by the term in this text. A young reporter who came from the newspaper to photograph the protagonist, Khurshida, says he will be photographed in front of a cotton machine he has not picked. Khurshida and Tursun compare this process to the term "painter". They pragmatically represent this process in secret, and no one understands the essence of the term except the two.

In conclusion, the two communicative-oriented terms are a unique, most convenient tool in describing a particular event or protagonist from different perspectives in an artistic text, as well as in creating a polyphonic-polyphonic image. The terms have a special lingvopoetic significance as one of the most influential lexical phenomena that allows the writer to realize his various artistic goals. Terms are also one of the tools involved in the formation of a writer's unique individual style, for example, in the sources we analyzed, it became clear that terms, in particular, have become an integral part of Askad Mukhtor's artistic style.

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THE ROLE OF EQUAL CONJUNCTIONS IN THE SYNTACTIC FORMATION OF APPLIED DEVICES IN THE UZBEK LANGUAGE

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ANNOTATION

This paper interprets the principles of syntactic derivation of equivalent linking devices. In this case, we see that equivalent conjunctions: and, both, but, however, or, etc. are used as syntactic derivation operators of adjunctive devices. The article notes that these conjunctions come from a continuous tone break at the beginning of the last sentence (with the exception of the rest conjunction) and can be the semantic and syntactic basis for the formation of this sentence as an indication of thought expressed in leading sentences.

KEYWORDS: *adjunctive devices, derivative structure, equal conjunctions, preposition, main sentence, syntactic derivation, tone, operands.*

DISCUSSION

When studying the syntactic derivation of adjunctive devices, it is first necessary to pay attention to what syntactic situation causes their formation. Syntactic forms, in turn, are directly related to the law of unity and contrast of speech with language. After all, the fact that language materials are intended for speech in the human mind does not mean that they are actively used in speech. Therefore, any sign of language is virtual until it is concretely used in speech.

The transfer of language signs to speech undoubtedly requires a certain level of speech. Accordingly, the specific meaning of each word finds its expression in the sentence structure.

Any form of a phrase or sentence is also a syntactic form that ensures the expression of not only a single word taken, but also the general meaning that the linguistic symbols convey in an organized manner.

But syntactic forms require different appearances. It is this that forms the basis for syntactic derivation and at the same time determines the norm of measurement of semantic and syntactic relations. In other words, each of the message weights given in our speech is represented by specific syntactic forms. When we study adjunctive devices as a separate type of syntactic forms, we see that they, in turn, come into being in different ways and methods.

Various equal conjunctions may be involved in the syntactic formation of adjunctive devices. But the meaning and grammatical functions of these conjunctions are not the same. For example, some of them perform the function of attachment, while others perform the function of opposition. Accordingly, we first comment on the syntactic derivation of adjunctive devices formed by conjunctions that perform the attachment function.

The connector is also involved in the formation of syntactic derivation of adjunctive devices. At the same time, the adjunctive is used at the end of the device: Nazirjanov said that he fell in love with it at first sight. The woman too (Sh. Toshmatov. "Ishq yangilandi", 113).

Everyone sees the world with their own eyes and feels it with their own heart. Beauty too ("Sharq yulduzi", №6, 2017).

In both of the examples given, the syntactic formation of the adjunctive devices is also influenced by the conjunction. That is why we call this word a means of syntactic derivation. However, it should also be noted that this tool serves to activate the syntactic form of the adjunctive devices in speech. The general derivation process is also directly related to a second element in the leading sentence structure – the word in the preticative function. This is because we can only imagine the structure of the product as a whole when the lead is combined with the adjunctive devices.



In other words, each of the derived structures consists of two operands, one of which requires a leading sentence and the other an adjunctive devices.

Although adjunctive devices seem to have a relatively independent syntactic position grammatically, unlike particle devices, semantically their formation is inextricably linked to the preposition. This is evidenced by the terms "leading" and "adjunctive".

The connector can also be used repeatedly in the syntactic formation of adjunctive devices. In this case, in addition to the syntactic function of the word, we observe that it acts as a sign of expressiveness:

"Nusratbek woke up in the morning ... The wind is still asleep, the fields and gardens are still." (S.Nurov. Maysalarni ayoz urmaydi, 117).

In the example given, the conjunction is used two times, the first time for a methodological purpose, and the second time for two tasks at once, i.e., as a methodological factor and a morphological means of syntactic derivation. Therefore, if we form the following form of the adjunctive devices, only the second of them will remain in the sentence. However, this linker can now simultaneously perform the functions of a syntactic derivation tool and a morphological tool that creates a sign of expressiveness:

"The wind, the fields, and the gardens are still asleep."

"And" the syntactic derivation of adjunctive devices given in the presence of an conjunction occurs mainly for the purpose of supplementing, defining, or exaggerating the content of the leading part of speech with additional adjectives. This is because the leading sentence section is a key element of the primitive structure that provides the semantic basis for the adjunctive devices. Hence, the adjunctive devices is subject to the leading sentence in terms of the fundamental structure of the sentence, regardless of whether it has a separate level.

The adjunctive devices can communicate with the device both in the lead speech "and" through the conjunction. In this case, this connecting adjunctive devices comes at the beginning of the syntactic form of the device:

1. The duty is performed in the woods, in solitude. And, finally, measures must be taken to remove the traces (H. Gulom. Mash'al, 191). (Burch to'qayda, xilvatda ado etiladi. Va, nihoyat, izlarni yo'qotmoq chorasi ko'rilmog'i lozim)

2. Then Spring ... winked, and Ulton seemed to rise from the ground. And came back to life (Sh.Kholmiraev. Olabuji, 101). (Shunda Bahor... ko'z qisib yubordi-yu, Ulton yerdan bir darajada ko'tarilib tushganday bo'ldi. Va hayotga qaytdi)

This type of adjunctive devices is similar to a joint that is connected by an attachment conjunction. If the given examples are replaced by commas, these sentences can be included in the compound sentence without hesitation. But in order to exaggerate the content of the message, to increase its expressiveness, the author chose a specific methodological way and put a full stop instead of a

comma, as a result, after a continuous pause in the second sentence, the adjunctive entered the device form.

In Uzbek linguistics, some ideas have been expressed about the strengthening of the meaning of a sentence as a result of the use of the conjunction "and". For example, we see some comments in J. Mukhtorov's dissertation on the use of this connective at the beginning of interrogative or exhortation sentences as a means of enhancing the content of the sentence.[1] However, G. Abdurahmanov denies this idea.[3]

In our opinion, we can agree with the opinion J. Mukhtorov. But the author did not take into account the semantic aspects of the preceding sentence, including when talking about the use of the conjunction "and" at the beginning of a sentence. It was necessary to keep this thing in the spotlight, since a sentence beginning with "and" conjunction is semantically and syntactically directly related to the sentence that precedes it. In other words, the second sentence is considered an adjunctive of the first sentence according to its content. Therefore, both of them should be considered as a whole, and the product of syntactic derivation – the applied product structure.

This type of derivative consists of two operand parts according to the structure of the structures, one of which is used as the leading speech function and the other as the function of the adjunctive device. The general syntactic form of the derivative device, on the other hand, occurs mainly under the influence of, and the conjunction. At the same time, the leading part of speech, unlike both the connective, is considered a secondary derivative.

Because the second sentence is semantically an adjunctive to the first, and is relatively independent in its syntactic weight.

Hence, syntactic derivation here is related in terms of content to two primordial structures, in terms of formal speech, and to the connective. In addition, and the connector also performs a methodological function, giving expressiveness to the overall content of the derivative structure and at the same time incorporating intonation into the derivation means.

The syntactic form of "and" conjunctive adjunctive devices can be complex in the form of colloquial, ambiguous, and even compound sentences. But this thing doesn't matter. Because they, regardless of their formal appearance, are part of the product structure from point to point:

1. Bu - bir tajriba, yoinki, oddiy bir mashq albatta. Va agar chuqurroq, mulohaza qilib ko'rilsa, bu - dushmaning qon chiqmas yeriga o'rilgan pichoq (H. Gulom. Mash'al, 130). (This is an experience, or a simple exercise, of course. And if you look deeper, it is a knife cut into the place where the enemy does not bleed)

2. Bahor katta, paxmoq sochiq olib tushdi. Va uni Xo'jamga otdi (SH.Xolmirzaev, Olabuji, 51). (Spring brought a big, fluffy towel. And he threw it at the Lord)

Thus, if the main operators of the syntactic derivation of the connecting devices "and" are the



connecting word and the intonation, the leading part of speech will have a secondary position in this respect.

Adjunctive devices can also be syntactically formed under the influence of opposing conjunctions after a continuous tone pause. The general grammatical appearance of these types of derivative structures is similar to that of derivative structures with a conjunctive conjunction, in the form of a connected compound sentence. Therefore, in the linguistic literature, such structures are included in the list of conjunctions connected by a contradictory conjunction. According to him, however, the point placed before conjunctions such as, but, and, is an event related to the will of the writer (stylistic principle). Sentences, on the other hand, are inseparable, they become an integral part of each other in their content and, as a whole, represent a relationship of contradiction, division or attachment.

Hence, it remains an important connecting link in substantiating that such statements are compound sentences. [6]

We believe that our knowledge and skills about speech and its syntactic management prevent us from imagining a compound sentence in this way. Second, the occurrence of connecting means at the beginning of a sentence after a continuous (after a period, exclamation, or question mark) pause is at the discretion of the writer (speaker), depending on his style of speech. But this does not mean that the connection exaggerates what the writer wants. Because both the writer and the speaker are always surrounded by the external environment of the language, and in harmony with the demands of this environment, some elements of speech are exaggerated and, as a result, the effectiveness of the speech is increased. That is why the study of adjunctive and particle devices is one of the main tasks of expressive or methodological syntax. [2]

In addition to the above, as long as the components of a compound sentence express a sequence, one is not separated from the other by a continuous tone break. Otherwise, the sequence, the relationship of alternation, loses its value. Adjunctive devices, on the other hand, are always separated from the main sentence by a continuous tone pause. For example:

1. - Xudo davlatingga baraka bersin. Chiqar ukangni aravaga. Lekin o'zing piyoda ketasan, ot urinib qolgan (X.To'xtaboev. Qasoskorning oltin boshi, 26). (May God bless your wealth. Get your brother in the cart. But when you go on foot, the horse has been tired)

2. Shuning uchun ham biz o'g'limizning otini Botirali qo'ydik. Ammo umri o'xshamasin (H. G'ulom. Mash'al, 363). (That is why we named our son Botirali. But we wish that his life will not be the same)

In the first of the examples given, we see that the adjunctive is coming together as a device without a conjunction. Its syntactic formation as a compound sentence is, of course, inextricably linked with tone. However, when an application is conceived as a device, the "but" conjunction first comes to mind as a derivation tool. It is this word that makes it an adjunctive of the leading sentence, both semantically and syntactically.

In the second example, the adjunctive device seems to be slightly different from the previous one. First, at the moment the adjunctive device comes in the form of a simple sentence. Second, in the function of the syntactic derivation operator but the word is involved. However, both of these differences have no effect on the overall content of the adjunctive device. This is because, regardless of whether the syntactic volume is large or small, they are formed according to the general derivation rule. The content and syntactic weight of derivation operators are also equal.

It should also be noted that tone also participates in the syntactic formation of adjunctive devices that contain opposites as a secondary derivation operator. Therefore, the symbolic operator of the syntactic derivation of the adjunctive devices - the opposing connector - is pronounced in a stronger tone than the other components of the sentence.

The semantic basis also becomes part of the leading sentence in the syntactic formation of adjective conjugation devices. Because the adjunctive device complements or interprets some aspect of the meaning expressed by that part. In this case, the shape of the derivative structure does not always come in the form of a complex sentence:

1. - *Bir so'z aytolmayman, sarkarda. Ammo bu sirni ochmaguncha*

qo'ymayman (Mirmuxsin. Temur Malik, 149). (I can't say a word, Commander. But I will not leave this secret until I have revealed it)

2. *Bu g'oyat xatarli ish. Ammo biz ko'rquymaymiz (H. G'ulom. Mash'al, 128). (This is a very dangerous job. But we are not afraid)*

3. *Oraga bir oz jimlik cho'kdi. Ammo bu sukunat qiz qalbini tinchitish o'rniga*

battar dukillatdi (H. G'ulom. Mash'al, 55). (There was a moment of silence. But this silence, instead of calming the girl's heart, made it worse)

We see that the first of the given examples comes in the form of independent simple sentences, and the last two in the form of a compound sentence. But in all three examples, the order in which the adjunctive devices communicate with the leading statements is the same. In other words, adjunctive devices were created to interpret a piece of leading speech. In the first example, the adjunctive serves to fill in and interpret the semantic aspects of the words in the prepositional function of the device, in the second example in the predicative function, and in the third example in the possessive function.

Opposite conjunctions can also be used in pairs as part of adjunctive devices. But in such a case, for the syntactic derivation of adjunctive devices, they are an integral operator of a whole style:

G'isht kerakmas, semon poydevorning ustiga paxsa ursa juda antiqa chiqadi. Ammo lekin, hamma o'z devorini o'zi uradi (S.Ahmad. Ufq, 49). (No bricks are needed, and if the cement hits the foundation, it will look very antique. However, but everyone hits their own wall)



Apparently, the adjunctive formed after the continuous tone pause after the lead sentence uses a pair of opposing conjunctions within the device. Some sources suggest that the meaning of the contradiction may be sharper and stronger in the use of this analytical pair of opposites, and that the meaning of the second component may be emphasized.

For example, S. Solikhojaeva thinks so. [3]

Of course, S. Solikhodjaeva came to this conclusion as a result of checking the use of adjectives in the second component of the compound sentence after a continuous pause. But in our view, antithetical conjunctions, no matter what the content of the sentence, are not intentionally used in pairs to reinforce meaning. Because the reinforcement of meaning is felt in each of the opposites.

Their use in pairs is related, firstly, to the speaker's speaking ability and style, and secondly, to which dialect he represents. For example, the dual use of opposites as "but" and "however" is more common in the Fergana Valley. But no matter what, both pairs of opposites that come in pairs perform the same syntactic function. We therefore study them as a whole, as operators of syntactic derivation. In fact, they both have the same power in terms of function and content, and perform the same functions both in the context of a compound sentence and in the context of an adjunctive device. [5] Therefore, even when we remove one of these connectors from the adjunctive device, the other can fully control the syntactic formation of the sentence, and the expressiveness in the sentence retains the character.

However, in addition to the above, the "but" contrast conjunction can also be used with "and" conjunction in the adjunctive device.

In our opinion, this place serves as a special place to increase the expressive power of the words "and" connector "but" and as a result, the application is surrounded by the main operator of the syntactic derivation of the device but the opposing conjunction:

Hamiyati toptalgan Javlonqul masjididan chiqib, uch-to'rt javonbachchani yoniga olib, mahkamaga yuguribdur. Va lekin yurt hokimi «Minba'd bu ish mening tomonimdan sodir bo'lmagan», deb qasam ichib, tonibdur (X.To'xtaboev. Qasoskorning oltin boshi, 139). (As soon as Javlonqul left the mosque, he took three or four young men with him and ran to the court. But the governor of the country swore, "Never, this was not done by me")

In the given example, the product structure consists of two operands. At the same time the adjunctive plays an important role in the syntactic formation of the device and in its connection with the leading sentence but the opposing link.

However, given that the "and" conjunction is also one of the key factors in expressiveness and is used in conjunction with the "but" conjunction rather than with other opposing conjunctions, it should also be noted as one of the similar derivative means. As mentioned, and the derivative activity of the conjunction is observed from the

opposite conjunctions to the word "but". Therefore, it is not used with the conjunctions "but" or "however". In other words, the "but" or "however" conjunctions are used alone as an operator of the syntactic derivation of adjunctive devices:

1. *Baraka topsin, dalaning ishi ham, uyingning tashvishi ham shuning boshida...*

Ammo qizi tushmagur o'qishga ishqiboz (H. G'ulom. Mash'al, 52).

2. *Ish bilan ovunib ketib, barzangi yigitni esdan chiqarib yubordim. Biroq u*

meni unutmagan ekan (S.Siyoev. Yaxshilarga yondoshdim, 41).

Thus we see that equal conjunctions and, both, but, however, therefore, etc. are used as syntactic derivation operators of adjunctive devices. It took into account that these conjunctions come from a continuous tone break at the beginning of the last sentence (except for the rest conjunction) and can be the semantic and syntactic basis for the formation of this sentence as an adjunctive to the idea expressed in the leading sentences.

In this type of adjunctive devices, although their semantic relationship with the preposition is significant, it is noticeable that the syntactic relationship is not inextricably linked to the prepositional participle. Because participle devices are mainly formed as a specific part of the preposition, adjunctive devices form as a separate sentence and serve to fill, define or interpret the content of a part of the preposition and form a structure when taken together with the preposition. Therefore, the main clause with adjunctive device is a separate operand of syntactic derivation.

In the process of interaction of these operands, there is a strong need for operators of syntactic derivation (connecting words, intonation).

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THE ROLE OF TEACHER PERSONALITY AND METHODOLOGY IN ELT CLASSES

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ABSTRACT

English as a world language is becoming more and more important in our culture, thereby affecting the English classroom and its participants. The whole process of teaching English has been changing during the last decades and so have the students. They already start learning their first foreign language at a primary school level and teachers have to be flexible to enable students to learn. Thereby, teachers not only educate students what English is about and how it works, but also the usage of it and particularly communication skills. This article researches methods of teaching students to a foreign language using the language as means of intercourse, while a leading principle is the principle of a communicative approach.

KEYWORDS: *Controller, assessor, manager, resource, participant, investigator, role model, constructivist teaching, constructivist activities, modeling, coaching, scaffolding.*

DISCUSSION

Every student has a different ability while learning a second language. Some grasp it easily and develop a sympathy to it, others struggle and have difficulties which could lead to being demotivated and lack of interest. This leads to the question what an English teacher can and has to do, in order to teach students successfully. Nowadays teachers are supposed not only to educate, but also to create a suitable environment for learners.

First of all, it is necessary to perform many different roles in the classroom to fully achieve the best learning development. Roles which have its own characteristics, work differently and have various aims. Secondly, this leads to the question “what a role actually is” and I will give a short definition of it. Afterwards the various roles will be introduced and then described in detail. What are the characteristics of a role? What does it mean to perform it? Why is it necessary to do so? These questions will be answered later on. Finally, I will give a conclusion and a brief overview about the portrayed roles. Before describing the various teacher roles, it is important to explain briefly what a „role“ actually is. The Oxford Advanced Learner’s Dictionary describes a role as:

“The function or position that somebody has or is expected to have in an organization, in society or in a relationship.”

Whether we realize it or not, we are acting in roles in many situations on a daily basis and while doing so we are confronted with expectations. Thereby, one can act in various roles: For example, a manager acts in an authoritarian role at work, as a loving father at home and in his football team as a captain. These roles differ from each other in a way of choice: he can choose whether he wants to act as a manager or not, but his children will always perceive him as a father. He does not have to be the captain of his team but by fulfilling this role his team members expect him to act appropriately. The same happens when one chooses to be a teacher.

In the English classroom a teacher fulfills many roles with different aims. The most common thought of a role might be the fully organized classroom in which everything is controlled by the teacher (Controller). Also teachers are expected to assess their students by correcting them and giving feedback to their development and performance (Assessor). Another very important role is the one of the classroom manager. Good organization is a key



factor in planning a syllabus, a lesson or just a particular task and helps to discipline the students (Manager).

Furthermore, the teacher acts as a resource by helping the students if necessary. He/She provides additional information or simply talks to them providing the resource of spoken language (Resource). To increase the effectiveness of learning it is sometimes necessary to act with the students on the same level as a participant. Not only will the teacher gain an insight about the way students develop, but also give them the chance to interact with someone who has a much higher comprehension of the target language (Participant).

A role not directly related to the behavior of the teacher is the investigator. The teacher analyzes the way of teaching, observes what is going on in the classroom and investigates the ways students learn, with the aim to develop his/her methods of teaching (Investigator). The last role is the role model which goes beyond the classroom influencing children throughout their whole life. Honesty, affection or fairness for example, are not only learned from parents but also from teachers at school. Therefore, a teacher must be fully aware that his behavior in general has a huge impact on the personal development of his/her students. (Role Model)

Additionally, it is important to mention that roles also differ in their influence on the lesson and whether they are fulfilled actively or rather passively. The following diagram shows an overview about the different roles, whether they can be seen as active or passive and how far they are related to each other: As I said the role as a controller, standing in front of the class, talking to the students and giving instructions, might be the most common role of a teacher.

Harmer points out that teachers, fulfilling this role, control not only what the students do, but also when they speak and what language they use." Everything what happens in the class is controlled by the teacher and is in his/her responsibility. He/She educates the students by introducing the target language, giving tasks, using repetitive drilling techniques and leading them through the content. Furthermore, the teacher has complete control when it comes to the pace of a lesson, which means that everyone in the class is taught on the same level.

Characteristics of Constructivist Teaching

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

According to Audrey Gray, the characteristics of a constructivist classroom are as follows:

- * The learners are actively involved

- * The environment is democratic
- * The activities are interactive and student-centered
- * The teacher facilitates a process of learning in which students are encouraged to be responsible and autonomous

Examples of constructivist activities

Furthermore, in the constructivist classroom, students work primarily in groups and learning and knowledge are interactive and dynamic. There is a great focus and emphasis on social and communication skills, as well as collaboration and exchange of ideas [1; 7]. This is contrary to the traditional classroom in which students work primarily alone, learning is achieved through repetition, and the subjects are strictly adhered to and are guided by a textbook. Some activities encouraged in constructivist classrooms are:

- * Experimentation: students individually perform an experiment and then come together as a class to discuss the results.
- * Research projects: students research a topic and can present their findings to the class.
- * Field trips. This allows students to put the concepts and ideas discussed in class in a real-world context. Field trips would often be followed by class discussions.
- * Films. These provide visual context and thus bring another sense into the learning experience.
- * Class discussions. This technique is used in all of the methods described above. It is one of the most important distinctions of constructivist teaching methods.

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

David Jonassen identified three major roles for facilitators to support students in constructivist learning environments:

- * Modeling
- * Coaching
- * Scaffolding

Jonassen recommends making the learning goals engaging and relevant but not overly structured.

Learning is driven in CLEs by the problem to be solved; students learn content and theory in order to solve the problem. This is different from traditional objectivist teaching where the theory would be presented first and problems would be used afterwards to practice theory.

Depending on students' prior experiences, related cases and scaffolding may be necessary for support. Instructors also need to provide an authentic



context for tasks, plus information resources, cognitive tools, and collaborative tools [6; 34].

Constructivist assessment

Traditionally, assessment in the classrooms is based on testing. In this style, it is important for the student to produce the correct answers. However, in constructivist teaching, the process of gaining knowledge is viewed as being just as important as the product. Thus, assessment is based not only on tests, but also on observation of the student, the student's work, and the student's points of view. Some assessment strategies include:

* Oral discussions. The teacher presents students with a "focus" question and allows an open discussion on the topic.

* KWL(H) Chart (What we know, What we want to know, What we have learned, How we know it). This technique can be used throughout the course of study for a particular topic, but is also a good assessment technique as it shows the teacher the progress of the student throughout the course of study.

* Mind Mapping. In this activity, students list and categorize the concepts and ideas relating to a topic.

* Hands-on activities. These encourage students to manipulate their environments or a particular learning tool. Teachers can use a checklist and observation to assess student success with the particular material.

* Pre-testing. This allows a teacher to determine what knowledge students bring to a new topic and thus will be helpful in directing the course of study.

The way of leading a class depends on the character of the teacher. Every person has his/her own style of teaching. Some teachers are very open minded and do not hesitate being the centre of the lesson, whereas others prefer to let the students interact by themselves. Very authoritative persons will not have many problems with discipline but also a shy personality does not automatically mean chaos in class. Teachers who are popular among the pupils have less problems to keep them motivated and pass on knowledge. Wright quotes that "even a person who is not a born teacher can improve a lot by learning to smile, to be enthusiastic and patient, and to be constantly looking for new ways of getting his message across to the pupils."

In conclusion, what every "Controller" has in common is, that his/her language output is the central means for developing the students' comprehension and I will deal with this so called "teacher talk" in more detail later on. A crucial factor however is, that the teacher keeps in mind not to act too much. Students also need to have their own free

time to learn the treated content which means that control has to be reduced sometimes. Otherwise, one risks to hamper the student's progress. Therefore, too much talking is not recommendable as students do not get the chance to communicate by themselves.

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REFLECTION OF ISSUES OF CLASSICAL POETICS IN "ME'YOR UL-ASH'AR"

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ANNOTATION

This article is devoted to the study of Nosiriddin Tusi's work "Me'yor ul-ash'ar", a treatise on the theoretical foundations of scientific aruz and scientific rhyme, one of the components of classical poetry. The article provides information about the history of the work, its unique style, its components.

KEYWORDS: *Poetics, pamphlet, ilmi segona (Trinity of Sciences), aruz weight, aruz circles, rhyme, hurufi rhyme (rhyming letters), types of rhyme.*

DISCUSSION

Among the treatises devoted to the study of classical rhyme, Nosiriddin Tusi's "Me'yor ul-ash'ar" is an important source on the theoretical foundations of rhyme and verse. Nosiriddin Tusi was a talented poet who wrote in the genre of ghazal, qasida, and rubai. At the same time, he was perfectly acquainted with the theoretical aspects of the science of poetry. His views on philosophical, moral, and poetic sciences include "Akhlaqi Nasiriy", "Akhlaqi Mukhtashamiy", "Awsaf ul-Ashraf", "Asos al-Iqtibas", "Ravzat ul-Taslim", "Qasoid ul-Aqoid", "Tajrid ul -aqoid", "Tahriri Uqlidus", "Usuli handasa", "Shakl ul-qit'a", "Tazkirai Nosiriya". Nasiruddin Tusi's treatise "Me'yor ul-ash'ar" was written in 1253 under the influence of Qays Razi's "Al-Mu'jam".

"Me'yor ul-Ash'ar" begins with praise to Allah and na't to Muhammad (s.a.w.). Nasiruddin Tusi asked Allah for help and blessed the souls of Muhammad (s.a.w.). Then, at the request of his friend, he wrote a work in Persian on science and rhyme, which he called "Me'yor ul-ash'ar", and said that the work consisted of an introduction and two sciences (parts). Nosiriddin Tusi also introduces the introductory part of the work into 3 chapters, in which he gives information about the essence of poetry, science bade, the structure of the poem, the role of rhyme in the poem. Nosiriddin Tusi's "Me'yor ul-ash'ar", in contrast to the works of classical poetry, is noteworthy in terms of the number of bytes that reflect theoretical ideas and their practical aspects. In

the work "Me'yor ul-ash'ar" special attention is paid to the science of aruz, a large part of the work is devoted to the study of the science of aruz. The author has divided the section devoted to science into 10 chapters, gradually dividing the theoretical issues. In the first chapter, he explains the moving and quiet syllables in the poem, explaining them on the basis of letters and actions. In the second chapter, the signs and syllables of the moving and silent letters are introduced. In Chapters 3-4, the basic concepts of aruz weight are explained in the example of bytes, causal, vatad, and fossil phenomena. Nosiriddin Tusi dedicates the 5th chapter to the circles of aruz and explains 5 circles such as "Doirai mukhtalifa", "Doirai mu'talifa", "Doirai mujtaliba", "Doirai mushtabaha", "Doirai muttafaqa" by bytes. The basis of the circle "Doirai mushtabaha" is the verse corresponding to the weights of sareh, karib, munsarih, khafif, muzoreh, muktazab, mujtass:

Sareh: Boda ba man deh, tu, buto, ham yak bor.

Karib: Ba man deh tu, buto, ham yak bor boda.

Munsarih: Deh tu, buto, ham yak bor boda ba man.

Khafif: Tu, buto, ham yak bor boda ba man deh.

Muzoreh: Buto, ham yak bor boda ba man deh tu.

Muktazab: Ham yak bor boda ba man deh tu, buto.

Mujtass: Yak bor boda man man deh tu, buto, ham.

Chapter 6 of the work is devoted to the zihofs formed in the corners and corners. Nosiriddin Tusi gives a classification of the bodies that have been in force since the 7th chapter of Me'yor ul-ash'ar. Each body is explained under a separate heading. The chapter begins with a commentary on



the tawil body. The reason why the bodies begin in this order is that Nosiriddin Tusi takes as the main criterion the sequence of bodies forming the circles. The first circle is called "Doirai mukhtalifa", and the body of tawil is one of the bodies within this circle. He himself admits this: "Va ibtido ba tawil kardim, chunonki Xalil ibni Ahmad kardast va digaron ba o' iqtido (payravay) karda" Hence, Tusi chose the style of Khalil ibn Ahmad in this way. On this basis, a series of madid, maklubi tawil (application), basit, wafir, perfect bodies; Hazara, rajaz, ramal, which are included in the Doirai Mujtaliba; "Doirai mushtabaha" includes sareh, karib, munsarih, khafif, muzoreh, muktazab, mujtass; There is information about the muta qarib and gharib (mutadorik) bodies included in the Doirai muttafaqa, and the weight of each byte is explained on the basis of bytes and verses. Nasir al-Din Tusi followed a strict order in giving verses: he first quoted from the Arabic bytes and then explained the weight through the Persian bytes. In particular, referring to the body of gharib (mutadorik), he emphasizes that this body is not independent, that poems are seldom written at this weight, and that its sound form is formed by repeating the rukun eight times in the example of Arabic verses:

Xorabu qavmahum summa lam ar'avu
 - V - / - V - / - V - / - V -
 Li - s - salohi - l - lazi xayruqu vohinu
 - V - / - V - / - V - / - V -

Part 8 of the work explains non-column concepts, while Chapter 9 is in the form of a dictionary section. It contains the terminological meanings of the concepts related to the petition. The last 10 chapters of the section discuss the benefits and interests of the petition. The second subject (part) of "Me'yor ul-ash'ar" is devoted to rhyme, and this part is also divided into 10 chapters. The first chapter of the section provides information about the concept of rhyme and its structural structure. Focusing on the importance of rhyme in poetry, Tusi points out the role of rhyme in the science of classical poetry by quoting Khalil ibn Ahmad's views on the role of rhyme in Arabic poetry. Chapter 2 deals with the role of action and letters in rhyme, which Nosiriddin Tusi first explains in the example of Arabic literature. According to him, in Arabic poetry, the letter of the rhyme is 6: ravi, 3 letters before the ravi: establishment, entry, ridf; 2 letters following the narrator: wasl and sensitivity. The play presents 6 types of rhyming movements: rass, ishbo, hazv, tavjih, majro nafoz. Thoughts about rhyming movements are very brief, and it is only explained which letter movement they are. Nosiriddin Tusi recommends the word "rohati man" by combining their initial letters so that the names of these movements remain in the reader's memory. In the

next chapter, the rhyming letters and movements are explained in detail. And it goes through this kind of rhyme. As Tusi points out, no poem can be without rhyme: " Va raviy agar muharrik buvad, qofiyaro mutlaq xonand va agar sokin buvad, muqayyad xonand" It should be noted that these types of rhyme are based on the action after the narrator, and the play also focuses on the types of rhyme based on the letters that come before the narrator: murdaf, institution, mujarrad and mukayyad. Chapter 4 is interpreted in the example of words as a gradual continuation of Chapter 3. For example, if the letter l in the words "jamal-khayal" is considered ravi, the letter o is ridf. As the rhyme is called murdaf rhyme, these words belong to the type of mukayyad murdaf rhyme. Part 2 of Me'yor ul-Ash'ar, Chapter 5, is entitled Rhymes. And in this chapter, some of the shortcomings of rhyme, the unusual rhyming of words, are discussed. In this way, 6 forms of rhyming accusations are explained. Chapter 6 examines the rhyming letters and movements in Persian poetry. Arabic and Persian sources are compared. In this section, special attention is paid to the concept of radiph. Interestingly, the scientific rhyme information in the following sections is explained on the basis of theoretical sources in Persian literature. Thus, while the first 5 chapters of Part 2 devoted to rhyme are devoted to the theoretical views on rhyme in Arabic literature, the next 6 chapters are comparatively studied in the sources of Persian literature on the theoretical foundations of scientific rhyme. The above titles are repeated, and they are explained in the example of Persian literature. In particular, when reporting on rhyming offenses, 4 forms of this condition are mentioned in Persian literature without naming them. "It simply came to our notice then. And there are two kinds: first, the difference is hazv, for example, "mard" and "durd" and "vird". And if the rhyme is absolute, because "dasta" and "rusta" and "basta" are infallible. " Hence, Tusi distinguished two types of rhyme-related deficiency in rhyme: mukayyad and absolute rhyme. In the words "mard", "vird", "durd" the vowels a, i, u are indicated as defects in the ridge. The book "Me'yor ul-ash'ar" is written in a unique style, the theoretical ideas are presented in a clear, simple form.

"Me'yor ul-ash'ar" as one of the most important sources on the science of rhetoric and the science of rhyme, its research provides an opportunity to understand the theoretical foundations of the "science of the triangle" and to analyze the classical texts accurately and completely.



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TEACHING READING TO LEARNING-DISABLED CHILDREN

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ANNOTATION

Language teachers come across many barriers they have to overcome when they are teaching a foreign language. One of the problems that the educators who work with young learners face is identifying learning-disabled children and finding proper methods to teach them. The thesis is intends to explain the term of learning-disabled children and suggests some suitable strategies that an EFL teacher can utilize while teaching a young individual who have difficulty in learning such as a dyslexic child.

KEY WORDS: *dyslexia, learning disabilities, proper method, LD child, build a sentence, synonym game, mnemonics*

DISCUSSION

Learning-disabled children who have problems with learning, or it is common acronym as LD, may have to face some trouble or difficulties dealing with doing such tasks as listening, speaking writing and reading, as well as calculating mathematical operations and some others. For example, we normally call the disorder that is related to reading problems “dyslexia”. As reading is one of the fundamental skills to succeed in other fields and subjects in primary school settings, teaching children with learning disabilities how to read properly is crucial for both teachers and parents at the same time. The following methods and steps are recommended to adjust and modify the issues with learning disabled children based on long-conducted researches and practices:

Firstly, pay attention to what a young learner already knows and make an attempt to boost his or her reading comprehension looking at from this angle. For example, if a young learner is conscious of the ABC, you can commence demonstrating him or her a bit short, words containing only one syllable when you illustrate them on a sheet of paper or a whiteboard. You also may enable the learner to be engaged in controlled or guided practice, by suggesting words saying aloud and then encouraging your learners to repeat the word when you stress

every letter. To make a word, speech sounds of letters collaborate together and showing this collaboration can make a sense to understand the word more.

For the next step, in the form of another guided activity, to practice reading and writing with various short syllable words together can be one of the effective activities. Utilizing the board to show or correct your mistakes also keeps a young learner more vigilant and aware. At the time of pronouncing a word, asking a learner to indicate the word follows this. Then you can oversee if the kid can truly recognize every aspect. Next, you should present the child a chance to read an item as you demonstrate the correct.

In the third step, start making short sentences and expressions for the child as you keep displaying correct accent. By displaying words for the child and correcting him when necessary if he pronounces words incorrectly, you construct reading accuracy in the child. Keep his attention on each word when you pronounce it. Motivate him to repeat each word after you say. You should repeat the process for guided practice in writing, reading and speaking the sentences.

For the fourth step, by practicing the previous three stages as much as necessary for the child you make him feel comfortable as he shows his reading comprehension. Provide writing and reading drills to improve and foster the child’s literacy abilities.



Include different games that make opportunities available for pleasant interaction while your students learn. Your learner may like games including working with a board such as Boggle or Scrabble Jr. Imaginative word games such as "Build a Sentence" or "The Synonym Game" may also create enjoyable learning atmosphere. With the help of "Build a Sentence," take an object and ask your child to represent a word that illustrates it. When you have one word, you work together to make a sentence by means of the adjective to depict the object. With "The Synonym Game," encourage your youngster to find as many synonyms for an item, for example, go, run, sit, come and hurry [3], for example.

Present relaxed reading texts, stories and books to the kid. Make him sure that reading a book tracks the identical methods, techniques, approaches as your practice drills.

In the final stage, you should adjust technology comfortable for every separate child when possible, as LD Online suggests. Scan reading resources and materials to create digital text that you may modify the child's needs. For instance, enlarge the font size or change the background color. Similarly, it uses highlighting to show words read and increases vocabulary comprehension [3].

In addition, we have a term that is becoming common among professionals and is called "sight words". Young learners who have dyslexia may also have some difficulty learning sight words. However, with the right approaches, we may help those young children learn sight words easier. First, you can go into detail when you are teaching a complicated word, for instance, *through* is a bit difficult word to recognize. You can teach your learner, initially, showing the word, then, reading aloud, finally, showing the orders of letters or spelling it. This, at the same time, helps them to better understand and recognize the word next time. Creating a memory aid can be another strategy to work with complicated words. At times, young children may find it difficult to remember so they may associate that word with the one makes them remember mnemonically. For example, they can be learned by the sentence "they eat yoghurt". Another person that emphasized the effectiveness of mnemonics when teaching dyslectic children is Ch. Freeman. She claims mnemonics may help children to remember words that have difficult spelling. She gives the word "because" as an example. "Big elephant can't always use small entrance" may assist a person to remember the word mnemonically for both meaning and spelling. Using different senses is suggested as another way of learning and understanding the word. A teacher may encourage the learners to spell or tell the word aloud slowly while writing the word imaginary in the air or scratchy surface. B. Cunningham also speaks about

the importance of multisensory techniques that can be used by educators to teach their learner. He says that children can write things on the sand or shaving cream that can be more fun even. You also ask your child take a mental picture of something described on the card and after some time to tell the name of it giving letters of it one by one [1]. K. Johnson (2019) suggests exploring word history so that a learner can understand better. For example, the reason behind silent letters e in the words have and give may give a hint to the learner to better understand, remember and learn the words and others of such type [4].

Taking all into the consideration you should be careful when you work with learning disabled children and never discourage the child. Consider that you can chose proper methods and ways to teach them according to their abilities and disabilities, advantages and drawbacks, opportunities and limits, learning conditions and atmosphere. No separate method can work always properly so you should choose a diamond among different stones.

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INDIAN TRADITIONAL MEDICINE IN WESTERNS EYES

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ABSTRACT

Ayurveda is a traditional healing method in India for more than 5000 years, preserved from ancient pieces of literature, namely Atharva Veda. Ayurveda is believed and practiced commonly in India to promote robust human life and eliminate diseases as a person can maintain balanced constitutions which are called Tri-Dosha. The method is especially present in the practice of traditional medicines and is used to prescribe certain forms of treatment upon particular diseases. As such, herbal and related drugs are those of the most important parts mentioned in the traditional Ayurvedic texts. Despite their curing potential claimed in the texts, many cases now have been reported poisoned due to the use of these drugs. In the scope of our paper, the study would unveil the picture of the practice of Ayurvedic medicines nowadays and entail some answers for the reasons of drug poisoning.

INTRODUCTION

Ayurvedic drugs for internal usage exist in varied forms: pills, decoctions, wines, teas, syrups¹. Usage of Ayurvedic drugs can include home-remedy supplements such as milk, water, and honey. In this report, the two most concerning ingredients of drugs are herbal formula and metal-based therapeutics. The herbal formula includes medicinal herbs and decoctions with herbs. Herbs are thought to be “natural” and safer compared to biomedicine. They are also easy to be found and bought freely in markets and the internet under lax regulations².

Heavy metal, in its term, is defined as metals with high densities, usually found in industrial processes. Heavy metals have been used as both raw and organic materials in Ayurvedic practices of medicine since ancient times³. They were thought to bring harmony and balance between the human and the universe. Heavy metals were viewed as a vital role in supporting the immune system; without them, the condition of human health could be harmed by diseases. Throughout some sorts of the boiling process, the toxicity in heavy metals could be reduced. However, the use of heavy metals in Ayurvedic drugs did not obtain desired therapeutic effects but sometimes caused more severe harm to patients.

Metal-based therapeutics is called to the attention of the public about its adverse effects and its inability to detoxify completely of heavy metals. Arising concerns over the heavy materials take part in the main topic of the safety of Ayurvedic drugs. The three most common metals are found in Ayurvedic products: Lead, Mercury, and Arsenic. While Ayurvedic drugs are widely used in India, there is no global consensus on the limit level of heavy metals, up to which these metals cause harm the health. Rather, the limiting boundaries to the consumption of each metal are more country-specific according to their population health. This report also relates to WHO’s recommendations of the levels of these heavy metals in drinking water and draws some correlations of heavy metal usages around the world.

Heavy metals

Mercury’s medicinal use raises the central attention of safety concerns in Ayurvedic drugs. From Ayurvedic conceptions, mercury elements in the drug could strengthen potency and eyesight, and further, obliterate all diseases⁴. The medicinal effects and uses could be traced back to the oldest works of literature, the *Carakasamhitā* and the *Suśrutasamhitā*⁴. The purification processing of mercury is also mentioned; one primary method includes grinding



mercury with decoctions of leadwort and aloe juice for several days. Mercury was viewed as a core to unite with other metals and could be 'sealed' by sulfur to reduce its toxicity.

Mercury mostly found in Ayurvedic drugs in the form of Mercury sulfate. WHO's experts recommend not ingesting and avoiding any physical contact with the mercury compounds which cause irritation and severe burns. Daily intake of raw mercury is recommended below 0.05 ug from drinking water, and any of its vapour is avoided. The threshold level of mercury in drinking water should be about 0.01 mg/L. People exposed to mercury at a concentration of 0.02ug/L for several years could show some abnormal signs of nervous systems⁵.

Another most harmful heavy metal residual in some Ayurvedic drugs is lead. Practices of medicine involving lead have faced strong criticism from several international organizations including the WHO and the World Bank. Lead detrimentally affects the mental health of children; children exposed to 11ug/dl of lead could drop 11.1 points below the average IQ. Although lead, in Ayurveda, is applied in treatment as it reacts with certain drugs, the lead residual after treatment is retained high in the blood enough to cause mental illnesses^{6, 7, 8}.

Arsenic is recommended from the WHO guideline below 0.01 mg/L in drinking water. Data collected from three countries Australia, Canada, and the USA suggest people are exposed to 20ug of Arsenic per day from food and water and each country has its threshold for human arsenic exposure⁹. Inorganic compounds can be used to treat leukaemia and psoriasis; organic compounds can be used in antibiotics for treating protozoal disease. However, arsenic can induce cancer when the high level of arsenic is present in water. Airborne arsenic can lead to lung cancer as scientists find a linear relationship between the disease and arsenic inhalation¹⁰. Although less poisoning than lead and used in treating cancer such as leukaemia, Arsenic has been on the decline of its use to reduce unexpected causes of poisoning.

Although case reports of heavy metal poisoning are rampant on scientific journals and newspapers, there is a lack of surveillance on domestic, commercial Ayurvedic drugs¹¹. Most surveys reveal heavy metals are also prevalent in Ayurvedic drugs in international markets. The amount of these metals is substantially high in a concentration above the regulated threshold. Daily intakes estimated from manufacturers' dosage of these metals surpasses 100 times of standard intakes¹². Many case reports from different countries' local markets record the issues of heavy metal contaminations over the intake limits^{13, 14, 15, 16}

Uses of heavy metals have become prevailing in manufactured Ayurvedic drugs. From a report of 230 random Ayurvedic drugs bought from the Internet in US and Indian markets, one-fifth of the drugs are reported containing lead, mercury, or arsenic. The effects of these metals remain unknown¹⁷.

Several case reports show lead remained in the body after treatment causes adverse effects on patients. One recent case from Iowa Department Public Health, Iowa, USA reports 40% of 115 participants from a small town who had consumed Ayurvedic complementary medicines imported from India were tested had elevated blood lead level above 10ug/dl¹⁸; at this blood lead level, a person can suffer from decreased cognitive performance and risk increasing blood pressure. Moreover, children and young adults are the most vulnerable to exposure to heavy metals as the potential of these heavy metals is out of control and children are more likely to receive the medicines from their parents without any consultation from doctors¹⁹.

Herbal formulations.

A factor contributing to the safety concern of Ayurvedic drugs is uncharacterized chemical constituents of Ayurvedic herbs. In principle, herbal drugs in Ayurvedic are not supposed to be extracted into individual components. Instead, these herbs would be kept comprising of multiple chemical constituents²⁰. Chemical constituents can contribute synergetic effects on diseases; for example, reserpine, a chemical from *Sarpagandha* is only effective for treating hypertension if it is reserved with other constituents in the herb. However, certain chemical constituents in herbs can lead to side effects because not all chemical components are beneficial to treating diseases. For example, herbs in evening primrose oil are used for treating dermatitis contain γ -linolenic acid which lowers the seizure threshold, making herb users more prone to seizure²¹.

Heavy metals can also contaminate herbs due to the metallic impurities released from industry or polluted areas²². It is worth determining the detailed concentration of each heavy metal if they are used in practices and assuring the complete removal of impurities²³.

Clinical research and approval of Ayurvedic drugs passed to markets.

Drugs before approaching markets need to undergo several clinical trials. There are three main clinical phases tested on human models to guarantee the effectiveness and safety of tested drugs: after drugs have been proved safe and effective on animal models such as mice, phase 1 begins as drugs would be consumed by healthy volunteers to observe how



drugs are metabolized and excreted. Phase 2 is initiated to test the effectiveness of drugs; either the target drugs or another drug such as a placebo would be consumed by a group of patients. Phase 3 would scale up the number of drugs to be tested on different populations of several hundred people; at this phase, the target drugs would vary in dosage for each group of people^{24,25}.

The practice of Ayurvedic drugs has been deeply rooted since ancient times, and much Ayurvedic medicine has been widely used nowadays, especially among 80 per cent of the population in India. However, by advance in biomedicine and technology, the practice of herbal drugs could now be tested on its effectiveness and safety. Through more comprehensive screenings, several herbs are shown to unable to bring out helpful treatment as expected or even cause toxic effects on patients^{26,27}. To reduce cases of Ayurvedic drug poisoning, more clinical investigations are necessary to be conducted and drugs acceptable for treatments need to pass through critical trials as above.

Clinical investigations of Ayurvedic drugs in India are also limited. Data from Clinical Trials Registry – India (CTRI) suggest that from 2012 to 2016, out of 507 clinical investigations, 38 per cent of cases come from Gujarat, 19 per cent from Maharashtra, and 10 per cent from Karnataka. These statistical data show a lack of clinical registration or research from a majority of states²⁸. Moreover, the majority of studies focuses on phase II (30.6 per cent) in which the studies were applied in small-scale population, while phase I consists of 9.9 per cent whereas 6.7 per cent in phase III²⁸.

The cost of clinical trials creates obstacles for carrying out clinical investigations. Some study designs lack consistent sample sizes, especially in Phase II and Phase III²⁹. Licensing fees also contribute a burden to examining the quality of drugs.

Manufacturing of Ayurvedic Drugs

The government of India issued Drugs and Cosmetics Rules in 1945 and amendments in 2010 about the standard manufacturing procedures of drugs. A good manufacturing practice namely comprises of assured handling of raw material, manufacturing areas, quality control section, stores for distribution, and offices for doctors and data storage^{30,31}.

In addition to the government's guidelines, manufacturers could resort to a purification process called *Shodhana* to detoxify certain poisonous herbs. Ayurveda claims there are some therapeutic values in poisonous herbs, and through the process of purification, poisoning chemical constituents in the herbs would be transformed into curative components. Purification mainly contains boiling certain herbs with a selected media, particularly cow's urine, cow's

milk, coconut water. Cow urine, for example, is one of the most prominent media used in Ayurvedic detoxification. It is observable that the process removes, to some degree, of alkaloids such as strychnine and brucine which are leading to cardiotoxic and neurotoxic effects. However, the mechanism of purification and chemistry of cow's urine remains unclear^{32,33}. Cow's urine is reported to be comprised of 95 per cent of water, 2.5 per cent of urea, and the rest, 2.5 per cent containing sodium, nitrogen, sulfur, and diluted ammonia. While Ayurveda puts much emphasis on certain hormones and minerals in cow's urine that play roles in removing poisons from herbs, more research on how these biochemical components can contribute to the purification process is still needed to clarify the reaction process. Even more, misunderstanding of cow's urine can lead to harm; the retained ammonia in cow's urine was reported to cause ocular surface injury in eyes³⁴.

DISCUSSION

Lead, one of the common metals, added to Ayurvedic drugs for treatment purposes also becomes an issue. Lead, from Ayurvedic concepts, could be intentionally added to balance the health of people because the human's body is viewed incongruent with elements in the universe¹⁸. The imbalance of these metals in the human body is thought to cause diseases¹⁹. However, it is not certain which sources the lead comes from and how added lead would benefit human health. There are many case reports of lead contamination due to the detoxification method, raising concerns over international regulations of using lead in medication.

Labelling information provided by drug markets is another alarming issue. A survey in Mumbai of drug labelling is set in 3 Ayurvedic pharmacies based on their availability of domestic, commercial drugs. Only 15 per cent out of 101 drugs are labelled with caution and warning of the ingredients and dosages³⁵. Many of these drugs could be ordered by just over the counter without comprehensive prescriptions; hence, those consuming these drugs would potentially face risks of poisoning and overdose.

According to the Drugs and Cosmetics Act, 1940, the expiry date of drugs is not generally required for domestic drugs. Many products are found unlabeled of the expiry date. This causes a problem because some herbs are only effective for months³⁵.

Regarding the materials within the herbal products, there are quite a few numbers of companies facing issues of adulteration of raw materials, making the ingredients unfit for the labelling information³⁶.



The International Ayurvedic drug market also is faced with some loopholes. The prevalence of non-prescription medicines is relatively high among international Asian markets such as one in Phoenix, Arizona of the US. These drugs do not include clear instructions and dosage per usage, or some are labelled with inadequate information such as no list of ingredients and non-English languages^{37,38}. When examined, the concentration of heavy metals surpasses toxicity levels.

CONCLUSION

Suggestions on improving the quality of Ayurvedic drugs.

Clinical research of Ayurvedic drugs plays a vital role in determining the safety of commercial drugs. Most of the Ayurvedic research focuses are conducted *in vitro*. Research on human models is deprived and needed more to provide concrete evidence for treating certain disease³⁹.

Research and validation of Ayurvedic drugs also involve many external issues. One of the main questions revolves around the means of investigation in Ayurvedic drugs. Should research on Ayurvedic drugs be as same as research on biomedical drugs? As such, there is not any clear consensus on the research method⁴⁰. However, to confirm standard, global safety in drug commercialization, Ayurvedic drugs need to undergo biomedical testing and several clinical trials. Still, biomedical testing is also faced with its control methods which commonly deal with few chemical compounds, while herbal medicines contain a bundle of chemicals inside.

Furthermore, should there be any change in ideological perspective in practising Ayurvedic medicines? Ayurvedic practices have intertwined with religion for a thousand years⁴¹. Although this relationship brought up many beneficial values in the overview of human health, certain underlying believes, nonetheless, are no longer practical under the scope of modern medicine. As have been shown, heavy metals in medicines could not prove its effectiveness in medical treatment. Even the intake of these compounds can cause reverse effects on health. It is essential to the Ayurvedic practice that needs to be altered so the practice could adapt to the new era of human medicine. If using heavy metals is causing more harm than good, why do we not look for a better practice that gets rid of unnecessary heavy metals? To change certain methods in practising Ayurvedic medicines does not mean to eliminate the root of Ayurveda. Instead, doing so would navigate the practice towards the better treatment for human health, making the drugs more of potential medicines and commercialized in the world.

For the Ayurvedic drugs become more effective, research, especially clinical investigations

should be more centred at the molecular chemistry of constituents within Ayurvedic medicines such as herbs. As we stated above, not every chemical compound in herbs could possess therapeutic potentials to treat diseases; some constituents are even inimical to the health patients. Thus, the process of purification has to be assured of eliminating all or at most unbeneficial chemicals within the medicines.

Clinical investigations are vital to control the safety and potency of drugs. Many drugs have been used in the past but now are reported causing harm to its users. Clinical research is so critical to ascertaining the quality of drugs. Even more, clinical trials were reported showing inconsistency in the number of research subjects. Especially, phase III of clinical investigation has to be implemented extensively in large-scale, different populations before the drugs are passed to markets.

Acknowledgement

Am very grateful to my study abroad students (Most of them from the US) to express their ideology about our traditional system of Ayurveda, without any hesitation with facts and figure. It shows we Indian ayurvedic scholars have to do more work to vanish their opinion. and show the right path to them.

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ARYA: A PROGENITURE INTELLIGENT ASSISTANT FOR SUPERIOR USER EXPERIENCE

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ABSTRACT

The model that is proposed in this article suggests ways to shorten the bridge between human and computer with less human intervention by using inclining concepts such as Machine Learning and Artificial Intelligence. The voice assistants that exists currently in market is capable to perform basic tasks whereas, ARYA on the other hand is a type of voice assistant such as google assistant, cortana etc. which has made it easier for the end users to perform and automate various tasks just using their voice. It has multiple advantages over other voice assistants such as face recognition, cross platform assistance and automate document modifications. These features enhance the Access Control System over the usage of voice assistant and also reduces time and complexity of doing many tasks manually.

KEYWORDS-machine learning, artificial intelligence, cross platform, face recognition.

I. INTRODUCTION

Voice Assistants (VA) or Personal Assistants have brought different user experiences to access gadgets. The VA basically functions based on the guidelines/commands provided by clients or end users through voice. VA is incorporated in almost every digital gadget like smart phones, laptops etc. Some of the examples of Voice Assistants are Cortana for Microsoft Windows, Google Assistant for android smart phones, Siri for iOS and Mac Book etc.

Usage of voice assistant has rapidly increased and this has opened the room for inclusion of many other features than the legacy assistants. Arya is one such VA that is developed to overcome the limitations that are present in other assistants.

Existing VAs such as Google Assistant and Siri are restricted to only one platform such as Android and iOS respectively as they are written in

programming languages such as C, C++ and Kotlin which are more complex to run in multi-platform. This makes them platform dependent and hence are limited to only certain community of users who are using that specific platform. ARYA, on the other hand is completely built in Python which generates python byte code internally from the source code that we write, which is interpreted by a virtual machine known as the Python Virtual Machine or PVM. Hence, we can run the same python code in Mac which was originally written in some other platform such as Windows with minimal complexity and easily.

Another feature that makes ARYA distinct from already present VAs is that it is integrated with a face recognition system, built using the Machine Learning technology with the help of OpenCV. This new feature that has been added to ARYA intensifies

the security of the system. It detects the face that is captured using the camera, from which different patterns are generated for each picture it takes, which is recognized and saved using various Machine Learning Algorithms. Thus, using ARYA we get a better Access Control System, which will take commands from a user only after it recognizes / identifies the person using the already generated patterns of existing users. After the face verification, the VA will further perform various tasks based on the user's voice command.

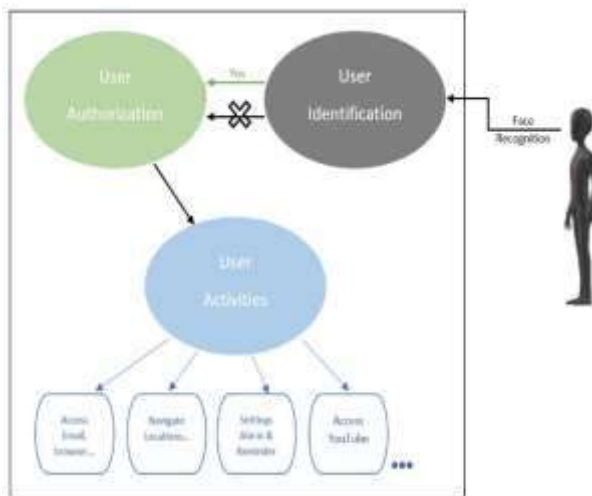


Fig 1. System model

In addition to all the features mentioned above, ARYA is also able to perform basic word operations such as creation of any word document, saving the document and can perform basic edit operations such as editing of headings, insert page breaks, insert images etc. which makes the job of document modification more easier for users.

II. LITERATURE REVIEW

[1] In this paper author quoted that Next-gen voice assistants are capable enough to recognize input in various means and process the output in the corresponding manner. Some of such input modes are speech recognition, gesture recognition. These VA's can be used in enhancement of user experience in different fields like education assistance, home automation, security control etc.

[2] In this paper author concluded researched and concluded that, Voice assistants are capable enough to perform various tasks that user instructs and commands are provided through voice. Not everyone's accent is same and different region people speak different accents of English. However, there is no much difference recorded while performing instruction test that has been done between primary and secondary English speakers.

[3] The author in this paper proposed a method on how technology can improve the mental health of elderly people. Social isolation has been a major cause for determination of life of elderly people. To minimize it, technology such as intelligent personal assistants have been introduced which can collect user's data and interact with them by using natural human voice. Hence, improving mental health condition of elderly people.

[4] Author in this paper performed thesis on how voice assistants have changed the way people interact with mobile phones or other electronic devices. Multiple assistants have been developed with best features like Google, Siri, Alexa but the choice of VAs differs with people. Survey has been conducted to determine the factor on which the choice of people for VAs depends. It has been seen that, among all the three major factors: privacy, performance and price, privacy has been the first priority of people, after which comes the performance of the VA and then the price.

[5] In this paper author stated that voice assistants interact with users based on the services that they are trained for. Using big data for training the assistant increases the accuracy in the results. The more the results are accurate, the more the users access the voice assistant.

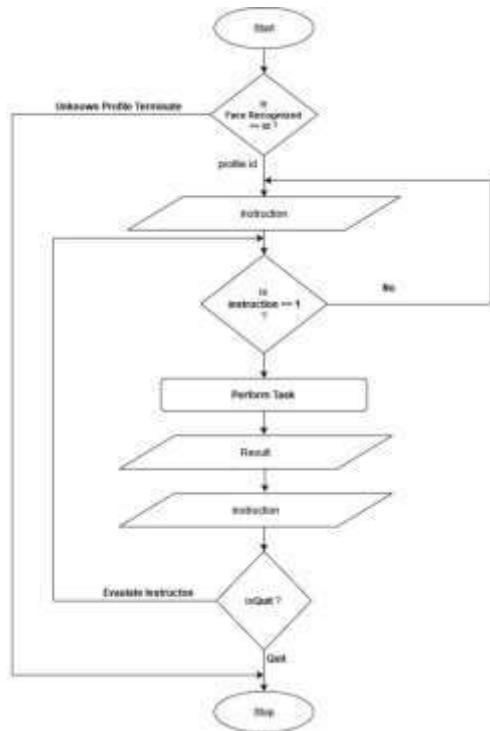
[6] In this paper author made a conclusion that privacy and performance play a vital role in the functionality of any voice assistant. Different aspects make people to access different virtual assistants. Virtual assistants have the capability to track human behavior in different environments.

III. PROBLEM STATEMENT

There are numerous voice assistants available in market which solely focuses on basic command execution that the user instructs and these are platform dependent as well. Which makes these VA's operable only by certain community of people.

IV. SOLUTION

The proposed method overcomes the snags that exists in the present-day VA's. some of the supplementary tasks that Arya performs when compared to other VA's are basic document management (creation, deletion, adding text, applying page breaks, imports images), call contacts using Your Phone application, cross platform support, face recognition for access control. The frame work that's included in the model is python and cascade files from open CV for system logic.



V. IMPLEMENTATION

5.1 Working

On detecting the voice our proposed VA ie ARYA will try to capture and recognize the face that it captures. It will check for previously saved patterns which were previously generated and saved using Machine Learning algorithms. If the patterns match then ARYA will allow its users to use its functionalities. In our project, we have given only two types of access rights to users:

- Root access
- Browse access

Once the face is recognized by ARYA, it will automatically provide the configured access rights to its user and will start operating automatically and perform task based on the commands provided by its users.

5.2 Features

Based on the voice instructions, our proposed project can perform the following task or have the following features:

- Call: can easily make call from desktop using Your Phone application automatically
- Document modification: can perform basic word operations such as creation of a word document, inserting page breaks, modifying headings etc.
- Alarm: can open and set alarms.
- Custom search: it performs all the custom search operations in Google and YouTube.
- Wikipedia: can search anything in Wikipedia.

- Multimedia: can capture and record any picture and video respectively.
- Navigation: can open google maps
- Email: can send and receive emails

5.3 Software required

- Python 3.6
- OpenCV 4.1
- SQL lite3

5.4 Modules

- Speech Recognition: Provides all the libraries required to recognize voice and convert it to text by computers
- pyAudio: It provides audio I/O library which can used to play and record audio on multiple platforms such as Linux, Microsoft, mac etc. using python.
- Tkinter: It is a toolkit provided to develop Graphical User Interface.
- Wikipedia: allows Arya to search anything inside Wikipedia.
- Google-text-to-speech: Using which Arya can respond to users in a “human like voice”.
- CV2: this module is used specifically for face recognition feature.
- Pillow: it is a python library that allows to open and manipulate images of different file format.
- pysqlite: used to connect the sqlite database using python.

VI. EXPERIMENT

- It uses face recognition to unlock the Arya & provides authorization.
- Using autogui we can make calls & email using voice commands.
- Performs basic word operations on voice commands like adding images and text to the document.
- Allows you to navigate the locations using the browser.
- Greets the users based on the time.
- Allows you to search in google, YouTube and Wikipedia for specific query.

VII. RESULT ANALYSIS

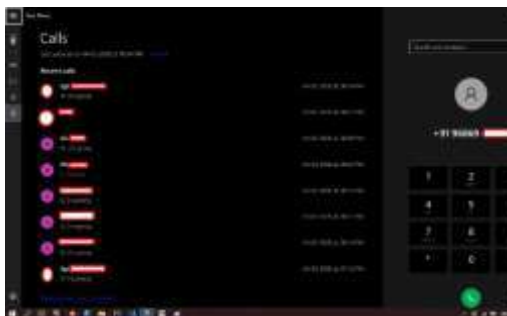
- It captures 100 images of user as a dataset and stores the user details in the database and trains the system using the dataset, after recognizing the face if the user attributes are matched up to 70% then it provides the authorization to the user.



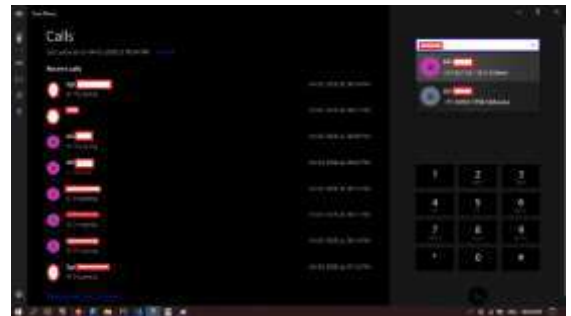
If the face attributes are doesn't match the condition then a unknowns face value is returned and the project terminates.



- On hearing the command create document, it creates a document and allow the use to perform the basic operations like adding text and images.
- On hearing the commands **call <number>**, it recognizes the phone number and makes a call using **your phone application**.



If the command is **call <name> from contacts** it searches the contact number from the phonebook and makes a call. (Note this feature solely works for windows).



- Performs basic camera operations using the cv2 modules.
- Allows us to find the location of the using google maps for browser.



- Based on the time it greets the user
- Stores the URL of the different websites to directly open the homepage. E.g. Open Facebook it uses the URL(www.facebook.com) & directly open the homepage of the Facebook in browser.
- Used autogui tools and sets the alarm on hearing the **set alarm <time>**.

VIII. CONCLUSION & FUTURE ENHANCEMENT

In this article we have used different frameworks to make a superior voice assistant. Some of the features of Arya makes it standalone when compared to other voice assistants that are available in market currently. Features that make Arya a superior among others are document management, calling contacts, face recognition etc. we can reduce the latency that is involved in face recognition and improve the document management by adding further features.

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TUTBOT: A SPY ROBOT

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ABSTRACT

The security model proposed in this article serves armed forces to identify and detect any sort of malicious activities and people around certain radius of perimeter. Tutbot is one such of an IOT model which functions similarly to a living tortoise and provides its services to the authorized personnel. The security framework that is included in the working model is developed using python and other machine learning techniques.

KEYWORDS- *security model, identify, detect, malicious, IOT model, python, machine learning.*

I.INTRODUCTION

The Internet of things abbreviated as "IoT", is a system of connected computing devices, objects that are provided with unique identifiers also known as UIDs and the capability to transfer data over a network without demanding human-to-human or human-to-computer interaction/communication. The classification of the Internet of things has advanced due to the merging of multiple technologies, real-time analytics, sensors, and embedded systems. Wireless sensor networks, control systems, automation (including home and building automation), etc., all contribute to facilitate the Internet of things. In the user market, IoT technology is most identical to the products pertaining to the concept of the "smart home", covering devices and appliances that support one or more common environments, and can be controlled via devices associated with that environment, such as smartphones and smart speakers, etc.

A rover is a land exploration device intended to move across the solid surface on a planet or other planetary mass celestial bodies. Some rovers have been designed as land automobiles to transport

members of a human spaceflight crew; others have been partially or fully autonomous robots. IOT based rovers are those which can be minimal in footprint and are capable enough to function efficiently. Rovers basically move in different directions and avoid obstacles and sometimes penetrates certain obstacles based on the algorithms that they are being programmed for. Tutbot is an IOT based rover that is programmed to capture images around specific boundary areas and send those details to authorized personnel via cloud. The main motto of this model is to identify the presence if any arsonist is present in that particular region. If we follow traditional method of assassin identification there are chances of losing lives which is not endurable. These impediments can be beaten utilizing innovation. Since Tutbot is a replica of living tortoise, the people around it ignores the existence of the model considering it to be a tortoise. Considering the worst-case scenario of someone identifying the model, no data would be stored in it as all the data that it captures and records will be stored in cloud, which helps in avoiding unauthorized access of the rover.



II. WHAT IS TUTBOT?

Tutbot is a robot especially designed for military purpose. There are many different kinds of military robots. They are Intelligence Surveillance and Reconnaissance (ISR), search and rescue robots, combat support, mine clearance, explosive ordnance disposal (EOD) and firefighting robots. Tutbot is an

Intelligence Surveillance and Reconnaissance (ISR) robot which is used to monitor and help to gather data on the field. There are totally 3 versions based on the size of the tutbots. They are Burger, Waffle and Waffle Pi.

Differences between 3 versions of Tutbots:

a. Burger

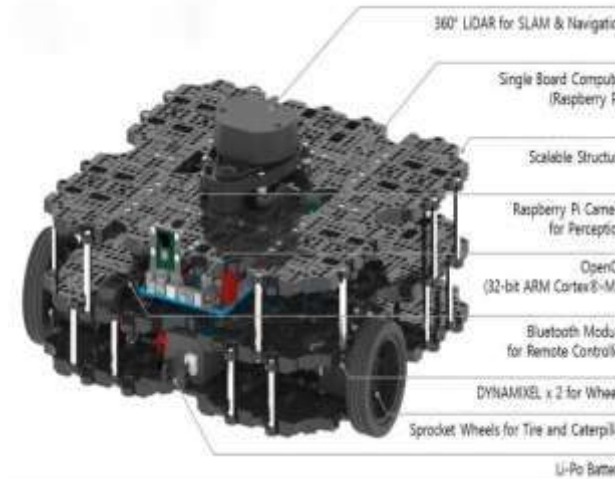


b. Waffle





c.Waffle Pie



History of tutbots

TurtleBot1 consists of a base, a battery, a power board, a Kinect sensor, a laptop with a dual core processor, and a hardware kit attaching everything together and adding future sensors. The first and the oldest TurtleBot was created at Willow Garage by Melonee Wise and Tully Foote in November 2010.

TurtleBot2 consists of a Kobuki base, a battery pack, a Kinect sensor, a laptop with a dual core processor, fast charger, charging dock, and a hardware mounting kit attaching everything together. Turtlebot2 was released on Oct 2012.

TurtleBot3 is made up of sectional plates that users can modify the shape according to their preference. Its available in three sizes: small size Burger and medium size Waffle, Waffle Pi. TurtleBot3 consists of a base, two Dynamixel motors, a 1800mAh battery pack, a 360 degree LIDAR, acamera), an SBC(single board computer: Raspberry PI 3 and Intel Joule 570x) and a hardware mounting kit attaching everything together and adding forthcoming sensors. Turtlebot3 was released on May 2017.

III.LIMITATIONS OF THE EXISTING SYSTEM

Traditional method of identifying any malicious activity or recognizing arsonist is prone to disasters irrespective of preventive measures from being caught is taken into consideration. Even if technology is used for such things with improper security mechanisms it can lead to massive destruction, it can cause loss of lives, loss of sensitive data etc. Traditional methods require lot of time and effort to master the skills and gather information and spies can be identified by the behaviour of the person and their belongings. For example, if a spy has to send

evidence to his respective superior, he/she needs to acquire the evidence, that is, the hard copy or a photo of the evidence. Capturing pictures can be of high risk as it is easy to identify that a third person is capturing picture and can cause great threat to the life of the spy and to his/her organization. Storage is another drawback when it comes to preservation of evidence the traditional way/method. Considering the previous example given above, the pictures captured should be stored and secured in the right place which cannot be accessed by the opposite party

and must be preserved in such way that it shouldn't get damaged until it is sent to its respective destination.

IV.OBJECTIVES

To overcome the drawbacks/limitations of the problems that were faced while implying the traditional methods, rovers can be used with the help IoT. Using a rover, which is a replica of some living creature (in this case it is tortoise) adds more security to the equipment from being recognised by people in its surrounding. Tutbot has the ability to capture images around it. Utilisation of these kind of models reduces the impact on limitations that exists in the former approaches. Being a robot, it has no life and hence cannot feel any external senses such as pain, heat, cold, etc. With the help of technology, it has mini cameras fitted in it which helps in capturing not only pictures but also storing them on cloud which helps it take numerous pictures. It has an inbuilt microphone, which records the surrounding noises and voices, and all this is stored in the cloud with the help of IOT.

V.LITERATURE SURVEY

The author in this article developed an IOT based rover model that is capable of moving around

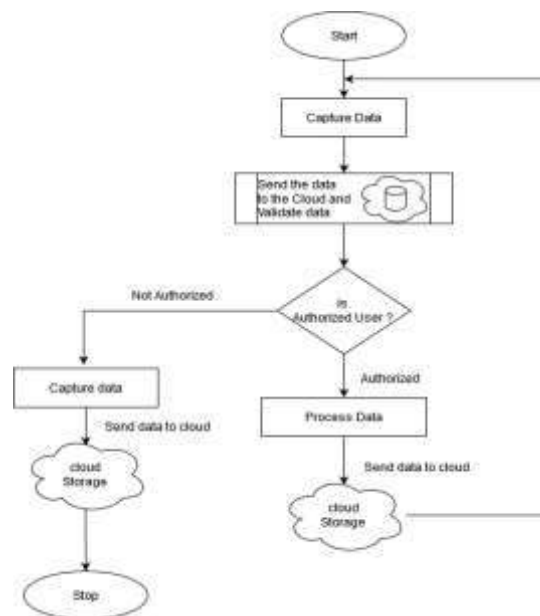


different directions and provides Vision as a service. An interesting thing that he involved in the functionality is the inclusion of MQTT protocol for video transmission, one of the key advantages of utilising this protocol is that it encrypts the data.

The field of gadgets and mechanical autonomy is loaded up with huge open doors for additional improvement of the present work. There is a different scope of sensors and hardware accessible in the market, for example, warm cameras, heat sensors and

weight sensors that can be mounted on the stage, helping in further improvement of the present abilities of the meandered. The fundamental goal is to give the concerned specialists with the device to assist them with get-together information by observation utilizing the meandered and help them to shape the technique for the salvage activity that is savvy, productive, and quick just as secure for the salvage labourers too.

VI. WORK FLOW



VII. PROTOTYPE

Tutbot works on a raspberry Pi 3 processor. It also consists of motion sensors to detect any kind of movements in the surroundings. It has an raspberry pi camera which captures images of its respective surroundings. It consists of a server motor which helps in the movement of the tutbot. It also includes face recognition.

VIII. FUTURE ENHANCEMENTS

Thermal sensors, audio capturing can be implemented. Encryption methods should be used to secure the data. Connectivity issues can be rectified.

IX. CONCLUSION

The rover model about which this article is presented about, describes it as an intelligent system that aids armed forces in difficult situations and time. This helps in the reduction of human spies trying to gather information and saves a lot of time and effort. Being small and camouflaged, it makes it hard for the rivals to recognize it as a robot and gets the job done.

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APPLYING MACHINE LEARNING MODELS IN STOCK MARKET PREDICTION

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ABSTRACT

This paper deals with the techniques of attempting to calculate the future value of a company stock or any other financial instrument which is being traded in a stock exchange. This prediction plays a great role in many financing and investing decisions. This calculation can be done by Machine learning by training a model to identify the trend from past data in order to predict the future. The main topic of study here will be the comparative analysis of the SVM and LSTM algorithms.

KEYWORDS: Machine learning, Stock price, Stock market, Support vector machine, neural network, long short term memory.

I. INTRODUCTION

Stock markets have been operating on the digital paradigm after the advent of Information Technology. Artificial Neural Networks, which serve as mathematical function approximators, make the crux of this application. The popularly implemented ANN

in use for this is the feed forward network. Apart from that there are Back propagation networks. They utilize the backward propagation of errors algorithm to adjust weights in the model. SVM (Support vector machine) Algorithm along with Random Forest has had its implementation for stock prediction, which is included. A modified type of Recurring Neural Network called LSTM is also implemented. It memorizes historical or past data for prediction. The result of this project includes a brief conclusion for how the algorithm performs vis-a-vis the real world figures thereof.

SVM and Back propagation have shown reasonable accuracy in the previous studies [1] [2] [3] [4] [5] [6] [7] [8]. We cannot afford to tweak the model to improve the accuracy as the market operates in very volatile circumstances. This involves time series problems for which we need LSTM to analyse past data and come up with predictions.

II. DESCRIPTION

Problem statement was to predict increase or decrease in price for any given day in future. I addressed this as classification problem. The main goal is to compare performance of SVM and Back propagation algorithm's results.

III. DATAFLOW DIAGRAM

The flow diagram can be briefly represented by this diagram.

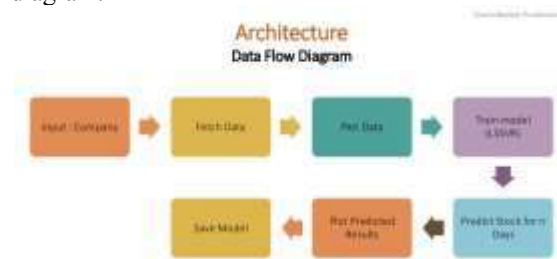


Figure 1: Data Flow Diagram

First, the past data is fetched from the dataset. Then, it's organised and plotted according to our project's requirement. There are 2 sets created – the Training set and the Testing set.

After training a model, it's tested using the test model. If the accuracy is reasonable, we can assume that the model is reasonably trained.

Once the predicted results are out, the model is saved after assessment and analysis. The accuracy of the model depends upon how the model is trained.

IV. ARCHITECTURE

The architecture of the model which we create briefly appears like this.

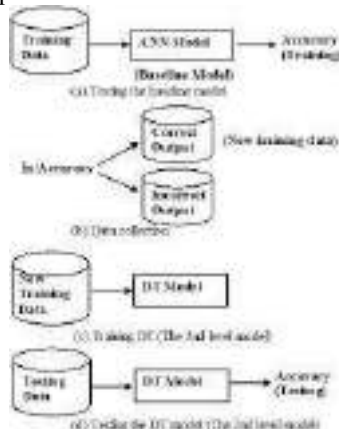


Figure 2: Architecture

V. APPROACH

The approach for this project consists of:

1. Creating dataset.
2. Implementing the algorithm.
3. Comparing result.
4. Analysis of the result.

1. Dataset creation :

Yahoo Finance contains stock prices for various companies. Hence that is Dataset here. The collected data is from January 2011 to December 2015. The 2008 subprime financial crisis created an unexpected change in the trends and hence that has been avoided. If not, it would cause unusual and unexplained behaviour by the model. [3]

The data set contains stock data of the following companies:

- Yahoo
- Microsoft

The stock dataset which we got from yahoo finance contains the following parameters:

1. Date
2. Open
3. High
4. Low
5. Close

The closing value of a day is assumed as the stock price of that day.

Parameters calculated for input dataset

The below mentioned are some of the other parameters. [9]

- **Momentum:** If price of stock is more than yesterday then the momentum for given day is +1 as there is an increase in price. It's -1 if vice versa.
- **Volatility:** Represents how big or small the changes in values are. Volatility is the difference between values of today and yesterday, divided by the closing value of the previous day.
- **Index Momentum:** Calculated based on market performance for last 3 days. It's an average of 3 days index momentum.
- **Index Volatility:** Calculated as the average index Volatility over the last 3 days.
- **Stock Momentum:** Calculated as the last 3 days' average momentum for the given momentum.
- **Stock Price Volatility:** Calculated as the average of last 3 days of the given stock.

Output: If closing stock price for a stock today is more than yesterday's closing stock price for the same stock, then the corresponding output is denoted by 1 else it is denoted as 0.

2. Implementation of Algorithms

I) Support vector machine

SVM is the algorithm used for classification problems. It is a supervised learning model with associated learning algorithms that analyzes data used for classification and also regression analysis. A support vector machine (SVM) is a supervised machine learning model that uses classification algorithms for two-group classification problems. After giving SVM model sets of labelled training data for each category, they're able to categorize new text. [10] [11]

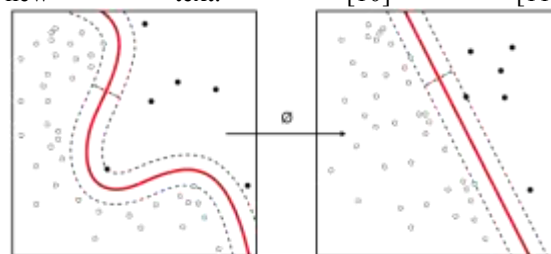


Figure 3: SVM Algorithm

SVM using Scikit Learn Library [12] has been implemented in this study. Using python codes, import the library, try SVM on training dataset and later apply them on the test dataset.

II) Long Short Term Memory

LSTM [13] stands for Long Short Term memory. It is building block of a neural network (like perceptron which is use for supervised learning of binary classifiers). LSTM is an algorithm that consists of many blocks which are used to build a Recurring Neural Network. An LSTM block is typically composed of four parts. They are:

1. Cell
2. Input gate
3. Output gate
4. Forget gate

The cell remembers values over arbitrary time intervals therefore involving the concept of memory in the LSTM model. This is part of the cell's primary duties.

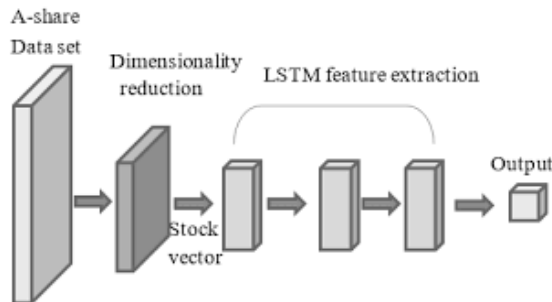


Figure 4: LTSM Model

3. Comparison of result and analysis

The purpose of this paper was to make sure that one among the many algorithms used, performs consistently and even better than others against which it has been run and tested numerous times. For each run of the algorithm, the prediction accuracy is calculated for the test data. Each algorithm mentioned above, was run and checked for more than 10 times. The same training dataset and testing dataset is never used for the same run. The accuracy results for each algorithm are mentioned below.

SVM Result

The SVM algorithm was run 30 times, as shown in Figure 6. The mean accuracy of these results is 65.20 while the standard deviation was 0.15. This shows the performance consistency of the SVM. It can be trained further with more datasets to improve the accuracy.

```
Accuracy: 65.26275848985813
Accuracy: 65.28885413267564
Accuracy: 65.19951938278632
Accuracy: 65.21216728419988
Accuracy: 64.9718585973066
Accuracy: 65.313348977558117
Accuracy: 65.27548631126288
Accuracy: 65.28885413267564
Accuracy: 65.19951938278632
Accuracy: 65.04774552583318
Accuracy: 65.21216728419988
Accuracy: 65.32599759691394
Accuracy: 65.14892889713527
Accuracy: 65.18054765866718
Accuracy: 65.37658886256497
Accuracy: 64.78214127616518
Accuracy: 65.12363245438974
Accuracy: 65.16789802925441
Accuracy: 65.0414216151268
Accuracy: 65.28173822196927
Accuracy: 65.6295453188282
Accuracy: 64.99715424818213
Accuracy: 65.29437884338283
Accuracy: 65.20584328349289
Accuracy: 65.2698824885565
Accuracy: 65.31334977558117
Accuracy: 65.11738854368336
Accuracy: 65.19319547287994
n_epoch: 38
Mean_Accuracy: 65.28015177385694
Standard_Deviation: 0.15193494335888166
total_time : 181.6788338078125
Process finished with exit code 0
```

Figure 5: SVM Result

LSTM Result

The LSTM algorithm is also run 30 times, to get a better perspective while comparing. 66.83 was the mean accuracy for this algorithm. The standard deviation was 1.36 in this case. This performs well compared to SVM. Also there is no significant fluctuation in accuracy compared to other algorithms.

```
Accuracy: 66.27886559972466
Accuracy: 68.06857477198418
Accuracy: 68.07778351482513
Accuracy: 68.2498789344347
Accuracy: 65.44484598175873
Accuracy: 66.98758985524885
Accuracy: 66.64945792462571
Accuracy: 68.28428841851661
Accuracy: 67.81884158748581
Accuracy: 67.83688112545173
Accuracy: 64.56728013766993
Accuracy: 66.51178798829885
Accuracy: 63.20778951643435
Accuracy: 66.8983883131991
Accuracy: 67.44186885858973
Accuracy: 68.19824478831182
Accuracy: 67.76882615728789
Accuracy: 65.28996738339011
Accuracy: 68.47358458896713
Accuracy: 65.42763723971777
Accuracy: 68.2498789344347
Accuracy: 66.32249182584754
Accuracy: 67.47547754259163
Accuracy: 64.3434864911375
Accuracy: 67.58989582667355
Accuracy: 66.63224918258476
Accuracy: 67.85486886749268
Accuracy: 68.09499225686688
Accuracy: 67.2861813881411
Accuracy: 64.68766133195663
Accuracy: 66.27886559972466
n_epoch: 38
Mean_Accuracy: 66.83416588919863
Standard_Deviation: 1.3644332048103173
Process finished with exit code 0
```

Figure 6: LTSM Result

VI. FUTURE SCOPE

This model can be further trained and developed to carry out advanced tasks like volume deduction i.e. volume of the stock prices which can be sold/purchased in a way which is beneficial to



the investor. Past datasets can be used to train the model to gain more accuracy and get a better prediction which has a 70% or more accuracy. With inclusion of a variety of other factors that affect the stock prices, it can be used to provide accurate financial advice.

CONCLUSION

This project is a demonstration of the application of machine learning to solve the problems in stock prediction. The past data of the stocks was considered to train the model in a way where it could find out trends and patterns and thereby predict the data in future. This project also proved that LSTM worked better compared to back propagation and SVM algorithms. For this implementation, it can be summed up that incorporation of all the factors that affect stock performance being fed into neural network with proper data processing and filtering, a model which can predict stock market prices very accurately can be developed.

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AN EMPIRICAL STUDY ON FINANCIAL HEALTH OF ONGC

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ABSTRACT

Financial health analysis is vital for an organization to measure the financial situation through the financial statement and other reports. Financial health primarily performed by the management of companies to find out the business sustainability. Ratio analysis is the most powerful tool to ascertain the financial health of the Company. A single ratio or a separate ratio would not give a holistic picturesque of the Company, therefore a single measure was evolved – by Altman, called the Z-score model. The model can provide a significant idea about the financial health of a company. In this paper the author tries to analyze the performance of ONGC, the giant in oil and gas sector, in the light of liberalization considering the period from 2000 to 2015.

KEY WORDS: ONGC, Financial, Performance, Z-score, Efficiency

1. INTRODUCTION

Financial analysis can be defined as an information processing system, which can be used to provide relevant information for decision making. Basically, an analysis of the financial statements on the basis of various performance indicators depicts the financial position of a company. Thereafter, these indicators and their values when compared with established standards, portray the financial position of a company along with the prediction of its consistency and solvency in the long-run. Broadly, to analyze a company's financial position one can adopt any of the available techniques, viz. ratio analysis, comparative statement analysis, cash flow statement, fund flow statement, decision theory, etc. These techniques prove to be highly beneficial for the investors and stakeholders to diagnose the financial strength of a company. Ratio analysis is the most powerful tool to ascertain the financial health of the Company. A single ratio or a separate ratio would not give a holistic picturesque of the Company, therefore a single measure was evolved – by Altman, called the Z-score model. The model can provide a significant idea about the financial health of a company. In this paper the author tries to analyze the performance of ONGC, the giant in oil and gas sector, in the light of liberalization considering the period from 2000 to 2015.

2. COMPANY PROFILE

Oil and natural gas industry is the most dynamic sector that witnesses rapid changes all the time. Energy is the supreme need to fuel the engine of growth. In order to achieve energy independence, ONGC was born in 1956 as a commission. Subsequently, ONGC has travelled a long way in quest of oil and gas from the north east to western region; from the southern belt to western offshore, as mission, as the main vehicle to translate the great Indian dream into a reality. ONGC was christened "Navratna" in 1994 and rechristened "Maharatna" in 2010. The company has recently rolled out its Energy Strategy-2040, road map for future growth. ES-2040 has charted out a target of achieving three times revenue distributed across E and P, refining, marketing and other businesses, four times of current Profit-after-Tax (PAT), with 10% contribution from non-oil and gas businesses and 5-6 times of current capitalization. With this road map the company is going ahead in pursuit of its mission of further strengthening its position in the entire energy value chain. The company is ready to touch new horizons of growth by resolutely focusing on its Oil & Gas production capabilities. ONGC aims to explore newer avenues for a greener planet, excel in its exploratory endeavors and evolve into a complete energy solution provider.



MISSION

A. World Class

- Dedicated to excellence by leveraging competitive advantages in R&D and technology with involved people.
- Imbibe high standards of business ethics and organizational values.
- Abiding commitment to safety, health and environment to enrich quality of community life.
- Foster a culture of trust, openness and mutual concern to make working a stimulating and challenging experience for our people.
- Strive for customer delight through quality products and services.

B. Integrated In Energy Business

- Focus on domestic and international oil and gas exploration and production business opportunities.
- Provide value linkages in other sectors of energy business.
- Create growth opportunities and maximize shareholder value.

C. Dominant Indian Leadership

Retain dominant position in Indian petroleum sector and enhance India's energy availability.

D. Carbon Neutrality

ONGC will continually strive to reduce CO emissions across its activity chain with the objective of achieving carbon neutrality.

3. OBJECTIVE OF THE STUDY

1. To evaluate the financial performance of ONGC.
2. To know the financial health of ONGC.

4. RESEARCH METHODOLOGY

The study is empirical in nature and covers a period of fifteen years from 2000 to 2015. This study is followed the secondary data sources compiled from Annual Reports, Balance Sheets, P&L accounts of the ONGC. This paper consider Z score model which was developed by Edward Altman, professor of Finance, Stern School of Business, New York University, to evaluate the financial health of a company.

5. AN OVERVIEW ON Z SCORE

The Model works with the help of Five Ratios. Those are, Net Working Capital to Total Assets, Retained Earnings to Total Assets, EBIT (Earnings before Interest & Taxes) to Total Assets, Equity to Debt, Sales to Total Assets. Financial statement can be used to analyze and evaluate the financial condition of company. Many users used financial ratios. But, financial ratio has limitation. Z-score is a method which can eliminate the limitation. Z-score was invented by Altman.

It is a linear combination of the above mentioned five ratios, weighted by a co-efficient. To calculate the Z score, the results of the five ratios are multiplied by a set of factor, the results of the multiplication are added together to arrive at the final result.

The Model is specified as:

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

This equation reflects that financial health of a company is depending upon the Z score value. If the score is high, then it is a positive sign towards financial health and vice versa. As per the Altman's interpretation if the Z score is less than 1.8, it shows the bankruptcy zone, if it in between 1.8 to 3, it is the grey zone or safety position and if it is more than 3, it indicates good financial health of the company.



6. DATA ANALYSIS AND INTERPRETATION

Table - 1

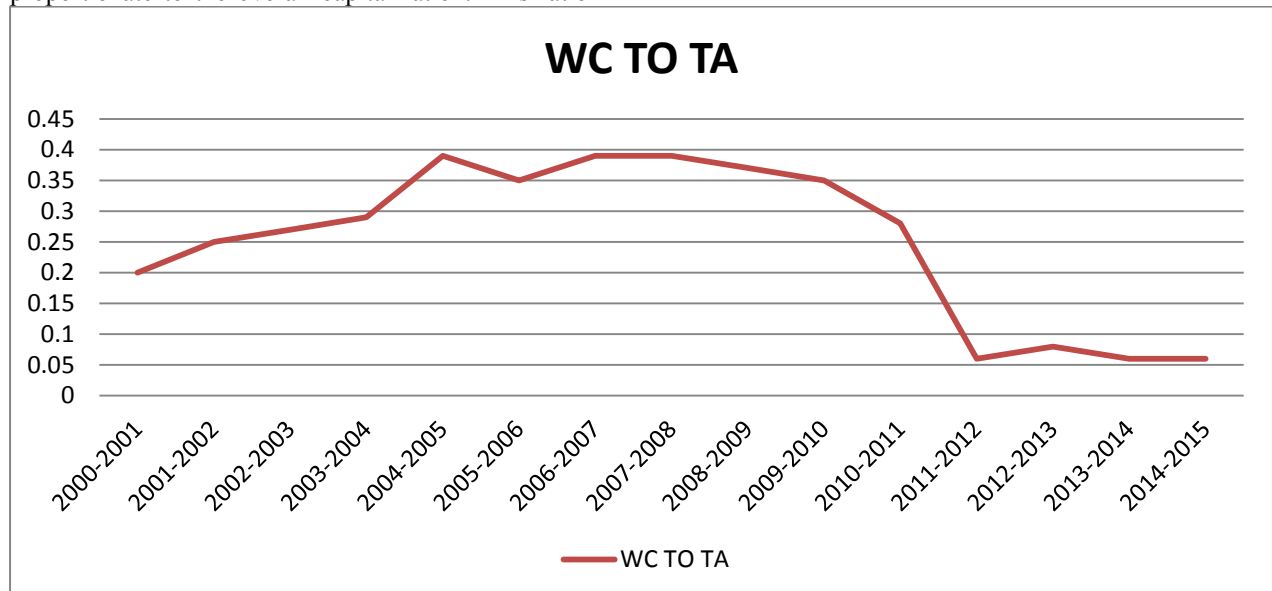
YEARS	WC TO TA	RE TO TA	EBIT TO TA	EQUITY TO DEBT	SALES TO TA
2000-2001	0.20	0.07	0.29	0.26	0.58
2001-2002	0.25	0.1	0.37	0.13	0.65
2002-2003	0.27	0.10	0.32	0.1	0.58
2003-2004	0.29	0.13	0.43	0.01	0.79
2004-2005	0.39	0.1	0.37	0.00	0.67
2005-2006	0.35	0.12	0.47	0.00	0.80
2006-2007	0.39	0.11	0.45	0.00	0.84
2007-2008	0.39	0.11	0.40	0.00	0.77
2008-2009	0.37	0.09	0.37	0.00	0.75
2009-2010	0.35	0.09	0.40	0.00	0.65
2010-2011	0.28	0.08	0.29	0.00	0.55
2011-2012	0.06	0.11	0.29	0.00	0.55
2012-2013	0.08	0.07	0.27	0.00	0.58
2013-2014	0.06	0.07	0.27	0.00	0.54
2014-2015	0.06	0.05	0.23	0.01	0.51

NOTE: Evaluating financial health of ONGC through five ratios

A. Analysis and interpretation of Net Working Capital to Total Assets

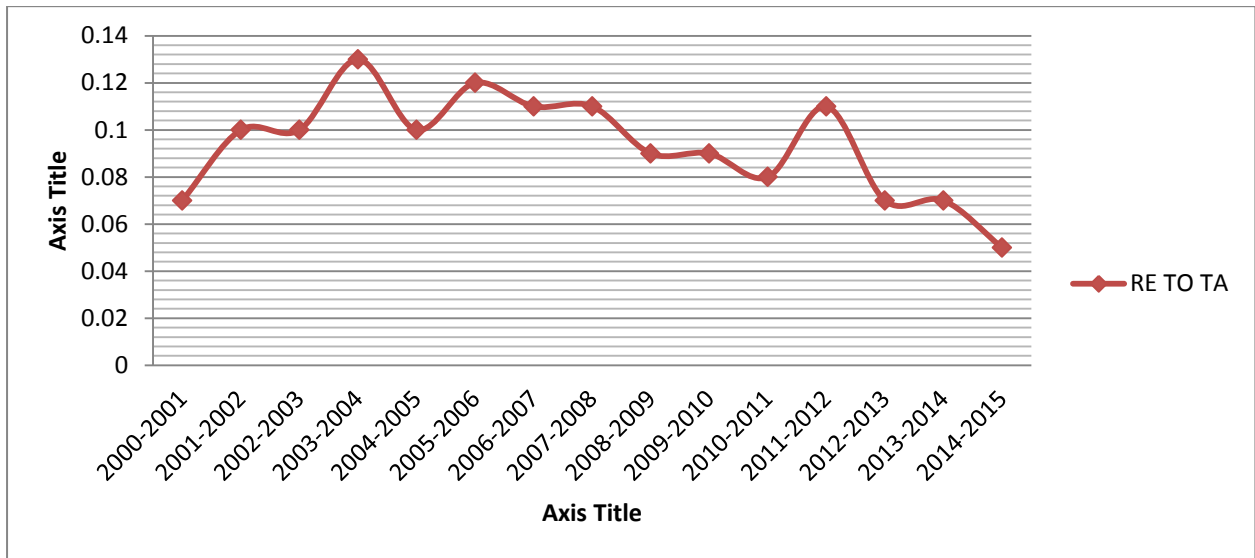
This ratio shows the net liquid assets of the firm proportionate to the overall capitalization. This ratio

clearly reflects both the liquidity and size characteristics. The ratio is important in finding the liquidity position of the company.



Working capital to total asset was increased from 0.2 to 0.4 in 2005-06 and fluctuating up to the period 2009-10. After 2010-11 it was decreased largely and stood at 0.06 in 2014-15.

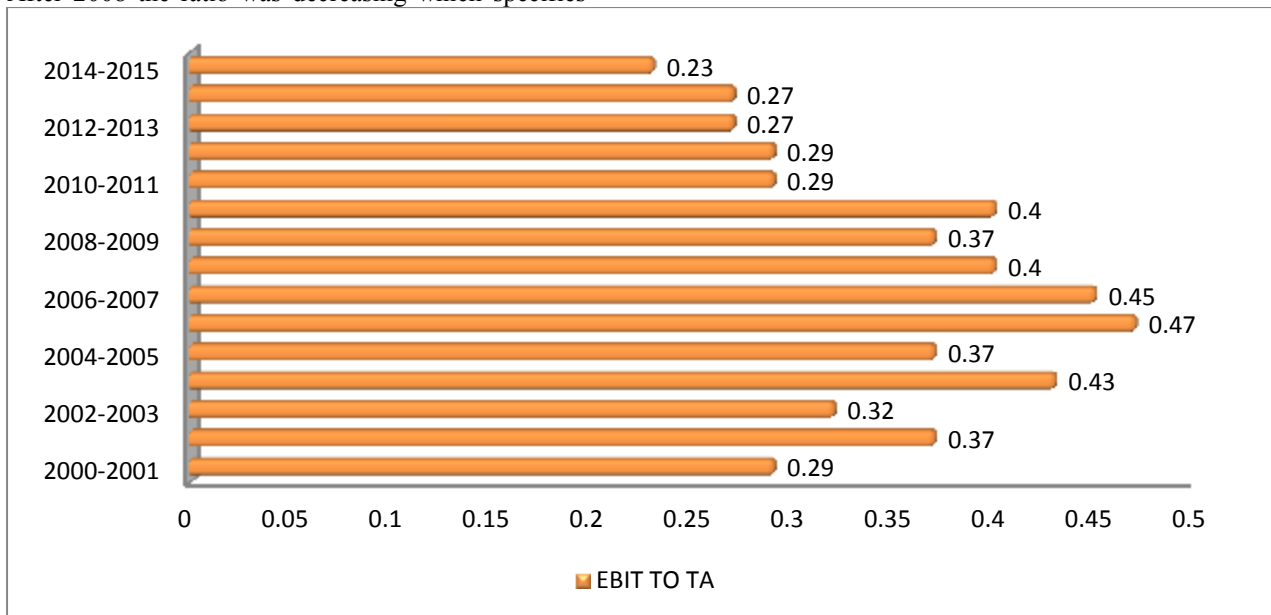
B. Analysis and interpretation of Retained Earnings to Total Assets



This ratio helps in measuring cumulative profitability over time and reflects the part of fixed assets being financed by the retained earnings. Retained earnings are known as cheaper source of finance than the debt. From the period 2003 to 2008 the ratio was high. After 2008 the ratio was decreasing which specifies

that the growth is not a real growth, as the company is being financed through increasing debt, rather than of re-investing profits.

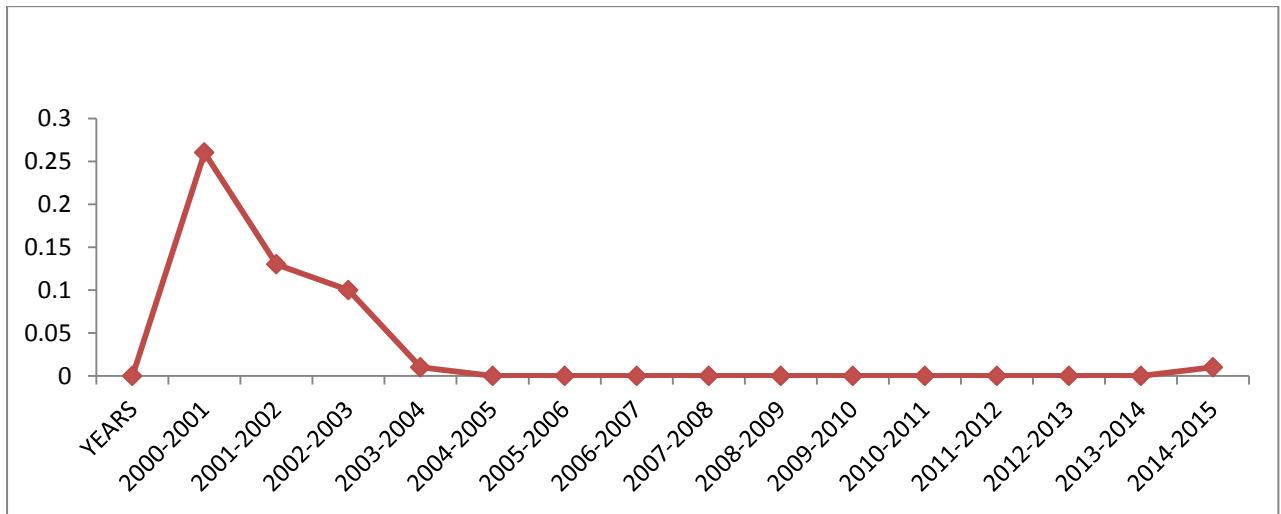
C. Analysis and interpretation of EBIT (Earnings before Interest & Taxes) to Total Assets



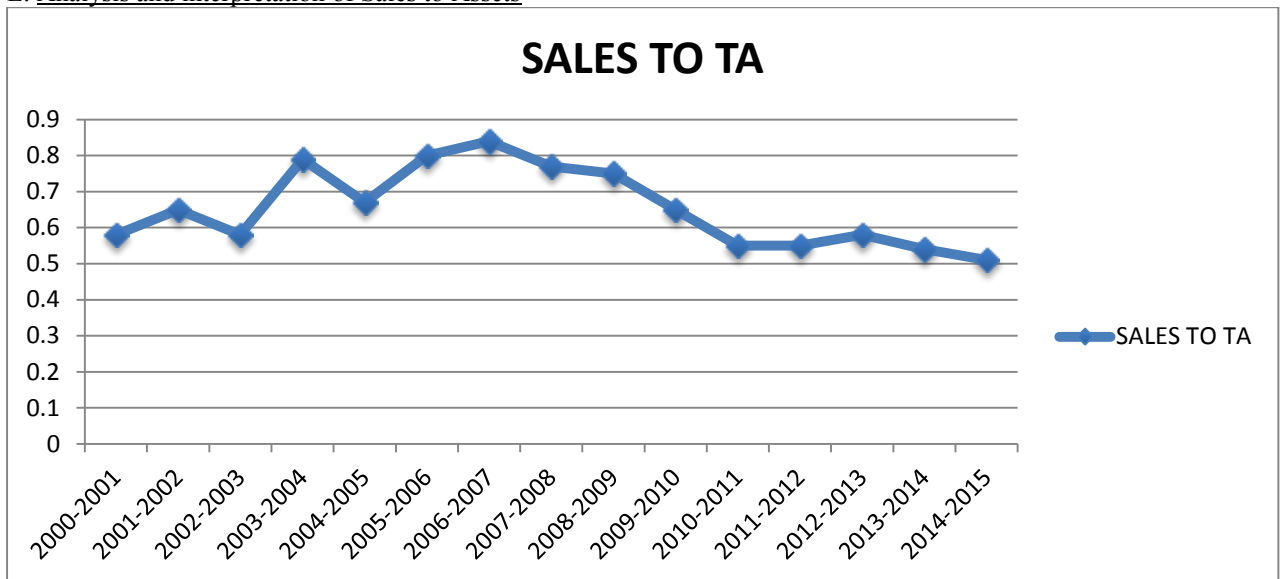
EBIT to Total Assets ratio is a common variant of the return on assets which shows the operating performance and productivity of the assets. As per the graph the performance and productivity of ONGC is good. This is clear that the company is efficient in utilizing the assets in an effective manner and it increases its productivity.

Equity to Debt has had a drastic fall from 0.26 in 2000-2001 to 0.1 in 2003-04 and from 2005 onwards till 2014-15; the ratio is almost close to zero. Equity to debt is a common indicator of bankruptcy. It is a measure which indicates how much the company's assets can decline in value before the liabilities exceed the assets and the company becomes insolvent.

D. Analysis and interpretation of Equity to debt Ratio



E. Analysis and interpretation of Sales to Assets



The sales are very significant in determining the total performance of the company. Sales revenue is the most important item in measuring the entire activities. This ratio is a measure of the ability of the firm's assets to generate sales. From 2000 to 2005 the ratio

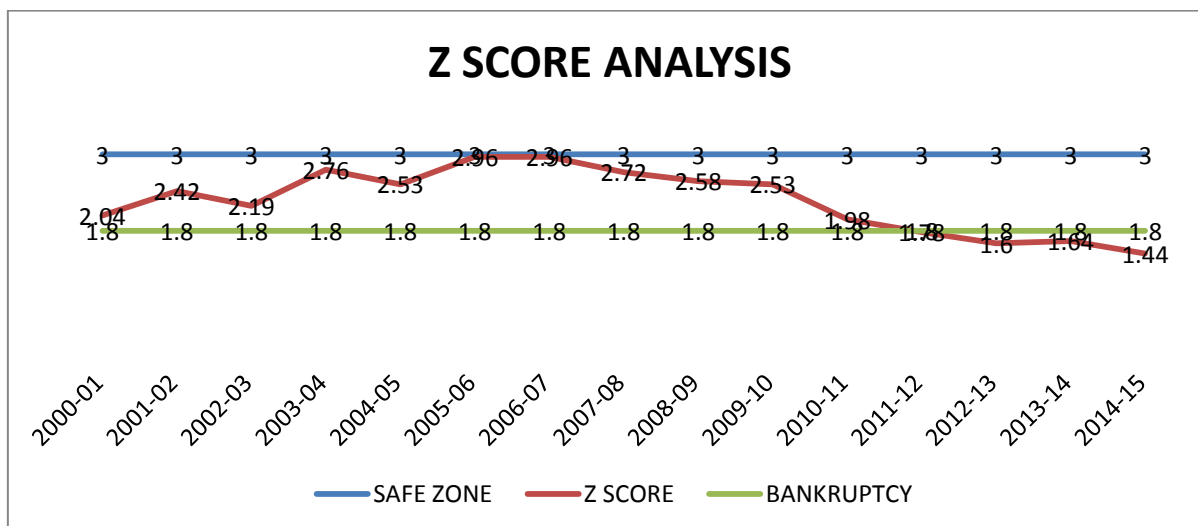
was on average scale and after 2005, the ratio was increased showing efficiency of the company in using assets to generate sales. However, after 2009 the ratio was decreased and showing that the company is not utilizing the assets efficiently to generate sales.



7. Z SCORE ANALYSIS

Table- 2

Years	1.2 X1	1.4 X2	3.3 X3	0.6 X4	1.0 X5	Z score
2000-01	0.24	0.1	0.96	0.16	0.58	2.04
2001-02	0.3	0.15	1.24	0.08	0.65	2.42
2002-03	0.32	0.15	1.08	0.06	0.58	2.19
2003-04	0.35	0.19	1.43	0.01	0.79	2.76
2004-05	0.48	0.14	1.23	0.01	0.67	2.53
2005-06	0.43	0.17	1.56	0	0.8	2.96
2006-07	0.47	0.16	1.49	0	0.84	2.96
2007-08	0.47	0.16	1.33	0	0.77	2.72
2008-09	0.45	0.13	1.24	0	0.75	2.58
2009-10	0.43	0.13	1.33	0	0.65	2.53
2010-11	0.34	0.12	0.97	0	0.55	1.98
2011-12	0.07	0.16	0.98	0	0.55	1.78
2012-13	0.1	0.11	0.8	0	0.58	1.6
2013-14	0.08	0.11	0.91	0	0.54	1.64
2014-15	0.08	0.07	0.77	0.01	0.51	1.44



As per the graph up to 2012 ONGC was on the safe zone but after 2012 it was disturbing for the Oil Corporation giant as it was in bankruptcy zone. It is clear that the financial position was good up to 2011-12 and after that the Z score was going down less than 1.8 which is a bankruptcy zone.

8. FINDINGS

The ratio of working capital indicated that the investment situation of the company was weak, and funds were blocked. It is clear from the analysis that

ONGC is more dependent on debt finances rather than on retained earnings. ONGC should finance its assets more from retained profits than debt. A high ratio of EBIT indicates that the productivity capacity of assets is good. However the unstable movement of financial performance put it in to bankruptcy zone as per the Z score value. But as a giant organization in energy sector, ONGC has that capability to perform well. As the asset utilization and productive capacity is good and also by shifting its financing pattern to



retained earnings it can make itself financially vibrant.

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9. CONCLUSION

The Altman's model of Z score of ONGC is fluctuating from 2.04 to 1.44 throughout the period of study. Z-Score model is one of the best tools to analyze and evaluate one organization's financial health over a period of time. As the Z score of an organization is getting higher, it entails vibrant financial position and productivity and to put an organization in safe zone and the lower the Z-Score, the more likely one organization could go in to the bankruptcy zone. It is a common occurrence for an organization to go through many ups and down and having fluctuating performances, and this is not an exception in the case of the ONGC. But as the productivity and earning capability of the organization is good, with no doubt it can make a healthy footprint of financial sustainability and impulse vitality.

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ATTITUDE, KNOWLEDGE, AND PRACTICES TO BOOST FOR SUSTAINABLE HEALTHCARE

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ABSTRACT

The traditional Knowledge prototypes are available in every loop and corner of life, They are innumerable, in numbers, they blend in the culture and tradition as well as you can see them daily in our societies we will call them as occult science, For instance, Ayurveda, Yoga , Unani , Siddha like many systems of medicine originated in our holy land only; but we labelled them as “alternative medicine,” and “complementary”. While Western medicine is having predominantly based on lab intermediation to cure the disease rather than to prevent it. The disparity, between Complementary and Alternative system, is considered the body as a whole. While western is analytical one a non-holistic. There I no boundary for Knowledge only thing we require w come out from jail like the classroom and have to study under our environment.

INTRODUCTION

Burden from diseases influences on GDP of every country, as it affects the working hours of human resource worldwide. Till now there is no Health care system sustain in the world against proper management of maladies, the paradigm shift from communicable to non-communicable diseases requires more asset, As Sustainable health systems require investment in different six building blocks, out of 17 The Sustainable Development Goal main ones are rightly mentioned by “Iona” they are workforce, medicines and financing.

As Louis Pilard in his own words says that “Healthcare establishment’s presently gaining significance in the areas like energy efficiency, reduced waste and lean systems, has been slower in the health sector than some other industries.

Sustainable Healthcare sets a goal for Health care of excellence health, cost compatible one and finally have a low influence on the universal system which endure us. As per Alma-Ata declaration on primary health care level governance is recognized as

an important but challenging element of health system development in low and middle-income countries ¹.

Futility is a unique concept for the pharmaceutical industry. There is evidence available regarding the even during the time of Hippocrates. But sad to mention, the problem lies in healthcare professionals fails to estimate the dimensions of it ².

The curse of corruption is felt in every Luke and corner. This is a new epidemic is spreading like yellow fire. Corruption contributes immensely to the inhibition of economic performance; it negatively affects investment and economic growth, which is detrimental to national development ³. If corruption discourages speculation, investment, it will reflect on limits of the economic growth and alters the composition of government spending, vice versa. It automatically, inevitably, hinders future economic or financial development and justifiable growth. The universal definition of the concept according to Akindele has long been ideologically, morally, culturally, politically and intellectually elusive to the point of losing sight of its



detrimental and parasitic influence on people and the society at large⁴. We must know how specific scandals have impacted anti-corruption initiatives in the countries and how to overcome it⁵. Once corruption becomes deep-rooted and customary in a culture it infiltrates into the value-based system. It destroys organizational legitimacy because it hinders the effective delivery of public services. For instance, Safe and potent therapeutics to battle cancer. We all know that each chromosome is supposed to contain around 100,000 genes, this gene atmosphere disparity seems to be at the root of various degenerative illnesses.⁶ According to cardiologist Prof BM Hegde, former vice-chancellor of MAHE says that Cancer is not a disease. It is an ageing process of cell. Some age slowly, left age faster, and leads apoptosis due to environmental and our lifestyle change mutates to its DNA and leads cancer. Where Environments and genes together work in the manifestation of the disease.

The same above mentioned cancer model applied in the healthcare delivery activities and plans are must be planned according to the quality health of global standards. The most critical factor for the success of this model is its internal strength, aptitude to remain relevant and contemporary and its capacity to get ahead and proactively manage change.

Farm out has captured the attention of many motivated and service-minded people especially younger generation with the intention growing, Outsourcing encouraged to bring out best and restore health care delivery. But the efficacy and effectiveness depend on the combination of cost-effective models as well as innovative ideas. Of course, it is our moral responsibility to make sure if there are bad outsourcing agencies, and close them down by removing.

Outsourcing prevents spent on infrastructure development, absorption of skilled health care professions, Legal issues like medical negligence, consumer protection etc. completely fresh approach that involves genuine investment in health care infrastructure and improving public health with environmental indicators for various modes of health care delivery may be an eye-opener. All these factors encourage individuals to cycle for short distances, where they sense harmless and safe and not apprehensive, will be a boon.

DISCUSSION

In the research, it is observed that Health care creates a large amount of healthcare waste or biomedical waste, which is multifaceted administration because of its diversity create well-being and call them

safety hazards⁷. The most significant barrier is reporting accuracy, the waste of time to examine, comprehend, and understand research outcome⁸. Attitude, Knowledge, and practices, the prime one is disaster management.

In case of disaster management, there are various types of hazards are exciting like occupational, radiation and chemical threat. The new entry in this new emerging entry in bio waste management threat. Technological hazards also may arise directly as a result of the impacts of a natural hazard event.

Lack of quantitative data on specific failures to reproduce published research. Improper reporting of study design and results. Develop the gaps and to deliver better care. Various concerns remain on how to overcome. And make successful the WHO vision on health for all in 2020, but the main hurdle to achieve this is potential risks of treating sick people which create may be dangerous to health. Like not using research outcome in practice. Poor or lack of fund. Not using Innovative technology Lack of research skill, Fail to attract strategy makers attention or people attention. Improper biomedical waste management guidelines, creating awareness about bio waste management.

The healthcare model of an organization plays an important role in shaping exact the mission and vision of an organization will be achieved effectively or not. A culture that supports the execution of healthcare approaches enables giants of health care management for proper selection and sustain a full improvement directly connected to high significance.

CONCLUSION

Organizational liability often compels operational accountability. It is Organizational responsibility must be a focus on the compliance to provide population priorities and patient-centered care.

Analytical philosophers of science have extensively studied the laws of nature and have developed different philosophical theories of laws. The idea of laws in science has along with history. Edgar Zilsel 1942 has traced the historical roots of scientific laws in the metaphor of divine legislation. Philosophers in the analytical tradition have engaged in the analysis of certain issues within a particular domain, mainly conceptual, and try to analyze the role it plays within that domain. These two aspects of science I e the law of nature and scientific explanation are closely allied because in most cases.



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TEMPLATE GENERATION THROUGH OBJECT PROCESSING WITH SIMPLE USER INTERFACE

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ABSTRACT

Traditional way when an UX/UI designer needs to design a website he needs to do the rough diagram of wireframe and then if the design proposal is been accepted by the client then the designers needs create the User Interface of the Website should be created but what if the client has been reject the designed proposal then the UX/UI designer need to do from scratch. Here I'm presenting you this proposal.

KEYWORDS- *digital conversion, identification, recognizing, Template Generation, machine learning*

I. INTRODUCTION

TOPUI the users can immediately draw his very own template right here a custom vision Model educated to function object recognition against HTML hand drawn patterns is used to discover significant design elements into an image, here each object will detected element based on the pattern recognition and passes through a Text Recognition Service to extract handwritten content then a valid HTML is generated as a consequence to the detected format containing the detected plan elements.

The UX/UI configuration process includes a great deal of creativity that begins a whiteboard where fashioners share thoughts. When an architect create's the structure of wireframe, it is generally caught inside a photo design and physically converted into some working HTML wireframe to play inside an internet browser. This takes endeavors and postpones the plan procedure. While handling this technique we face a ton of challenges, for example, Changes in the proposed plan and re-compose/Build up the HTML format, this includes a lot of time and if a structure is refactored on the whiteboard it requires some investment assets and the program reflects changes in a split second. In that sense, by method for the quit of the meeting, there is a subsequent model approved between the fashioner, designer, and buyer presenting our idea, an online arrangement that utilizes artificial intelligence to fundamentally change a written by hand UI group from a picture to a substantial HTML increase code. We should comprehend the way toward changing a manually written into a picture configuration to HTML

utilizing TOPUI in more detail. Initially, the individual transfers a photo by means of the site.

At that point A tweaked creative and farsighted mannequin predicts what HTML components are available in the photograph and their zone after that manually written content center supplier peruses the content inside the imagined components. At that point of organization calculation utilizes the spatial records from all the bouncing holders of the imagined components to create a lattice shape that obliges all. At long last, A HTML age motor uses every one of these snippets of data to create a HTML increase code mirroring the outcome.

Motivation

- **Detect Design Patterns:** A Custom Vision Model trained to operate object focus in opposition to HTML hand drawn patterns is used to observe meaningful sketch elements into an image.
- **Understand handwritten text:** Understand handwritten text: Each detected issue is handed through a Text Recognition Service to extract handwritten content.
- **Build HTML:** A valid HTML is generated as an outcome to the detected structure containing the detected sketch elements.

II. LITERATURE REVIEW

[1] In this paper the creator cited that the paper gives a total Optical Character Acknowledgment (OCR) framework for computerized of an image in a camera caught picture/illustrations inserted printed documents for handheld gadgets. From the outset, literary



substance zones are extricated and slant rectified. At that point, these territories are binarized and portioned into follows and characters. Characters are passed into the acknowledgment module.

[2] In this paper the writer cited that a total OCR philosophy for perceiving memorable reports, both printed or manually written other than to know-how to aptitude of the textual style, is introduced. This technique comprises of three stages: The initial two stages allude to building up a database for instruction the utilization of a lot of archives, while the 1/3 one alludes to acknowledgment of new record pictures. Initial, a pre-preparing step that comprises of photograph binarization and upgrade happens. At a second step a zenith - down division technique is utilized so as to watch printed content lines, expressions and characters. A grouping plan is then embraced so as to group characters of practically identical structure.

III. PROPOSED SYSTEM

OCR is a wide locale of research inside PC Vision, two of its basic issues are acknowledgment of characters from machine printed (or) written by hand records and Archive Structure Investigation (DSA). In the two territories, no longer exclusively is established researchers performing progresses anyway moreover programming program businesses are exceptionally vivacious on becoming acquainted with about this theme. Maybe, the most interesting improvements have been made in organization's business programming. Here is the stream outline it shows the total progression of distinguishing the articles in an arrangement way and checks the character at that point slant the remedy make the divisions of the characters lastly it perceiving the characters in structure words. The primary problem is respected explained when discussing machine printed composing, and primarily understood when talking about manually written prepared frameworks cognizance. By utilizing this OCR strategy here I have made the venture where the client gives the contribution as a picture design and by doling out some watchword in the string, for example, "Btn for Catch, Lbl for Name, Txt for Textbox, and so on." similarly it recognizes the catchphrase a produces the HTML Code in the wake of getting the code of the yield at long last he will test the code in the editorial manager and he can alter if any progressions expected to him in like manner.

IV. PROBLEM STATEMENT

Traditional way the UX/UI designer needs to design a website he needs to do the rough diagram of wireframe and then if the design proposal is been accepted by the client then the designers needs create

the User Interface of the Website should be created but when the client has been reject the designed proposal then the UX/UI designer need to do from scratch.

V. PROBLEM DEFINITION

OCR is a wide area of research inside PC Vision, two of its basic issues are acknowledgment of characters from machine printed (or) written by hand records and Report Structure Examination (DSA).

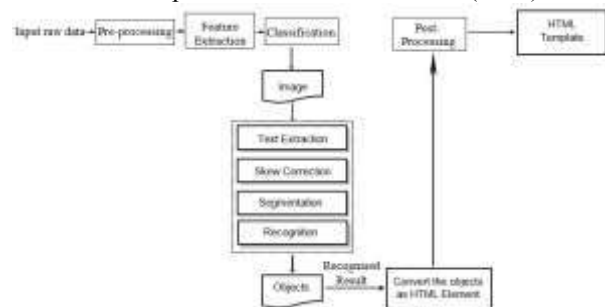


Figure 1: OCR Text Recognition Pattern



Figure 2: Flow chart

In the two territories, no longer exclusively is established researchers performing progresses anyway moreover programming program businesses are exceptionally lively on becoming more acquainted with about this theme. Maybe, the most intriguing improvements have been made in enterprise's business programming. Here is the stream graph in figure-1 it shows the total progression of distinguishing the items in a succession way and checks the character at that point slant the rectification make the divisions of the characters lastly it perceiving the characters in structure words as appeared in figure-3

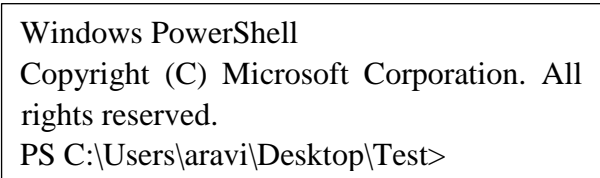


Input: as an Image



Figure 3: Sample Image as an input

Result:



The primary issue is respected understood when discussing machine printed composing, and chiefly settled when talking about manually written prepared frameworks cognizance. By utilizing this OCR technique here I have made the venture where the client gives the contribution as a picture group appeared in [figure-4](#) and by doing out some catchphrase in the string, for example, "Btn for Catch, Lbl for Name, Txt for Textbox, and so forth." like insightful it distinguishes the watchword a produces the HTML Code appeared in [figure-5](#) in the wake of getting the code of the yield at last he will test the code in the supervisor and he can adjust if any progressions expected to him in like manner as appeared in the [figure-6](#).

Input: as image

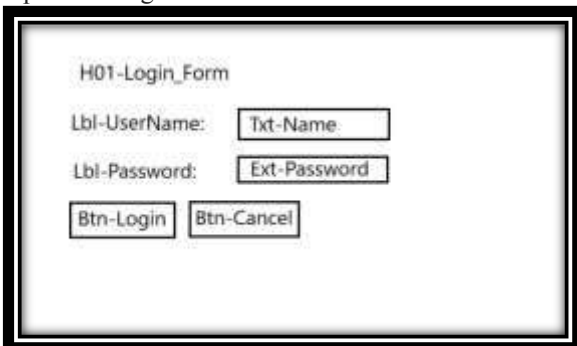


Figure 4

Output:
Code:

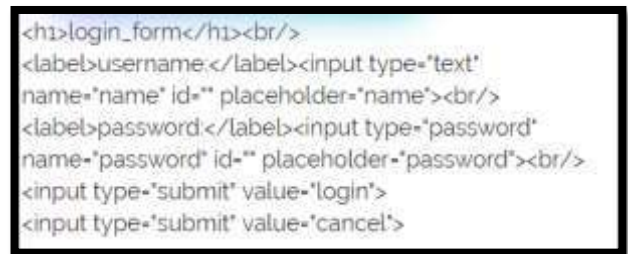


Figure 5

Html-Template:



Figure 6

VI. CONCLUSION

In this task we've utilized python-based free and open source web-application structure, which follows the Model Layout View (MTV) compositional example. this undertaking we have remembered for picture process with highlight extraction and content location highlights, here the client will be giving the contribution as a picture and our web-application will process the given information and creates the code then this web-application will give to the client.

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CONVALESCENT PLASMA AS POTENTIAL THERAPY FOR RECENTLY EMERGED NOVEL CoVID-19

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INTRODUCTION

Plasma Therapy concept is one of the oldest technique developed by a physiologist Emil Adolf Behring for diphtheria in animal studies. He found that immunity to diphtheria could be produced by the injection into animals of diphtheria toxin neutralized by diphtheria antitoxin. His serum therapy is worked as a victorious weapon against diphtheria infection, for which he awarded Nobel price in 1901(1-2). This therapy showed positive results in Spanish Flu Out break(1-2). Till now, there is no specific treatment has been proven to be effective for SARS-CoV-2 infection. Patients were managed with supportive care, such as oxygen supply in mild cases and extracorporeal membrane oxygenation for the critically ill patients, specific drugs for this disease are still being researched. Although few drugs like remdesivir and chloroquine are highly effective in the control of 2019-nCoV infection (3), there is no clear evidence about their action in majority of the population. Many research centers were trying to develop vaccine. But as Mortality rate is raising day by day across the globe, we need some treatment to neutralize SARSCoV-2. So Hopefully Plasma Therapy serves as an victorious weapon against CoVID-19.

Plasma is the component of the blood that contains the virus fighting antibodies. For convalescent therapy is extracted from the blood of recovered covid-19 patients and given to people severely ill with the disease and it helps severely ill patients fight the infection by reinforcing their immune system.

CONVALESCENT PLASMA (CP) THERAPY

Convalescent plasma therapy is a adaptive immuno-therapy and it was used for prevention and treatment of various infectious diseases such as SARS, MERS in 2009 H1N1 pandemic(4,5). The Meta-analysis of several studies of SARS coronavirus infection and severe influenza like Spanish influenza A(H1N1), avian influenza A(H5N1) had revealed that there was an significant reduction in mortality, especially when convalescent plasma is administered early after symptom onset(6). As CoVID-19 is a SARS corona infection and till now we dont have any Significant Treatment approach, So Convalescent Plasma therapy might be a treatment option for COVID-19 rescue. Patients who have recovered from COVID-19 with a high neutralizing antibody titer maybe a valuable donor source of Convalescent Plasma. the potential clinical benefit and risk of convalescent blood products in COVID-19 remains uncertain. Convalescent plasma or immunoglobulins have been used as a last resort to improve the survival rate of patients with SARS whose condition continued to deteriorate despite treatment with pulsed methylprednisolone (7,8). Most importantly, the current guidelines emphasise that systematic corticosteroids should not be given routinely for the treatment of COVID-19, which was also the recommendation in a a Commnt in The Lancet (9). Moreover, several studies showed a shorter hospital stay and lower mortality in patients treated with convalescent plasma than those who were not treated with convalescent plasma (10). Recent studies were explained, patients with fever, cough, shortness of breath, and chest pain, disappear or largely improved within 1 to 3 days and few patients were removal from mechanical ventilation to high-flow



nasal cannula, discontinued high-flow nasal cannula upon Convalescent plasma transfusion.

Plasma transfusion from recovered COVID-19 patients, lowered the severity of disease by raising lymphocyte counts, improving liver and lung function, and reducing inflammation, which is the sign of infection.

Donors for Convalescent Plasma Transfusion (11)

Donor patients who recovered from COVID-19. The recovery criteria were as follows:

- 1) Normality of body temperature for more than 3 days.
 - 2) Resolution of respiratory tract symptoms.
 - 3) Two consecutively negative results of sputum SARS-CoV-2 by RT-PCR assay (1-day sampling interval).
- The donor's blood was collected after 3 weeks post onset of illness and 4th day post discharge.

Neutralizing activity of CP against SARS-CoV-2

The neutralizing activity against SARS-CoV-2 was evaluated by classical plaque reduction test using a isolated viral strain (12). A small sample study in MERS-CoV infection showed that the neutralizing antibody titer should exceed 1:80 to achieve effective CP therapy (The pilot clinical trial using CP in severe patients showed that among the first batch of CP samples from 40 recovered COVID-19 patients, 39 showed high antibody titers of at least 1:160 whereas only one had a antibody titer of 1:32 (13).

Adverse reactions with CP therapy:

In pilot CP therapy study on COVID-19, No serious adverse reactions were found after CP transfusion, But one patient developed evanescent facial red (13).

Quantity of Plasma required for CP therapy

One dose of 200ml CP transfusion (11) was well tolerated, and while the clinical symptoms significantly improved with the increase of oxy-hemoglobin saturation within 3 days, accompanied by rapid neutralisation of virus in the blood. In present study these all investigated patients achieved serum COVID-19 negativity after CP transfusion, accompanied by an increase of oxygen saturation and lymphocytic count, improvement of liver function tests and CRP. The results suggested that inflammation and over reaction of the immune system were decreased by antibody containing in CP.

Conflict of interest: Nil

CONCLUSION

Management of COVID-19 has mainly focused on infection prevention, case detection and monitoring, and supportive care. However, no specific anti-SARS-CoV-2 treatment is recommended because of the absence of evidence.

Evidence shows that convalescent plasma from patients who have recovered from viral infections can be used as a treatment without the occurrence of severe adverse events. Therefore, it might be worthwhile to test the safety and efficacy of convalescent plasma transfusion in SARS-CoV-2-infected patients.

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THE GIRL IN ROOM 105: A MURDER MYSTERY

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Chetan Bhagat, an Indian author is popularly known for writing Indian English novel about middle class youngsters. In 2010, he emerged as one of the world's most influential people. He penned down many novels like 'Five Points Someone', 'One Night @the call centre', '2 states', 'The story of my Marriage', 'The Three Mistakes of My Life', 'Revolution 2020', 'What Young India Wants', 'Half girl Friend', 'One Indian Girl', and the latest 'The Girl in Room 105'.

The present novel is in the form of narration. The narrator Keshav Rajpurohit, a young IITian tells the story to Chetan Bhagat while travelling by Indigo Flight 6E766 HYD- DEL. The Story is about a young girl Zara Lone, a Kashmiri Muslim. Keshav first saw her at Rendezvous Fest, IIT Delhi as a finalist in the clash of Titans Debate competition. He was fascinated by her model like look and tried to be intimate with her. He busied himself to court her and was successful. Gradually, they came near each other, dated, romanced and even started planning life together. Keshav taking her went to Alwar to introduce her with his parents and to make her a part of their family but his father, Mr Naman Rajpurohit, a senior member of R.S.S.and her mother, prejudiced against muslims outrightly threw her away from their home. "Have you really lost your mind? You want to marry a Muslim Girl." She said as if I had just requested for seed money to start an online cocaine shop.'

Next both the lovers tried to convince Safdar Lone, Zara's father for their marriage. Zara, however had already spoken to her parents and mentally prepared them in advance. That's why it was not an electric shock for them as was in the case of Mr. and Mrs. Rajpurohit. The result of the meeting was "It will have to be our way. We can do a nikah"

'Whatever' I said

'We can give you a shahada a ceremony before or even during the nikah'

'Shahada?' I said hearing the word for the first time.

Safdar turned to Zara.

'Your dost does not know shahada, yet he loves a Muslim girl.'

'Dad, what is this shahada business' I don't think we need to.

Keshav did not expect that turn of events, ultimately leading to break up between the two. Keshav said, "I can't convert, Zara. Please understand. I love your religion but I can't convert. My parents will kill themselves."

Even after the break up, Keshav could not forget Zara and always missed her. The 27th birthday of Zara was a turning point in the life of both Keshav and Zara. Keshav managed not to call or message her that night but suddenly late at night Zara whats Apped him---- "So you don't even wish me any more? Said the first. The rest followed--- "It is my birthday. I hope you remember.'

"Just was surprised you didn't wish me.'.....

.....
"I miss you."

.....
.....

"Yes, life is incomplete without you."

.....

"Can I call to wish you" keshav asked.

'Why call? You are not going to wish me in person.'

After these messages Keshav could not stop himself from going to Zara's hostel room. His friend and flat mate, Saurabh did his best to check him from going out side at that chilly and silent night, yet Keshav taking Saurabh with him, cheated and befooled duty police as well as watchman and finally reached Himadri in front of room no. 105. Saurabh kept standing down while Keshav flung into Zara's room through open window singing 'Happy Birthday to you' but 'I only heard the mild hum of the convection heater in response.' In spite of many calls there was no reaction from Zara. Then keshav, shook Zara's shoulder again, this time with more force. She didn't budge. Keshav touched her forehead. It felt ice cold. He pulled the quilt down



further from her head. Her neck had red marks on it. ‘Zara baby’ I said. ‘I touched her cheeks, eyes and ears in quick succession. Everything felt cold.’ Keshav, greatly nervous, called his friend Saurabh up who screamed to know about her death. Saurabh suggested to run away from there but Keshav decided to stay and tell the truth to avoid their ruin.

Now the murder mystery started, Police and Zara’s father were called and the dead body was taken by Safdar without any post mortem. Zara’s Iphone was unlocked after many trials and two missed calls were found from a contact called Raghu Cutie Pie. The location of Raghu last night was searched from the cell tower showing Apollo hospital from Hyderabad. Inspector Rana tried to call Raghu that was picked by a lady of Telugu accent who passed the phone to Raghu ‘Hello?’ Raghu said.

‘Hello’, Mr. Raghu, Inspector Vikas Rana from Hauz Khas police station speaking. Can you talk?’

‘yes, sir’

‘Have you heard the news?’

‘What news, sir?’

‘Do you know Zara Lone? A friend of yours?’

My fiancée, sir, Raghu said, fear in his voice.

.....

.....

‘Which men? This is the police. We have her phone.

‘You gave her two missed calls today. One at 8:14 in the morning, and the other at 8:32. From Raghu’s talk it came out that Zara and he were going to marry after two months and that three goondas outside Raghu’s office in Cyber City came on bikes and hurt him with hockey sticks.

The watchman of Himadri was taken into custody as murderer because Zara had a quarrel with him some days ago. Keshav and Saurabh were relieved from the police station on the condition that they would daily pay visit at station and not leave Delhi without permission. The case was almost solved, killer being in jail but Keshav was not convinced. He managed to meet Laxman inside police lockup. Laxman said, “Sahib I didn’t do anything. I did not kill Zara madam.” His voice broke and he began to wail.

.....

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‘I don’t know, Sahib. I swear on my children. I didn’t do anything.

I didn’t kill Zara madam.

‘From 2:02 to 2:41 where were you?’ asked Keshav.

Laxman whispered into his ear that during this time he was using washroom wi-fi to enjoy porn sites.

With Saurabh’s help it was investigated that Laxman was not the murderer. Keshav was excited to know the real killer. He met Raghu and found out that Professor Saxena, Zara’s Ph.D. guide used to teased her and prepositioned her to approve her thesis sooner. Raghu also showed him Zara’s mail as proof. With this new clue both friends investigated anew. Keshav went to professor’s office and questioned about Zara. They met Mrs. Saxena who was very angry to know her husband prepositioned a student, but she admitted that her husband was at home the night of Zara’s murder. Saurabh also noticed a limp in professor’s leg, making it sure that Saxena, too was not a killer, as it was impossible to climb a mango tree and reach Zara’s room with that limp.

Another possible killer, according to inspector Rana was Safdar, Zara’s father who might have killed her due to his honour and both the friends moved towards Safdar’s home. They talked with Safdar and with his permission searched her room from where they found some clues of Zara’s connection with her step brother Sikandar and Tehreek-e- Jihad a movement in Kashmir. During the course of events Sikandar too committed suicide. One army Captain Faiz Khan, also connected with Zara came under Keshav’s investigation.

At the end of the novel, it was clear that, Raghu, Zara’s fiancée was the real killer. He very smartly made a plot to kill Zara knowing her affair after reading her chat with captain Faiz, however she came in his contact to improve her step brother, Sikandar. Raghu scrolled up a conversation between Faiz and Zara -----

.....

.....

‘Okay, need to go . It is late, Raghu is calling me.’

‘Stay’

‘what?’

‘Even if you are with Raghu. At least our child will be good looking. With him, you never know

.....

.....

.....

‘Well, you don’t want Raghu looks for your kids, do you, all black black,

Ugly ugly.’

These words pierced deep in Raghu’s heart and he weaved a plot to kill Zara, hired some goondas to hit himself, thus admitted in Apollo hospital. He took nurse in his confidence, typed a happy birthday message to Zara and asked the nurse to sent it exactly at 12



midnight because doctor has severely ordered him to be in bed by 9 p.m. After that he slipped from hospital, took 11:30 flight from Hyderabad, landed Delhi at 1:10, reached Himadri, murdered Zara, Messaged Keshav from Zara's phone and again took 4:55 flight from Delhi to Hyderabad and reached hospital, leaving no clue of being a killer. But Keshav was smart enough to bring truth before the world. In this way the murder mystery was resolved and Raghav was replaced by Laxman.

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VERSATILITY IN VERSIONS OF EPIC NOVELS ABOUT “YUSUF AND ZULAYKHO” (“JOSEPH AND ZULEYKHA”)

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ABSTRACT

The article comparatively examines the issue of versatility in a literature piece in the translation of Abd ar-Rakhman Jami’s “Yusuf and Zulaykho” (“Joseph and Zuleykha”) by Muhammadrizo Agahi, in addition to series of epics by Durbek, Mirza Alim Devona and Holis and Nurmuhammad Andalib's story on the same topic. As a result of a comparative analysis among the abovementioned, it has been concluded that any kinds of variations in artistic work is not a subject for the creation of a new piece. Versatility in a literary work should be assessed as a change in ideas, suggestions, the system composition, plot, characters, creative style and genre. It was estimated that these works are different in composition, plot, creative style and genre. The results of the comparative analysis are theoretically generalized.

KEYWORDS: *Yusufnama (tales about Joseph), dastan (epic story), translation, plot, composition, course of events, version, interpretation, comparative analysis.*

INTRODUCTION

The most frequently used plot in the literature of the Muslim East is the story of “Yusuf and Zulaykho”. The works on the basis of this plot have been created for very long time, taking place in various spaces and belong to a wide geographical area, as well as the participation of authors of different categories and strata, manifested in different ideological content, different artistic interpretations and views. This is not unique issue for only the plot of “Yusuf and Zulaykho”. There are many series of such works in the world literature, which are called “transferred plots”. As the word *variant* (French: “variante”, Latin: “varians” – to change, differentiate) represents different meanings in different areas of science. When described from a literary point of view, it is a view of a particular work of art that has undergone certain alterations. However, it should be kept in mind that a certain part of a work of art containing novelty alone does not mean that a new version of it has been created. It should be acknowledged that a variant is created only when the

change occurs in the *idea, theme, interpretation, composition, plot, system of imagery, creative style and genre*. Sometimes the appearance of a work, which has changed as a result of editing a line, paragraph or chapter, is also interpreted as a variant [1, 102]. Such alterations of the texts – variants correspond to the textual criticism. The comparative analysis of the epics written by Abdurahmon Jami (translated by Agahi), Durbek, Mirzo Alim Devona and Kholis, as well as the story of Nurmuhammad Andalib, written in the plot of “Yusuf and Zulayho” allows us to draw important conclusions in terms of variability.

RESOURCES AND METHODOLOGY

At the time of writing this article is a manuscript of the epic “Yusuf and Zulaykho” by Abdurahmon Jami, translated by Muhammad Rizo Agahi in the XIX century, stored in the Institute of Oriental Studies of the Academy of Sciences of Uzbekistan under inventory number 809 and a copy published in 2018 by Professor Nurboy Jabborov [2 ,



307- 612], Durbek 1959 edition of "Yusuf and Zulaykho", Mirza Alim Devona's epic "Ravzai asror" in the fund of the Institute of Oriental Studies of the Academy of Sciences of Uzbekistan 1338 inventory number The manuscript of the epic "Yusuf and Zulaykho" is kept in the department of rare books of the Samarkand State University Scientific Library under inventory number 824261 and the lithography of Nurmuhammad Andalib's story "Yusuf Zulaykhoi turkiy" was published in 1915 in the lithography "Asia" in Tashkent. The fact that most of the essays discussed in the article are primary sources, some auxiliary sources were involved in the study of variability, the opinions of experts who conducted research on this topic were used and discussed with them where necessary, are the factors that ensured the analysis and conclusions.

In writing the article, scientific methods such as comparative-historical, comparative-typological, descriptive, which have been tested in the study of primary sources of Oriental literature, have been used.

RESULTS AND DISCUSSION

Second place according to possessing several variants of the same texts after "Yusuf and Zulaykho" in Persian and Turkish literature belongs to the epic story of "Layli and Mejnun". Its famous versions were created by such poets as Nizami Genjevi, Khusrav Dehlevi, Abdurahmon Jami, Alisher Navai, Muhammad Fuzuli, Nuriddin Andalib. In addition to those, it is well known that much many poets have written on this subject, as well. The basis of the epic, which consists of stories about a girl named Layli and young men who were in love with her, which existed among the Arab before Nizami Ganjavi, confirms this idea.

The story of Yusuf (p.b.u.h.), which is based on a religious source, later attracted the attention of great representatives of Turkish literature. Hundreds of works of art have been created in various forms of prose and poetry. Talented creators have further enriched the Qur'anic theme using their own skills and inspiration. They created true masterpieces. This great cultural heritage left by our ancestors is an everlasting treasure of our spirituality. It should be noted that "the introduction of Qur'anic themes into world and Uzbek literature in particular is not only from a religious point of view, but also clarifies for us the abstract aspects of Eastern literature, reveals the sources of various literary themes and connects modern Uzbek literature with Islamic literature. It has also helped to re-establish close ties with our national identity and traditional values." [10, 60]

The theme of Yusuf and Zulaykha became widespread and a favorite work of literature for a lot

of people sometimes in the form of a story, sometimes in a narrative, and sometimes in the form of an epic. Those Yusufnamas (stories about Yusuf) can be divided into two groups according to their formal structure:

Yusufnamas of the first group are valuable as masterpiece examples of art, even though basing on an existing tradition. Qasim Ferdowsi, Qul Ali, Shayyod Hamza, Durbek, Abd ar-Rahman Jami and Alim Devona's works are prominent illustrations for this.

The works of the second group were written in a prose, enriching the series of Yusufnamas with a new literary genre. A vivid example of this can be Abu Ali ibn Sina's (Avicenna's) "Qissai Yusuf" ("Story of Yusuf") [5, 46-47, 7 19-20], Rabg'uziy's "Story of Yusuf Siddiq (p.b.u.h.)" and Andalib's "Yusuf and Zulaykho". The stories reflect creative intentions, dreams, divine-mystical cognition and literary-life experiences of each writer.

The enumerated yusufnamas are even more valuable to the reader as they convey the truths of ancient history. Among them the stories of Abd ar-Rahman Jami, Durbek, Mirza Alim Devana and Nurmuhammad Andalib are quite prominent with a unique artistic interpretation of Qur'anic story. The above-mentioned writers, on the example of their literary experiences, laid the foundation for the tradition of creating large-scale works based on the story of Yusuf and Zulaykho.

Every time writers start creating a new work based on the legends about Yusuf and Zulaykho, they base on a series of life events about the heroes. They make certain changes to the plot based on their creative goals. The main storyline reproduces the followings:

1. Yusuf (Jopseph) is the most beloved son of his father Ya'qub (Jacob), which emergence jealousy of all his brothers.
2. A dream story that foretells the future of Yusuf (Jopseph) [9, 65].
3. Yusuf (Jopseph)'s being thrown into a pit by his brothers and being sold for slavery to Egypt.
4. Joseph's meeting Zulaykho and the romantic adventures between them.
5. Joseph's glory in Egypt and his accession to the throne.

Yusuf and Zulaykho, the third of Jami's seven epics, was written in 1483 and is recognized as a unique example of a transferred plot. According to professor Nurboy Djabbarov: "Abdurrahman Jami's "Yusuf and Zulaikha" has its prominent place among other stories of the same theme written in Tajik-Persian and Turkic languages. So the glory of this work is common in all the countries of the East, it has



been translated into many languages. According to scholars, who explore the literal heritage of Jami, "Yusuf and Zulaykho" is distinguished by the breadth of the subject matter and the high art of Abdurahman Jami"[4, 172]

This work, which was later translated by Agahi, served as poetic perfection of Yusufnama epics due to its attractive language, general style of description, and artistic perfection[2, 307-612]. Plot lines are not complicated, the composition is thorough, the expression is clear and fluent. The course of events goes smoothly. Probably, Jami did not complicate this work because he gave it as part of his seven. Both in size (58 chapters only) and in terms of the course of events, the poet's epic "Yusuf and Zulaykho" is different from the works of other artists who addressed this topic.

It was noted that Abdurahman Jami wrote "Yusuf and Zulaykho" in the epic genre. Therefore, from the very beginning of the work peculiarities of epic story stand out. Traditionally, the following chapters are included at the beginning of the epic before the main events begin:

1. Praises to Allah.
2. Praises to the prophet may peace be upon him.
3. Praises to the prophet may peace be upon him, the one who possesses a highly order in the eyes of God and the ultimate day.
4. Wearing the dress of forgiveness and modesty is our realm.
5. Praises to the king and sultan.

After the above five chapters comes a chapter dedicated to Yusuf and the main events begin. "Analysis shows that the work is based on a free approach, not a literal translation. The lyrical experiences in the work, as well as the fact that there was a separate chapter dedicated to Muhammad Rahim Khan the second included, give grounds for such a conclusion"[4, 173].

The introduction to the epics of Durbek and Alim Devona is similar to the work of Abd ar-Rahman Jami. Such creative pursuit is not in vain as ultimately there were a lot of authors who were inspired by Jami's "Yusuf and Zulaykho" and composed their poems of the same title. Professor N.Kamilov, who explored the translation of Agahi states: "It is correct to say that this epic is the masterpiece of Jami's creativity. Therefore, after Jami, dozens of answers were written to this work, which include some of the Uzbek poets as well"[6, 106]. The most famous of these answers is Nazim Herati's "Yusuf and Zulaykho"; the epics of Jami and Herati have been comparatively explored[11, 3]. Alim Devona also follows Jami, even though he created his

epic under a different name. This can be seen in the following lines of the author:

Navhi haqiqat aro daryoi jarf,
Hazrati Jomiy shahi iqlimi sarf.
So'z duriga ul beribon intizom,
Bog'ladi mazmunig'a mundoq nizom.[8, 29^a]

Translation:

Among the sea of the truth the river of truth,
Hazrat Jami the king in the world of word.
Creating the pearls of word wisdom,
Gave he to the words the following meaning.

Chapters in the work of Jami are also available in Alim Devona's version. However, he included additional two more praising chapters devoted to four khalifas and Samarkand. Durbek composed the first three short chapters in his epic traditionally, starting with the praise of God and the Prophet that was followed by section devoted to the introduction of the book. This feature is different in the works of Nurmuhhammad Andalib and Halis. Andalib created his work both in prose and poetry. That is why the praise is also different from other authors. Written in verse, it also includes information about the reasons for writing the story and his biography:

Keldi qoshimg'a mani bir shahsuvor,
Nutqi tar ermish, so'za intizor.
Keldi yana bir necha hamdardlar,
Qurbi shijoatda sheri mardlar.
Barchalari manga erdi hammishin,
Yuzlari gul so'zlaridur ankabin.
Dedi onlar: Andalibi benavo,
Ko'nglimizga tushti ajib mojaro.
Bor qissa ichra ajib doston,
Na bo'lador qilsang oni guliston.
Yusufi Siddiq Zulayxon san,
Turki xaloyiqg'a sen qilsang chaman...
Ismim erdi Nurmuhhammad g'arib,
So'zda taxallusim erdi Andalib.
Shahrimiz Urganj viloyat edi,
Xonimiz shoh G'oziy jamoat edi...

Translation:

A person came to me,
Narrow speech, longing for words.
A few more sympathizers came,
The lions are brave in their courage.
They all came to me,
Their faces are the words of a flower.
They said: person from Andalib,
We had a wonderful conflict.
There is a wonderful story in the story,
Anyway, at least I didn't go down without
explaining myself first.
Yusufi Siddiq for Zulaykho,
What can you do for the Turkish people ...
My name was Nurmuhhammad Gharib,



My nickname was Andalib.
Our city was Urgench region,
Our King was Ghazi's congregation.

Halis starts his version of "Yusuf and Zulaykho" with introduction of his own life and previous works. He then praises God, combines the praise verses of the prophets Muhammad and Ya'qub (Jacob), and gives a short, more precise ten-byte prayer. After these chapters, he moves on to the main events.

Every author begins by introducing the main events, first and foremost, to Ya'qub (Jacob) and his children. However, the translation of Agahi is an exception from this rule. He starts the story with the description of Yusuf's beauty. The epic says that Adam (peace be upon him) was given a chance to constantly monitor the lives of the prophets who are his descendants. In time, the prophets will change one by one. When it comes to Prophet Yusuf Adam asks God why he was given such a beauty:

Hamul johu jalol Odam chu ko'rdi,
Savol aylarga til mundoq evurdi –
Ki: Yo Rab, bu qayu gulshan gulidur?
Va yo qaysi kishi jomi mulidur?
Ango qaydin etushmishdur bu davlat,
Jamolu johu izzu zebu ziynat?

Translation:

As soon as Adam saw him,
The question has been around for months -
He said: O Lord, is this a wild rose?
Or who is the he indeed?
Where did he get all that beauty –
That nobody has seen ever?

God answers to the question of Adam (peace be upon him): He is your descendant, the fruit of Ya'qub (Jacob)'s garden. Then Adam divides his own beauty into three parts. He gives two-thirds to Yusuf (Joseph) and the rest to the others. Then he blesses Yusuf (Joseph).

This episode does not occur in any other epic variations. This makes the version so different from the rest ones.

It is time to explore the descriptions of the children of Jacob. Naturally, they appear different in each of the plays.

Jami:
Topib Yusufdin o'zga o'n bir avlod,
Vale Yusufdin erdi joni obod.
Durbek:
Bir otadin o'n edilar sar-basar,
Tengri yo'lida barisi rohbar.
Bir onadin Yusufu Ibni Yamin,
Ikki qarindosh edilar, pok din.
Alim Devona:
Tengri oning poyasin aylab baland,
Berdi o'n ikki xalafi arjumand.

Biri alardin guli tahqiq edi
Koni adab Yusufi Siddiq edi.

Translation:

Jami
Though having eleven children besides Yusuf,
All of the Yusuf was well.

Durbek:
One father was there for ten,
In God's way, everyone is a leader.
Yusuf and Ibn Yamin had the same mother,
They were two relatives, pure religion.

Alim Devona:
God made him walk high,
Gave him twelve successors.
One was just like flower
Rish in kindness was Yusuf Siddiq.

In the variations of Jami and Alim Devona information about children is general, without excessive commentary. Durbek gives an ambiguous tale about Jacob's children. It states that ten sons were born from one father, of whom Yusuf and Ibn Yamin were born from the same mother. No word is said about the mothers of the remaining children. They remain uncertain.

In the story of Andalib, these images are given as follows: "However, Jacob had twelve sons. Each two sons had the same mother. Yusuf (p.b.u.h) and Ibn Yamin had the same mother. She passed away from this world. Her name was Rohila..."[3, 3] The information about children is given in detail in Andalib's work. At this point, it is fair to mention that the author, unlike others, tries to connect the course of events more deeply and thoroughly, perfectly reflecting the names of brothers and character features: "Each son of Ya'qub possessed a unique characteristic. One of them was Yahudo. All the people would burst into tears if he screamed in anger. Each body hair would become as stiff as a spear. And another one was Sham'un. His characteristic was that if he would sword struck, the sword would cut the mountain and the stones into two. And another son was Rovil. His characteristic was that whenever an army came, His characteristic was that if an enemy would strike he would beat them with his lion-like roar."[3, 3]

In this regard, Halis cited the following:
Zamon erdi, (ki Ya'qub) payambar,
Bani isroiliyga erdi sarvar.
Ani o'n ikki o'g'li ham bor erdi,
Har ikki bir onadin bo'lub erdi.
Yusufu Ibni Yamin onglag'aysiz,
Alar birla bor erdi yana bir qiz.
O'shal qizni oti ham erdi Norjon,
Onalari o'lub erdi o'shal on...[12, 10^b]

Translation:

There was a time when (Jacob) was a prophet,



The chief of the children of Israel.
And he also had twelve sons,
Each two had same mothers.
You know Yusuf and Ibn Yamin,
There was another girl with them.
That girl's name was Norjon,
Their mother died at that moment.

From the passages quoted, it is clear that the works of Andalib and Halis have been quite perfect in this regard. That is, they briefly dwell on the mother of Yusuf and Ibn Yamin, making it clear that both children were from the same mother. Romantic relationships play an important role in both while describing events in detail is of little importance.

If we pay attention to the composition and plot of the works about Yusuf and Zulaykho, we can see that there are many differences, as mentioned above. Details of event-specific event in one author will not be a matter of importance for the narration of the other. We have attempted to analyze and highlight the most important of them. These types of stories owe a lot of special characteristics that make them unique literary works. All of them are the further matter of exploration for the future literary scholars.

CONCLUSION

Summarizing the results of the research, it can be said that Agahi's translation of the epic "Yusuf and Zulayho" by Abdurahman Jami, the epics about the life of Yusuf and Nurmuhhammad, described as "ahsanu-l-qasas" ("the best of stories") by Durbek, Mirza Alim Devona and Khalis. The study of the narrative on this subject in the context of variance allows us to draw important conclusions for textual studies. The comparative analysis of the works in the above-named Yusufnama series does not mean that a change in a particular part of a work of art alone creates a new version, but that a change must take place within the idea, theme, interpretation, composition, plot, image system, creative style and genre. leads to the conclusion.

The results of the comparative analysis show that there are certain differences in the works analyzed above in terms of composition, plot, creative style, and genre features. Research on the variants of Yusufnama leads to the conclusion that Abdurahman Jami's epic "Yusuf and Zulayho", translated by Muhammad Riza Agahi in the XIX century, is the most artistically perfect among them.

In general, a comparative study of a number of works created on the basis of closely related mobile plots in a particular category from the point of view of variability is important because it allows identifying their specific and different aspects.

Consistent continuation of scientific research in this area is one of the urgent tasks facing textual critiques.

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COMMUNICATIVE-ORIENTED TEACHING AT FOREIGN LANGUAGE LESSONS

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ABSTRACT

The article is devoted to the organization of communicative-oriented reading at foreign language lessons at secondary schools with the help of the educational strategy "Jigsaw". This is an approach to reading that involves the students in speaking and summarizing skills. It is very useful when working with short authentic texts such as newspaper articles.

KEYWORDS: *communicative-oriented; teaching; jigsaw reading; lesson; group.*

DISCUSSION

Reading is a receptive form of speech activity. This means that students read information when reading text. It would seem that reading "automatically" becomes communication, that is, the transfer of information from the author to the reader. In fact, this is not so. Any communication is always motivated, that is, by extracting information from the text, the reader always has a specific goal. If this goal is not, then reading turns into scoring (loud or internal) of the text and has no communicative meaning. The retelling of the text is equally meaningless, especially if the task is to reproduce the content as close as possible to the original. In the process of reading, we usually solve three main tasks - to get acquainted with the general content of the text, highlight its content areas and extract the most complete information. All of these types of reading can be purposefully trained and tested for successful acquisition of familiarization, viewing and learning reading. Moreover, this can be done already at the earliest stages of mastering a foreign language, that is, on the material of short and uncomplicated texts. Even reading the captions to the drawings can be organized in order to understand what kind of drawings in general are in question, which groups of drawings and signatures are presented and what we can find out by getting to know all the drawings and their captions. The use of different types of reading

does not exhaust the possibilities of communicatively-oriented teaching of these types of speech activity. The other side of communicative tasks is the nature of speech-cognitive operations that students can perform in the process of reading. These operations are the following: extracting information, understanding information and transforming information. This kind of reading is found in real life when we accurately transmit the content of the text to those who are not aware of it. Comprehension of information involves the interpretation of what is written with its own explanation, clarification and opinion. Transformation of information means reading between the lines and communication of what is produced not by the author of the text, but by the reader himself. A third party to communicatively-oriented reading is its methodological organization, including jigsaw reading, parallel reading, and co-reading.

Jigsaw reading is a learning situation where one text is divided into several small fragments, each student reads only this small fragment, and then all students exchange information. As a result, each of the participants in this work forms the knowledge of the entire text (from the stories of others). Parallel reading is a technique when students read different texts on the same problem (topic) and then exchange the information they receive, find out the similarities and differences, supplement the details and details.



Joint reading is the reading of the same text by different students, each of whom has his own specific task in this text.

As a result, each of the students reports their original information and together they give a complete picture of extracting different information from the same text. Thus, communication in teaching reading is achieved through the use of different types of reading, different types of speech-cognitive tasks and different methods of organizing reading as a type of speech activity.

Global informatization, scientific, technical and socio-economic progress have determined the need for a high level of reading and reading skills among students.

In foreign language lessons, reading is one of the most important types of communicative and cognitive activity of schoolchildren. It acts as a goal and means. In the first case, students must master reading as a source of information; in the second, to use reading to better master linguistic and verbal material, to master oral and written speech, to expand the sociocultural horizons [3; 101]. All this provides the conditions for reading as a form of verbal communication. Any communication is always motivated, that is, when transmitting the read information, a person always pursues a certain goal: to inform, convince, express his attitude, influence the addressee in a certain direction, etc. In order to fill such a process with meaning in the process of foreign language education comes to the aid of communication-oriented reading. One of the most important aspects of this type of activity is its methodological organization, including such a method of organization as jigsaw reading.

Jigsaw reading (literally translated from English - "Openwork Saw," or "Zigzag") is one of the approaches to organizing training in collaboration. It was developed by American professor Elliot Aronson in 1971. Jigsaw reading is a great way to introduce speaking into a reading lesson. It provides a real opportunity for genuine communication. In real life, we may tell people about a news article we have read, so this is a classroom activity that is fairly authentic.

A characteristic feature of the lesson using the Zigzag strategy is group work on the material. Let's take a closer look at the technology for conducting a foreign language lesson using "Jigsaw reading".

During the lessons with the use of gaming technologies, all groups of students are active: not only strong and medium, but also weak students, with their abilities, can realize themselves, take part in teamwork, and contribute, while improving their knowledge, skills. How to organize the game in the lesson?

At the beginning of the lesson, the teacher creates a situation that can surprise, set up for active work. Further, it reveals the level of students' awareness of the topic (problem) based on the "brain attack", informs the students of the chosen strategy, according to which they have to work. If students are not familiar with "jigsaw reading", the teacher must first introduce the children to this strategy. Next, the class is divided into groups. The teacher reports the task, explains the course of their subsequent actions. Each student in the group receives an individual card with a piece of text, the material of which is different from the material of the card of another member of the subgroup, that is, everyone knows what the other does not know. The student independently reads the fragment of the text proposed by the teacher, then performs the task, for example: compiles a cluster, fills out a mental map, a table of "Thin and fat questions", a causal scheme, etc. If there is a problem in the text for subjective processing by students of the assigned information, you can also use a graphic organizer such as "Fishbone".

At the end of the work, students move to other groups - groups of experts. New groups are composed in such a way that each group has specialists on one topic. "Experts" discuss the text within their group on the basis of graphic organizers prepared in the process of individual work, and work out the most optimal variant. Then together they carry out tasks preparing to transmit the contents of the text. The tasks can be various, for example, you can invite students to compile a table of "Wh-questions", a logical-syntactic diagram representing the skeleton of the content of the text, etc. In the process of cooperation, the "experts" compile a general presentation scheme of the message on the topic. In groups, choose one representative who will conduct the final presentation.

Students then return to their original groups. Having returned to his group, the expert acquaints other members of the group with his text, using the general presentation scheme. The group exchanges information of all its members. Thus, in each working group, thanks to the work of experts, a general idea is formed on the problem being studied. The next step will be the presentation of information on individual topics that the expert conducts from each group, others make additions, answer questions. Thus, there is a "second hearing" of the topic.

Work on the text ends with frontal work - a presentation by representatives from each group. Such work on the text makes the lesson more interesting, fosters a responsible attitude towards educational work in children, and contributes to the cohesion of the classroom team.

The teacher must ensure that during the game one of the groups does not suffer complete failure, as



this may lead not to increase motivation, but to provoke the opposite effect. In this case, it is necessary to find an opportunity to rehabilitate the group of "losers" in the same lesson.

In order to conduct a game consisting of several diverse or creative tasks, it is important to monitor the uniform division of students into groups: each group should have an equal number of strong, weak and average students. Otherwise, it will be difficult to evaluate the work of the group. If one group is much weaker than the other, then the result of the competition is a foregone conclusion, and students' interest in such a game disappears.

The division into groups in this case depends on the objectivity of the teacher, his knowledge of the characteristics of this team. However, for a game where students use words and constructions learned at home or prepare in advance for a quiz lesson, other ways of dividing into groups are possible:

Draw (draw a card: red - you will be with red, yellow - you will be with yellow; pull a card with the last name - English, Irish or Scottish; pull out a card with fruit or vegetables, etc.);

Use of a reader;

Boys / girls and others

No matter how the children share the groups, everyone should participate in the game without exception. If in one of the groups one student is more, then the other should receive one less task.

It is important that the atmosphere in the lesson with the use of gaming technology is friendly, encouraging. During the game, team members should consult, help each other, but each must respond individually.

The role of a teacher in lessons using gaming technologies is very important in selecting training material and determining the possibility or expediency of its use. The material should correspond to the topic of what the class is studying at the moment, tasks should not contain non-semantic lexical units or unfamiliar grammatical structures.

The teacher should know well the class in which he started the game, otherwise it may turn out that this form of work is not interesting for this class and the game will not take place or will not achieve the desired result. The teacher must understand what games may interest older students and those younger. Classes may differ in the level of emotionality. For emotional groups of students, outdoor team games are well suited, while for groups with an intellectual warehouse, joint creative tasks will be interesting.

In addition, the Zigzag strategy has other potential features:

- Students need to convey the perceived message in a truncated, transformed form, while retaining its meaning. Such mental operations as: selection of the main facts, screening of secondary ones,

rearrangement, building your own logical chain of reasoning are supposed

- Often one word and expression is replaced by another (reproductive-productive level);
- The choice of lexical and grammatical constructions largely depends on the personal characteristics of the speaker and the listener (which provides students with the opportunity for self-realization);
- Repeated repetition of the material ensures its strong assimilation;
- When completing assignments, the student acquires problem-solving skills, the critical thinking of students is formed;
- integration of different aspects of speech (reading, dialogic and monologic speech, as well as written speech) enables students not only to extract the necessary information from the text itself, but also helps to achieve the main goal - communicatively-oriented communication of students in order to receive and exchange language information.

The teacher himself becomes the organizer of an independent educational, cognitive, communicative, creative activity of students. He has much more opportunities to differentiate and individualize the learning process, to use the possibilities of interpersonal communication of students in the process of their joint activities.

Studying the application of the Zigzag strategy in foreign language lessons, we can conclude that it is most effective to use it at the third level of secondary education for the development of the following skills in students:

Transmit information to another person in an accessible manner;

- analyze the text together with other people;
- conduct research in a group.

In order for the organization of communicatively-oriented reading using the Zigzag strategy to be effective, the teacher needs to tactfully manage the process of transmitting information, gradually, step by step to teach the student the necessary skills so that he can achieve his lofty goal.

1. It is necessary to show and clearly explain to students why one should possess the listed skills: highlight the main thing; reduce, replace with synonyms, transform, combine.

2. It is important to offer students only interesting texts that take into account their needs and the level of their intellectual development and cause a desire to share what they have read with other students.

3. Begin communicatively-oriented learning to transmit read from spoken texts, which at first can serve as a model for expression, since they are characterized by invertedness, the presence of a speech task.

4. To create conditions for the transition from textual transmission of content to retelling read in your own



words, which is based on the actions of transformation, combination, compression of the text, highlighting the main [4; 466].

So, the organization of work on the text with the help of the Zigzag strategy acts as a connecting link between reading and speaking, providing a transition from students' perception of an authentic sample of foreign language speech to the generation of their own statement in a foreign language.

Jigsaw reading is a learning situation where one text is divided into several small fragments, each student reads only this small fragment, and then all students exchange information. As a result, each of the participants in this work forms the knowledge of the entire text (from the stories of others). Parallel reading is a technique when students read different texts on the same problem (topic) and then exchange the information they receive, find out the similarities and differences, supplement the details and details. Joint reading is the reading of the same text by different students, each of whom has his own specific task in this text.

As a result, each of the students reports their original information and together they give a complete picture of extracting different information from the same text. Thus, communication in teaching reading is achieved through the use of different types of reading, different types of speech-cognitive tasks and different methods of organizing reading as a type of speech activity.

In conclusion, it should be noted that the use of gaming technology is possible when learning all types of speech activity. The success of such work depends on the ingenuity of the teacher, his ability to invent new games and transform the existing skills for teaching different skills and abilities in relation to the conditions of a particular class.

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A SOLUTION FOR MEDICAL INVENTORY RESOURCES AND FINGERPRINT IDENTIFICATION

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ABSTRACT

The work introduced right now to show the effect of collective organizations between the medical clinics on the improvement of the medicinal services supply chains designs. Specifically, we present a methodology that help the execution of new options for stock administration running from the stock centralisation to the crisis sidelong transshipment rehearses inside a gathering of close by medical clinics.

Clinics are changing themselves by digitizing persistent records to give snappy, protected, improved and savvy care. Anyway this procedure isn't without a lot of issues. Passwords that are utilized to shield emergency clinic PC frameworks from unapproved clients are not totally secure and may simply give an incorrect conviction that all is well with the world. There is likewise a chance of patient wellbeing records getting stirred up, lost or it might contain deficient data which may bring about wrong drug. Moreover, one patient's data could be moved into someone else's record or records could go to an off-base individual bringing about clinical personality misrepresentation.

OBJECTIVE OF THE RESEARCH WORK

- To embrace examinations in explicit zones of wellbeing and clinical research utilizing measurable strategies and information mining and information revelation techniques.
- To grow further and assess inventive strategies for conveying separation clinical crude materials.
- Plan a framework for better patient consideration.
- Quiet administration (planning, enrollment and long haul care)
- Clinical Stores
- Make benchmarks based secure access to patients individual information and clinical records by utilizing RFID labels and Web Service with the assistance of equipment unit. This framework utilizes Web administration interfaces to help standard Electronic Health Records for understanding record

INTRODUCTION

The stock administration issue is one of the most contemplated issues in tasks explore. The goal of this examination is to propose a genuine contextual investigation of a choice emotionally supportive network dependent on streamlining techniques to help stock overseeing drugs productively. Our investigation case centers around the crisis division of Charles Nicolle emergency clinic in Tunis, Tunisia and intends to diminish sedate' s deficiencies. The principle commitments of this paper are twofold: First, we expect to streamline the stock medication the board by ordering drugs. When the medications were appropriately arranged, the fitting stock strategies are received and their parameters are determined. At that point, a Decision Support System (DSS) to oversee productively medicates stock is created. As a result, the patient fulfillment is improved and the stock administration cost is decreased.

The accompanying segment presents the writing on stock administration models dependent on streamlining instruments. The most broadly talked about theme is the decision of the model, which incorporates the meaning of supply recurrence



(occasional or nonstop) and parameterisation of the control point, the amount of renewal and/or the degree of control. All distributions introduced incorporate improvement models.

RFID innovation offers incredible potential to altogether diminish costs while improving materials the board and stock activities all through clinics and other medicinal services offices. RFID-based arrangements assist medical clinics with addressing the most central inquiries of knowing who and where its patients and assets are. With this information, emergency clinics can upgrade various procedures identified with resource the board, persistent following and throughput, stock control, and patient-driven administrations

Difficulties looked by an emergency clinic

- Deficiency of medication and Surgical hardware
- Overload
- Arranging drugs, which need extraordinary consideration
- Organizing Stock
- Making Stock and Sales Reports

Existing System

Poor information the board: Most specialists depend on data put away in PCs to complete every day errands. Because of the nearness of on-premise manual databases, the likelihood of human blunder goes up. This prompts erroneous and missing records which can spell debacle for clinics.

Abuse of clinical hardware: The absence of vigorous regulatory practices can prompt the stirring up of clinical stock, for example, IV lines and arrangements. In a similar vein, an inappropriate hardware can be conveyed to an inappropriate spot, and cause activities to go haywire. Notwithstanding losing resources, emergency clinics wind up squandering significant assets also.

Visit gadget disappointments: It is very regular for clinics to manage delayed vacation for clinical instruments and gadgets. With regards to managing patients, you basically can't stand to have mechanical disappointment. Such circumstances can be effortlessly stayed away from through standard support meetings.

Hardware Considerations

1) The Raspberry Pi 3 Model B+ is the most recent item in the Raspberry Pi 3 territory, flaunting a refreshed 64-piece quad center processor running at 1.4GHz with worked in metal heatsink, double band 2.4GHz and 5GHz remote LAN, quicker (300 mbps) Ethernet, and PoE ability through a different PoE HAT.



2)RFID RC522 Reader with Tag:There are modest RFID modules that can peruse and compose Mifare's labels and being sold at a few web stores, as eBay and included with many "starter packs" these days. Basically search RFID-RC522 (MF-RC522). The microcontroller and card peruser utilizes SPI for correspondence (chip underpins I2C and UART conventions however not actualized on library). The card peruser and the labels impart



13.56MHz electromagnetic field.

SOFTWARE DESIGN CONSIDERATIONS

Python is a deciphered, object-situated, significant level programming language with dynamic semantics. Its significant level implicit information structures, joined with dynamic composing and dynamic official, make it extremely appealing for Rapid Application Development, just as for use as a scripting or paste language to associate existing parts together. Python's straightforward, simple to learn linguistic structure stresses coherence and in this way lessens the expense of program upkeep. Python underpins modules and bundles, which supports program measured quality and code reuse. The Python translator and the broad standard library are accessible in source or double structure without charge for every single significant stage, and can be openly disseminated.



PROBLEM DESCRIPTION

We are keen on the medication stock administration in the xyz crisis division. In fact, the drug store has a load of high turnover drugs. For such a long time, the drug store of the xyz crisis office is standing up to numerous issues due basically to the nonattendance of a data framework for the medications stock administration, the nonappearance of stock arrangement, the absence of a general inventory plan, and the mistaken assistance needs estimation. Along these lines, this division faces visit drugs interruptions. This prompts the lessening of the patient fulfillment and to the expansion of the capacity costs. The objective of this work is to advance the medication stock administration by setting the ideal assistance level so as to limit stock and buying costs.

IMPLEMENTATION

In these the user can access to all the medical requirements that is required and all the medicines available in the nearby hospital through which there will be a data which can be used in case of emergency and also we are using a finger print scanner in which the hospital management can access to the personal data of the user in which the user can access and provide some information when required

Scope and Limitation of the Study

Because of asset impediment in both time and cash, this investigation depends on Stock administration Constraint

- A ton of Setbacks were experienced in course of this venture. There were imperatives in numerous territory like
- Money: The significant expense of material for the venture and the ordinary limitations increment in transport charge during information assortment influenced the examination work.
- Information Collection: the exploration work had an issue in gathering information from staff.
- Material: material compels assume a significant job in that constraining some examination that would have contributed gigantically.

CONCLUSION

Through these the medical pharmacy chain will be improved and can be well utilized in case of some emergency. Then the user can also have a friendly access to the user.

Through many lives which are at danger or risk can be saved easily.



SOCIAL ADJUSTMENT AMONG STUDENTS WITH PHYSICAL DISABILITIES: THE PREDICTIVE INFLUENCE OF PERSONALITY TRAITS

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ABSTRACT

The study was conducted to investigate the extent to which personality traits determine the social adjustment of students with physical disabilities in Port Harcourt City Local Government Area of Rivers State. The study was guided by two research questions and two corresponding null hypotheses respectively. The study adopted the correlational research design using a sample of 236 students with physical disabilities drawn using purposive sampling techniques. An instrument titled Personality Traits and Social Adjustment Inventory (PTSAI) was used for data collection which was adequately assessed for reliability and validity. The Multiple regression coefficient was used for data analysis for the research questions, while ANOVA and t-test associated with multiple regression were used for analysis of corresponding null hypotheses at 0.05 level of significance. The result obtained from the analysis showed that personality traits had a significant influence the social adjustment of individuals with physical disabilities, with openness to experience having the highest prediction, while neuroticism had the least prediction. On the basis of the results, it was recommended that educational psychologist should endeavor to design and develop programmes that can facilitate the optimal social adjustment of students with physical disabilities.

INTRODUCTION

The award winning movie “Enitan” aptly captured the challenges facing students with one form of disability or the other (Bako, 2013) As the story goes, Enitan, the major character in the movie had dyslexia, a learning disability disorder that inhibits adequate pronunciation and writing of words or even sentences. She became the centre of ridicule for classmates both in and off the classroom. Her teacher, not understanding her disability status insisted that she performs equally like other students in the class. Her home teacher resigned because he saw nothing positive from his effort. The story above adapted from a true life experience would no doubt resonate with teachers,

students, sibling and parents of students experiencing one form of disability or the other. The student in focus may seem detached, withdrawn and even incapable of forming normal social bond with teachers and family members. As teachers, these researchers have experienced the isolated nature of most students who had various forms of disability. The quest for understanding how they students with disability adjust to the age-appropriate social expectation is what led to the current study.

As stated by Asiwe and Omiegbe (2014:24) disability education or education for the handicapped is a subset of special education “which is concerned with the education of individuals such as physically



challenged, disadvantaged and the gifted who would not benefit from the average classroom instruction". The criteria for the definition of disability can take multiple forms including statistical, biological or normative as posited by Wasserman, Asch, Blustein and Putman (2015). As such their classification of disabilities into the following categories of psychological disabilities, cognitive disabilities, hearing disabilities, visual disabilities, brain disabilities and physical or orthopedic disabilities fits the context of a Nigerian environment where lack of adequate screening tools has hindered interest in the psychological and social adjustment of students with disabilities. This study shall therefore be focused on the social adjustment of students with physical disabilities.

Physical disability refers to a family of severe physical conditions that adversely affects a person's ability to function optimally in any domain of performance e.g. cognitive, social, emotional and movement. Of all disabilities, physical disability is the most obvious as its effects are external and conspicuous (Rose, Sweverer & Espelage, 2012). It is therefore not surprising that students with physical disabilities are up to four times more likely to be victimized and ostracized by peers, teachers and even family members, when compared to other forms of disabilities such as cognitive or psychological (Rose, 2010) While some students with physical disabilities display tendencies for poor social adjustment, others seems to flow better in social settings.

This study adopts the definition of Jean (2010) who defined social adjustment as the process by which a person (including students) adjust to the social environment of a place and then operationalized it by giving specific examples such as students' perception of their non-academic lives, number of extra-curricular activities participated in, hours spent in social activity and informal interactions with teachers and other staff. Research by Adams and Proctor (2010) showed that variables such as problem solving skill, attributional style, stressful events and perceived social support all contribute to the level of social adjustment students exhibit. However, previous studies have not investigated the extent to which personality traits influences the social adjustment of students with physical disability. It is therefore against this background that the present study investigated the extent to which personality traits influences the perceived social adjustment of students with physical disability in Port Harcourt Metropolis City Local Government Area of Rivers State.

The term 'personality' refers to a pattern of relatively permanent traits and unique characteristics

that add both consistency and individuality to a person's behaviour (Feist & Feist, 2008). Schultz and Schultz (2013) defined personality as the unique relatively enduring characteristics of an individual that differentiates him/her from others. Although various dimension of personality has been identified in the scientific literature, the big five dimension of personality by McCrae and Costa (2008) is the most popular theory of personality. This theory posits that personality is broadly classified into five traits which are: openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. Openness to experience refers to the trait of intelligence, curiosity and imagination of the individual. Personality trait of conscientiousness is the dimension that represents an individual who is diligent and tends to be reliable in their actions and whatever they find themselves doing. Agreeableness represents the helpful, forgiving and trusting people who often show respectable work behaviour. Extraversion traits includes being outgoing talkative, noisy, social poise, assertiveness and enjoying being in social situations. Agreeableness represents the helpful, forgiving and trusting people who often show respectable work behaviour (McCrae & Costa 2008).

The extent to which personality traits influences social adjustment have been investigated by other researchers. Azic, Becivic and Jokovic (2010) investigated the contribution of personality traits and social adjustment to life satisfaction in college freshmen using a sample of 492 freshman from University of Rijeka in Croatia. Two instruments were used for data collection namely Students' Adaptation to College Questionnaire and the Big Five Inventory. Data analysis was done using means, standard deviation, independent sample t-test and hierarchical regression. Result revealed that personality traits of extraversion, openness to experience and conscientiousness have positive relationship with social adjustment and overall life satisfaction. Azic et al study is different from the present study to the extent that this study will utilized adolescents in secondary schools as the sample for the study, as against university freshmen they used as their sample.

Nagle and Anand (2012) investigated on empathy and personality traits as predictors of adjustment among Indian youths using a sample of 52 adult males who volunteered for the study. The correlational research design was adopted for the study. Data for the study were collected using the Jackson Personality Inventory for personality traits, Empathy Quotient for empathy and the Bell Adjustment Inventory for adjustment. Data analysis was done using simple correlation and regression analysis. Result from



the study revealed that personality traits like interpersonal affect and conformity facilitated the process of adjustment, whereas traits like anxiety worked in the opposite direction. The present study is different from the former study to the extent that the former utilized standardized instruments for the collection of data, while the present study will collect data by means of researcher-developed instrument. Furthermore, while Nagle and Anand used adult males as their sample, this study will use both male and female adolescent students who are physically challenged.

Aim and Objectives of the Study

The aim of the present study was to investigate the extent to which personality traits influence social adjustment among students with physical disabilities in Port Harcourt City Local Government Area. In specific terms, the objectives of this study were

1. Investigate how personality traits (openness to experience, conscientiousness, extraversion, agreeableness and neuroticism) jointly predict social adjustment of students with physical disabilities in Port Harcourt City Local Government Area.
2. Investigate the independent contributions of personality traits (openness to experience, conscientiousness, extraversion, agreeableness and neuroticism) on social adjustment of students with physical disabilities in Port Harcourt City Local Government Area.

RESEARCH QUESTIONS

The following research questions were answered to guide this study.

1. To what extent does personality traits (openness to experience, conscientiousness, extraversion, agreeableness and neuroticism) jointly predict social adjustment among students with physical disabilities in Port Harcourt City Local Government Area of Rivers State?
2. To what extent do personality traits (openness to experience, conscientiousness, extraversion, agreeableness and neuroticism) independently predict social adjustment of students with physical disabilities in Port Harcourt City Local Government Area of Rivers State?

HYPOTHESES

The following null hypotheses tested at 0.5 level of significance were formulated to guide this study

1. The combined influence of personality traits do not significantly predict the social adjustment of students with physical disabilities in Port Harcourt City Local Government Area.
2. Personality traits do not independently have significant prediction on the social adjustment of students with physical disabilities in Port Harcourt City Local Government Area of Rivers State.

METHODS

Design: The correlational research design was used in this study since data on physically challenged children reported emotional intelligence were collated used to predict their social adjustment. A sample of 237 students with physical disability in Port Harcourt Metropolis was chosen for this study using the purposive sampling technique. This sampling technique was adopted for the study because the researcher did not have access to the specific number of students with physical disabilities in the area under investigation.

Instrumentation: For data collection is a non-cognitive, multivariate instrument titled Personality Traits and Social Adjustment Inventory (PTSAI). The instrument was divided into two sections labeled A to C. Section A of the instrument was aimed at collecting demographic information from the respondents such as their gender, age, family type etc. Section B is a 50-item questionnaire developed to assess students' personality traits. This section was constructed using a modified 4-point Likert scale of Strongly Agree (A), Agree (A), Disagree (D) and Strongly Disagree (SD), scored as 4 points, 3 points, 2 points and 1 point respectively. This instrument was adapted from Oliver (1999) Big Five Inventory. Section C of the instrument is a 20-item scale developed to assess the social adjustment of the respondents. This section of the instrument was adapted from Iyomatere (2016). This section was constructed on a four point likert scale of Always applies to me, Sometimes applies to me, Seldom applies to me, Never applies to me scored as 4, 3, 2, and 1 point(s) respectively. For the section on emotional intelligence, Cronbach Alpha Coefficients of 0.91, 0.83, 0.71, 0.74 and 0.68 were obtained agreeableness, extraversion, openness to experience, neuroticism and conscientiousness respectively. Finally, the section on social adjustment yielded an alpha



coefficient of 0.69 which indicated that the instrument possessed ample reliability for use.

Data Collection and Analysis: Copies of the two instruments were administered directly to the respondents by the researcher, with the help of two research assistant, after receiving permission from the principal or the school head. The instruments were then collected on the spot after it has been completed by the students. The research questions were answered using

multiple regression coefficients and beta values associated with multiple regression, while ANOVA and t-test associated with multiple regression were used for testing the corresponding null hypotheses where applicable.

Table 1: Joint prediction of personality traits on social adjustment

MODEL SUMMARY					
Model	R = 756	R-Squared = 0.571		Adjusted R-Squared = 0.562	
ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig
Regression	16708.842	5	3341.768	61.231	.0000 P<0.05
Residual	12552.562	250	54.576		
Total	29261.407	235			

An observation of the values shown in Table 1, indicates that when the joint prediction of personality traits on social adjustment of students with physical disabilities was conducted, an R value of 0.756 was obtained with an R² value of 0.571 and an adjusted R² of 0.562. On the basis of the adjusted R-Squared, it can be seen that 56.2% variation in the social adjustment of students with physical disabilities can be attributed to the joint contribution of personality traits.

Furthermore, the result of the ANOVA associated with multiple regression showed that an F value of 61.231 was gotten with an associated p-value of 0.000 at 5 and 230 degrees of freedom. From this result obtained, it can be seen that personality traits had a significant joint predictive power on the social adjustment of youths with physical disability in Port Harcourt Metropolis. The null hypothesis was therefore rejected.

Table 2: Beta values associated with multiple regression of personality traits on social adjustment

Model		Unstandardized		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	27.617	6.543		4.221	.000
	OPENNESS	.753	.174	.255	4.337	.000
	NEUROTICISM	-.982	.193	-.277	-5.088	.000
	AGREE	-.007	.079	-.004	-.091	.928
	CONSCIENTIOUSNESS	.622	.151	.246	4.111	.000
	EXTRAVERSION	.522	.149	.175	3.494	.001

On the basis of the standardized beta coefficients shown in table 2, it can be seen that openness to experience had a beta value of 0.255 with an associated t-value of 4.337 and a p-value of 0.000. This result showed that openness had a positive but significant independent prediction on social adjustment of students with disability. Regarding neuroticism, it was shown had a beta value of -0.277 with an associated t-value of -5.088 and a p-value of 0.000. This result showed that neuroticism had a low negative but significant independent prediction on social adjustment of students with disability. On its own, the result showed that

agreeableness had a standardized beta value of -0.004, with a t-value of -0.91 and an associated p-value 0.000. This result indicates that agreeableness does not have any significant impact on social adjustment. For conscientiousness, the result showed that it had a significant independent prediction on the social adjustment of students with physical disabilities as the standardized beta coefficient obtained which was 0.246 and a t-value of 4.111 with a p-value of 0.000. Finally, the result for extraversion showed that the standardized coefficient value obtained was 0.175 with a t-value of 3.494 and a significant value of 0.001 which was not



significant.

DISCUSSION

The result from the study showed that personality traits is a significant determinant of social adjustment among students with physical disability in Port Harcourt Metropolis. This result is not surprising because the personality traits of a person determines their behavior including how they relates with others. Furthermore the result showed that openness to experience had the highest independent prediction on their social adjustment followed by extraversion, conscientiousness and lastly agreeableness. This result is not surprising but expected because it is this researcher's personal opinion that students who are open to new experience interacts well with others and can blend into new environments. The result from this study is similar to that obtained by Azic et al (2010) who found out that personality traits of extraversion had a significant prediction on the social adjustment of college students in Croatia. Also, Nagle and Anand (2012) found out that personality traits of freshmen in India had a significant predictive power on the social relationships with their peer.

RECOMMENDATIONS

Based on the findings and conclusion reached, the following recommendations were made:

1. Counsellors should endeavor to integrate personality assessment in the counselling services they provide to students in school so as to improve their social adjustment.
2. Parents should work with school authorities to develop a programme for assisting students improve their social adjustment, especially those with disabilities.
3. Educational psychologist should endeavor to design and develop programmes that can facilitate the optimal social adjustment of students with physical disabilities.
4. Peer education and mentoring programmes should be established to improve the level of interactions between students so that they can develop positive social adjustments in relations with their peers

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