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RESEARCH ON IMPROVING THE WORKING BODIES OF THE MACHINE FOR CLEANING COTTON FROM WASTE

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ABSTRACT

The article provides information on improving the working bodies of the machine for cleaning raw cotton from large and small trash impurities. Combined cotton cleaner (CCC) containing areas for cleaning from fine trash with pegs with nets under them, zones for cleaning coarse debris with serrated cylinders, grates, lapping brushes, hoppers for debris removal, characterized in that pegs are made with different diameters of pegs, and the diameter of the cylinder heads of each subsequent zone is 20% larger than the diameter of the cylinder heads of the previous zone. The cleaner according to figure 1, characterized in that the grates are made multifaceted, and the grates in the first zone of large cleaning made six-sided, in the second zone seven-sided and in the third zone eight-sided.

KEYWORDS: *raw cotton, cotton cleaner, trash, pegs, cylinder.*

INTRODUCTION

In the world, research work is carried out for the cotton ginning industry aimed at the development of innovative techniques and technologies that provide for the effective use of modern achievements of science and technology, and the modernization of

existing ones [1,2]. In this industry, including the development of efficient, resource-saving designs of working bodies, grates of cotton cleaners from large trash is of great importance [3,4].

In our republic, special attention is paid to the creation of high-performance technological



machines and equipment, their control systems for technological processes of primary processing of cotton. The Action Strategy for the Further Development of the Republic of Uzbekistan for 2017-2021 provides for "... increasing the competitiveness of the national economy, Reducing energy and material costs in the economy, widespread introduction of energy-saving technologies into production ...". When performing this task, it is important, among other things, to create effective designs of grates for cleaning cotton from coarse trash and introduce them into production in order to obtain products of a given quality according to the initial quality indicators of raw cotton [5-8].

At the present stage of development of the cotton ginning industry, it is important to intensify the cleaning of raw cotton, develop more advanced designs, find new, effective methods for cleaning raw cotton from small and large trash impurities, as well as the choice of rational modes of movement of the working bodies of cotton cleaners [9,10].

The process of cleaning raw cotton from weeds and impurities is determined by the nature of its contamination and the effectiveness of the working bodies of the cleaners. The purifiers are divided into machines for separating large weed impurities from raw cotton (cotton stalks, boll, flap, etc.) and machines for separating small weed impurities (leaf particles, bracts, flowers, dust, etc.). The efficiency of removing weeds from raw cotton largely depends on the quality features inherent in a given selective cotton variety, industrial variety and moisture content of cotton, fiber length, the residence time of weeds in raw cotton, the nature of trash adhesion and many other indicators [11,12].

MAIN PART

The closest in technical essence to the claimed is selected as a prototype cotton purifier combined brand CCC intended for cleaning raw cotton medium fiber and fine fiber varieties from coarse and fine trash in the ginning industry [13]. The disadvantage of the known design of the combined cotton cleaner (CCC) is that it catches small trash impurities and merges with large trash in

which there are volatiles of raw cotton. In addition, the CCC purifier does not have a sufficiently high efficiency of cleaning raw cotton, both fine and coarse trash.

The purpose of the study is to remove small and large trash impurities separately and increase the cleaning effect. The task is solved by improving the design of the elements of the zones of small and large cleaning [14,15].

The essence of the design lies in the fact that a combined cotton cleaner containing a cotton cleaner from small debris pegs and a grid under them, alternating with them a cotton cleaner from coarse debris containing serrated cylinders and with a grate under them and a stationary brush, while the diameters of the pegs of each subsequent cylinder 10% more than the diameters of the heads of the previous cylinder, the grates of the large trash cleaner are made multifaceted, and the grates of the first zone of large cleaning are made hexagonal, the second zone is seven-sided and the third zone is octagonal. At the beginning of cleaning, the raw cotton will be less loosened, and therefore it is important to effectively open the cotton by making the splits of the first cylinder with the smallest diameter. In the final cleaning zone, the cotton will be more loosened, and therefore, for efficient transportation, the diameter of the cylinder heads is made the largest. Accordingly, in the first zone for cleaning cotton from coarse trash, the grates are made hexagonal, which allows the cotton to be loosened into separate bats, and in the third zone, the grates are made octahedral. At the same time, the inhibition of cotton fly worms during their interaction with octahedral grates is maximally reduced. Combined cotton cleaner allows efficient separation of trash, while small and large trash impurities are removed separately through appropriate screw conveyors [16,17].

The design is illustrated by a drawing, where in fig. 1 is a general diagram of a combined cotton cleaner, in fig. 2 - splitting cylinders of the first, second, third zones for cleaning cotton from fine trash; in fig. 3-section A-A in fig. 1, fig. 4-section B-B in fig. 1, fig. 5 - section C-C in fig. 1.

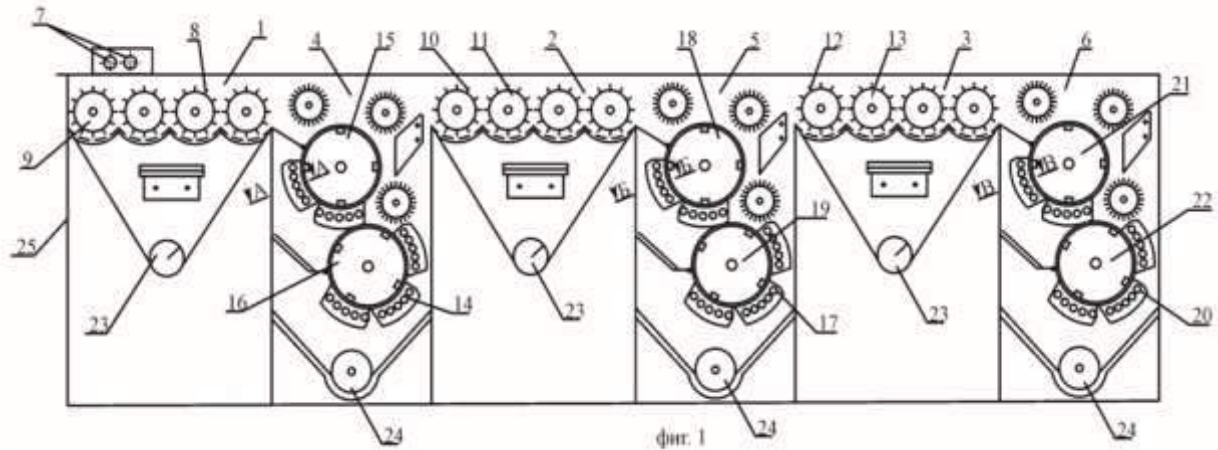


Fig. 1. General scheme of cotton cleaner combined

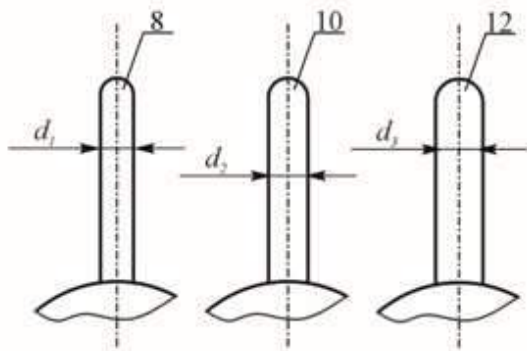


Fig. 2. Splitting cylinders of the first, second, third zones for cleaning cotton from fine trash

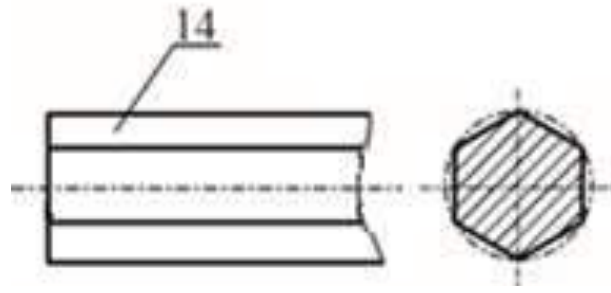


Fig. 3. Section A-A

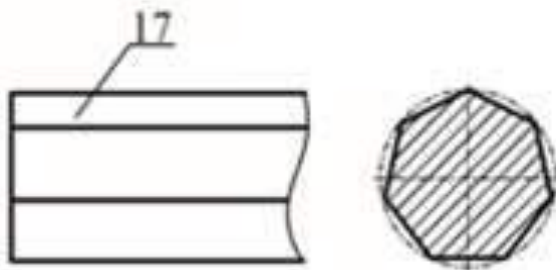


Fig. 4. Section B-B

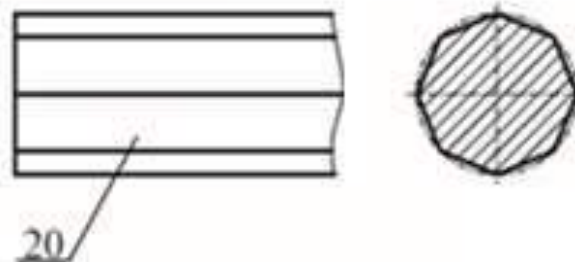


Fig. 5. Section C-C

Combined cotton cleaner contains 1,2,3 zones for cleaning cotton from fine trash and 4,5,6 zones for cleaning cotton from coarse trash. Above the first zone 1, the feed rollers 7 are installed. The pegs 8 of the cylinders 9 of the zone 1 are made with a diameter d_1 , the second zone 2 the pegs 10 of the cylinders 11 are made with a diameter of $d_2 = 1.2 d_1$, and in the third zone 3, the pegs 12 of the cylinders 13 are made with a diameter of $d_3 = 1.2 d_2$. In zone 4 the grates 14 under the serrated cylinders 15 and 16

are made hexagonal, in zone 5 the grates 17 under the serrated cylinders 18, 19 are made seven-sided and in zone 6 the grates 20 under the serrated cylinders 21, 22 are made octahedral. Small trash impurities are removed by the augers 23, and large trash impurities are removed through the augers 24. The working bodies are installed in the housing 25.

The cleaner works as follows. The raw cotton through the feed rollers 7 enters the first zone 1 to the peg cylinders 9, the pegs 8 of which are



made with the smallest diameters capture and pull the cotton effectively loosens it. At the same time, in zone 1, raw cotton is less loosened and therefore, due to their greater mutual cohesion, is transported without braking to zone 4. In this zone, grates 14 under the serrated cylinders 15 and 16 are hexagonal, when cotton interacts with them; multidirectional reaction forces occur with sufficient values, large trash is effectively separated. Further, in the 2nd, 5th, 3rd and 6th zones, cotton is cleared in a similar way. But, at the same time, in the course of cotton movement along these zones, the diameters d_2 , d_3 of pegs 10 and 12 will be larger than d_1 and have the ratio:

$$d_2=1.2 d_1; d_3=1.2 d_2.$$

Where, d_1 - pegs diameter 8 mm; d_2 - pegs diameter 10 mm; d_3 - pegs diameter 12 mm;

With an increase in the diameters of the pegs 10 and 12 in the corresponding zones, they allow not only the separation of trash from the cotton, but also its full-value transported without braking due to the larger contact area of the pegs 10 and 12 with the cotton bats. It is known [2] that with an increase in the number of grates of a cotton cleaner from coarse trash, the cleaning effect decreases. Moreover, with an increase in the number of grate faces, they approach the cylindrical surface. When making grates 14 hexahedral, their interaction with less loosened cotton, forces arise in a versatile direction, leading to additional loosening of cotton, thereby increasing the cleaning effect in zones 5 and 6, grates 17 and 20, made respectively seven and octahedral, also forces interactions with cotton in various ways. But, at the same time, the inhibition of cotton volatiles decreases, leading to their continuous transportation. The isolated small trash impurities in the 1st, 2nd and 3rd zones are removed by 23 augers, and the separated large trash impurities in the 4th, 5th and 6th zones are removed by 24 augers.

CONCLUSION

Combined cotton cleaner allows to increase the effect of cleaning raw cotton on fine and coarse trash up to (25-26)% relative to the CCC cleaner.

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BRAIN COMPATIBLE LEARNING: AN EFFECTIVE TOOL FOR ENHANCED LEARNING IN CHEMISTRY

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ABSTRACT

Studies in the field of neurobiology have improved understanding of how the brain functions and how learning is formed. Brain Compatible Learning strategy has been called a combination of brain science and commonsense. Brain Compatible Learning strategy transact knowledge by activating the function of brain. Current research on neuro science report that there is a positive relationship between Brain Compatible Learning and pupils' academic achievement. The present study aimed to investigate interaction of instructional strategies on Achievement in Chemistry of standard IX students. This experimental study, which was designed as Pretest-Posttest Non-equivalent Group Design with sample consists of 80 pupils in IX grade. Two classes from two schools were determined as experimental and control groups respectively. During the research process, the experimental group was administered a Brain-Compatible learning strategy, while the control group was administered a Activity Oriented method of teaching. The data collected was subjected to statistical analysis, namely, Mean Difference Analysis, and One way Factorial ANCOVA. One of the important findings of the study is that the Brain Compatible Learning Strategy is more advantageous over Activity Oriented Method of Teaching in enhancing students' achievement in Chemistry.

KEY TERMS: *Brain Compatible Learning strategy, Activity Oriented Method of Teaching, Achievement in Chemistry.*

INTRODUCTION

Instructional Strategies have a great influence on educational process. The selection of strategies is in accordance with the objective of the curriculum. In many western countries innovative strategies of teaching are practiced, that encourages active participation of the learner. Indian educational system has been constantly subjected to several reforms especially in educational policies, curriculum, text book etc. but such reforms are very limited in transactional mode. But western countries are far ahead in researching and use. In such a situation, the existing system of education

requires some improvement in teaching learning process. There are several instructional strategies that help the teacher to realize the educational objectives.

Studies (Posner & Raichle, 1994) in the field of neurobiology have improved understanding of how the brain functions and how learning is formed. Educators who work in collaboration with neurobiologists integrate knowledge of the functions of the brain and adapt them to learning principles (Wortock, 2002). Brain-based learning aims to enhance the learning potential and, in contrast to the traditional approaches and models, provides a



teaching and learning framework for educators (Materna, 2000).

Brain Compatible Learning strategy transact knowledge by activating the function of brain (Caine & Caine, 1991). Intensive studies conducted by Hart (1978), Wolfe & Patricia (2010), Radin & Jean (2009) and current research on neuro science report that there is a positive relationship between Brain Compatible Learning and pupils' academic achievement.

Brain-Compatible learning can be defined as an interdisciplinary answer to the question of "what is the most effective way of the brain's learning mechanism" (Jensen, 1998). Caine and Caine (2002) define brain-based learning as "recognition of the brain's codes for a meaningful learning and adjusting the teaching process in relation to those codes."

Need and Significance of the Study

The learning and teaching process in science courses should be based on exploration and inquiry. Since the brain inquires meaning and attempts to set associations in a natural way, exploration and inquiry based science teaching might function compatibly with the principles of brain-based learning approach (Mangan, 1998). Brain based learning aids teachers in facilitating the learning and teaching process. One way of relieving the process is to give learners more responsibilities for their own learning and encourage them to establish associations with the formerly learned subjects and new knowledge in order to form the learning. In order to establish this easiness in the learning and the teaching process, metaphors, thematic teaching, integrated teaching and open ended questions should be used in the learning environment.

The research base for Brain Compatible Learning (Slywester, 2010;) makes it clear that, it is very essential to know if this method of learning is just a fad, or whether it is a teaching method that has great promise in academic achievement of student across the nation.

The investigator could not locate study showing the interactive effect of Brain Compatible Learning Strategy and Activity Oriented Method of teaching in Chemistry in Kerala situation. Therefore, in our context the investigator decided to conduct an experiment on the same on high school students in Kerala.

Variables Selected for the Study

Independent variables of the study were Instructional Strategies (Brain Compatible Learning and Activity Oriented Method of Teaching). Dependent variable of the study was Achievement in Chemistry of Standard IX

students. The variables controlled in the present study were; (a) Pre-experimental Status of the Students measured in terms of pre test and (b) Verbal Intelligence

OBJECTIVES

The following were the objectives of the study.

1. To study whether there exist any significant difference in the Mean Pre-test scores, Post-test scores and Gain scores of Achievement in Chemistry of the Experimental and Control groups for the total sample and subsamples based on Gender.
2. To study the main and interaction effects of Instructional Strategies on achievement in Chemistry of standard IX students.
3. To study the effectiveness of Brain Compatible Learning Strategy over Activity Oriented Method of teaching in terms of Achievement in Chemistry of standard IX students.

METHODOLOGY

The methodology of the present study is outline as follows.

Design of the Study.

With the view of realizing the major objectives of the study, the investigator formulated a Quasi-Experimental design in which the specific design used was the Pretest - Posttest Non-Equivalent Groups Design.

Sample for the Study.

The investigator selected 90 standard IX students from two intact classrooms. Among them 45 students were in control group and 45 were in experimental group. The Experimental group was taught through the Brain Compatible Learning strategy and the control group was taught through Activity Oriented Method of Teaching.

Tools Used for the Study.

For the present study, Lesson transcripts for Brain Compatible Learning strategy were developed by the investigator for treatment in the experimental group. Lesson transcripts for Activity Oriented Method of Teaching were developed by the investigator for treatment in the control group. Achievement Test in Chemistry was used as pre-test and post-test to measure the pre-experimental status of the students and the performance of the student after the treatment respectively. For the present study the control variable, Verbal Intelligence was measured using Verbal Group Test of Intelligence (VGTI) developed by Kumar, et al (1997).

**Statistical Techniques Used**

Mean Difference Analysis was used in the study to know whether there exists any significant difference between the Experimental group and control group in case of Pre-test, Posttest and Gain scores, without controlling the effect of covariates. Analysis of Covariance (ANCOVA) was employed to remove statistically the effects of confounding variable or covariate, the initial status of the subjects measured in terms of a Pre-test and Verbal Intelligence. This statistical technique was employed to confirm the effectiveness of Brain Compatible Learning Strategy over the Activity

Oriented Method of Teaching. Scheffe' Test of Post-hoc Comparison was used to compare the adjusted criterion means of the Experimental and Control groups to determine the advantageous groups in Covariance Analysis (Scheffe,1995).

RESULTS AND DISCUSSION**Results of Mean Difference Analysis**

The result of the Mean Difference Analysis conducted for the comparison of Mean Pretest, posttest and Gain scores between Experimental and Control group are presented in Table 1.

Table 1**Data and the Results of the t-test for the Mean Scores of Pretest between Experimental and Control Groups (Total sample)**

Sample	Variable	Experimental Group			Control Group			t-Value	Level of significance
		M ₁	SD ₁	N ₁	M ₂	SD ₂	N ₂		
Total Sample	Pretest	6.5	2.116	40	6.8	2.20	40	0.62	NS
	Post Test	18.676	4.423	40	16.42	5.49	40	5.20	0.01
	Gain Score	9.5	4	40	9.87	4.99	40	3.14	0.01

NS- Not Significant

From the Table 1, the t-value obtained for pre-test for Total sample is not significant. The t-value obtained for achievement and Gain Score for Total sample is found significant at 0.01 level of significance. From the summarized result it can be said that Achievement in Chemistry and Gain Score differentiate the Experimental and control groups for the Total sample. In all the comparison the

superiority of the Experimental Group over the control Group is evident.

Results of ANCOVA for Achievement

Summary of three ANCOVA undertaken to study the effectiveness of Brain Compatible Learning strategy over Activity oriented Method of Teaching a topic of Chemistry on Achievement in Chemistry of Standard IX pupils is presented in Table 2.

Table 2**Summary of One-way ANCOVA for Achievement in Chemistry - Pretest and Intelligence (Verbal) Covariates Separately and in combination**

Sample	No. of Students	Dependent Variable	Source of Variation	Covariate	Sum of squares	df	Mean square Variance	F-Value
Total Sample	80	Achievement in Chemistry	Instructional Learning Strategies	Pre-test Scores	201.94	1	201.94	13.78**
				Intelligence (Verbal)	169.37	1	169.37	9.65**
				Pre-test and Intelligence (Verbal) in combination	188.84	1	188.84	12.80**



Result of three ANCOVA shows that the ANCOVA conducted to study the effectiveness of Brain Compatible Learning Strategy over Activity oriented Method of Teaching in a Topic in Chemistry of Standard IX pupils yielded significant F-values, using pretest and Intelligence (Verbal) as covariates separately and the combination. Effectiveness of the Brain Compatible Learning Strategy is very clear when the effect of Pretest scores, Intelligence (Verbal) separately and in combination were successively removed.

The result of ANCOVA showed that standard IX students taught through Brain Compatible Learning Strategy and Activity oriented Method of teaching significantly differ in Achievement in Chemistry than the pupils taught through the Activity oriented Method of Teaching. As higher mean achievement scores were associated with the Experimental Group to which Instructional Learning Strategy was implemented, Instructional Learning Strategy is found advantages over the Activity oriented Method of Teaching in case of Achievement in Chemistry.

CONCLUSIONS AND INTERPRETATIONS

The main objective of the present investigation was to find out the Effect of Instructional Learning Strategies on Achievement in Chemistry of Standard IX pupils. Form the results of the analysis, the investigator arrived at the following conclusions.

1. Since all the t-values were not found significant in the comparison of Pretest scores, the result suggest that Experimental and Control Groups (Total and Sub samples) were similar in case of their performance in the pretest.
2. The t-value obtained for the comparison of Post-test for Total sample and Boys are found Significant. High Mean Achievement Scores associated with the experimental group suggests that they are advantageous over the Control group.
3. Significant difference in the Mean Gain score between the Experimental and Control Groups for Total sample is found to be Significant. But scores of boys and girls are not found Significant. It suggests that total sample of Experimental and Control Groups are similar in the case of their Gain score. Superiority of the Experimental group over the Control Group is noted, as revealed form their high Mean Gain Scores.
4. Summary of the result of Two-Way ANOVA showed significant main effect of Instructional Learning Strategies on Achievement in Chemistry (Total). The

results suggest that variation in Achievement in Chemistry in dependent on the variation in the Instructional Learning Strategies.

5. Investigation of Group difference in Mean Achievement in Chemistry between Brain Compatible Learning (BCL) Strategy and Activity oriented Method of Teaching (AOMT) revealed that Brain Compatible Learning (BCL) Strategy has advantage in Achievement in Chemistry over Activity oriented Method of Teaching.
6. One-Way ANCOVA is employed to study the effectiveness of Brain Compatible Learning Strategy over Activity oriented Method of Teaching a topic in Chemistry of standard IX students using Pre-test and Intelligence (Verbal) as covariates separately and in Combination. From the result it can be concluded that the effectiveness Brain Compatible Learning Strategy over Activity oriented Method of Teaching significant while using Pretest and Intelligence (Verbal) as covariates separately and in Combination.

MAJOR FINDINGS OF THE STUDY

Results of the Covariance Analysis and the Scheffe' Test thereafter employed approved the fact that, even after removing the effects of the Covariates singly and in combination of the three at a time from the Dependent Variable the Experimental and Control groups revealed significant difference in the mean Achievement scores. In all the comparisons, Experimental group in which Brain Compatible Learning Strategy applied, seen to excel the Control group, where Activity Oriented Method of Teaching was used. Higher mean Achievement scores were associated with the Experimental group. That means, pupils taught through Brain Compatible Learning are at an advantage over pupils taught through Activity Oriented Method of Teaching.

Educational Implications Derived

Regarding the findings of this study, the Brain-Compatible learning approach appears to be more effective than Activity Oriented Method teaching procedures in Chemistry class in terms of improving students' academic achievement. This finding, which suggests that the Brain-Compatible learning approach is more effective than Activity Oriented Method teaching procedures, shows similarities with the studies of Salmiza,2012; Cengelci (2005) and Wortock (2002). Cengelci (2005) for instance, found out that the Brain-Compatible learning approach improved student achievement in social subjects.



The result also shows that the irrespective of sex, Brain Compatible Learning Strategy has significant advantage over the Activity oriented Method of Teaching in Chemistry of Standard IX pupils. On the basis of finding, it can be said that Brain Compatible Learning Strategy may equally applicable in mixed sex schools and single sex schools. It is also implied that students of different ability level can be brought to optimum level, if Brain Compatible Learning Strategy is utilized in an effective way.

Students in the Brain Compatible Learning group showed better performance in learning and thinking and also showed better performance in evaluative level of learning than that of students in traditional learning situation. Students in Brain Compatible Learning group have significant superiority in Learning than existing learning method. It creates meaningful interaction among teachers and students in the classroom environment.

In a Brain Compatible Learning classroom, each individual was allowed to construct learning based on his or her past/current knowledge. That was why both the high and low achievers in the experimental group were able to progress at their own space and at the same time contribute to their peers learning.

The teachers of science subject in secondary schools can take advantage of implementing the brain-based learning approach in their teaching procedures on account of enriching their students' academic success and retention of the previously learned subjects. The materials, which were developed within the framework of the present study for the purposes of in-class practice procedures of the brain-based learning approach, can be adapted or modified by the teachers of science courses in secondary schools.

An in-service training program on the implementation of the brain-based learning approach in the science courses in primary schools can be offered to teachers. In collaboration with the teachers, some additional materials which are based on the brain based learning principles can be modified for the science courses in the 9th and 10th grades of primary schools. The syllabus of science teaching courses in primary school teacher training programs of educational faculties can be reshaped based on the principles of the brain-based learning approach.

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ECONOMIC SHOCKS ON PARTNERS' TRADE; AFRICA AND ASEAN ON CHINA

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ABSTRACT

This research studies the impact of macroeconomic shocks from African and the Association of Southeast Asian Nations (ASEAN) on China's bilateral trade with them. Data on (GDP) per capita, FDI, inflation, unemployment rates, and trade openness (TO) of China's African and ASEAN partners were sourced from the World Bank whilst imports and exports data were from the world integrated trade solutions (WITS). It uses the gravity model as a basis and the panel corrected standard errors (PCSE) as well as multivariate regression estimators.

The findings reveal that per capita of China's partners have a strong positive impact on trade with them. Trade openness is reported to increase China's imports but reduce exports to these partners. Further, an increase in FDI inflows to China's trade partners leads to an increase in both imports and exports of China.

KEYWORDS: *Economic shocks, international trade, China, Africa, ASEAN, gravity model*

JEL classifications: F4; F69; C13; C23

1.INTRODUCTION

With the current number of research on international trade and economic growth, the discussion seems sealed on the fact the trade with other countries causes a spike in a country's economic growth and welfare. Opening up an economy to trade allows it to access the wider international market and at the same time, permit international traders to also have access to the local market. This certainly presents opportunities and risks. A country's international trade policies and strategies could affect every aspect of the economy. This is easily possible due to the interconnectivity of sectors of the economy.

Empirical results mostly point that, in the long run, more outward-oriented economies see better

economic growth. Studies including (Frankel & Romer, 1999; Sachs & Warner, 1995; Chang et al., 2009) conclude that trade openness is a better influencer of growth. The findings of (Huchet-bourdon et al., 2018) bring into the equation, a new thing; product quality. In their study, they found statistical backings to support the assertion that trade may impact growth negatively for countries that have specialized in low-quality products. Further, studies by (Vamvakidis, 2002) and others found no evidence to support this claim whilst (Moyo & Khobai, 2018; Vlastou, 2010) conclude that economic growth has no bearing with trade openness. Trade openness exposes an economy to the sweetness and bitter of the international environment.

Economies, industries, and firms have developed strong ties with partners within or out of



their continent. In the last decade, macroeconomic shocks at the international level have been quantitatively very relevant due to globalization. The well-being of economies is much interlinked than before. As asserted by (Easterly & Kraay, 1999), the most integrated economies of the world are most likely to experience shocks from partners.

Today's globalization of economies is largely attributed to the rapid evolution of science and technology which has been felt in all aspects of every economy. Economic globalization has impacted trade from several angles. Companies and industries are also exposed to a wide range of alternative competitive input sources and access to labor at competitive rates.

The regions of Africa and Asia have taken solid ground in international trade and seen rapid economic growth in the past decades. According to (OECD, 2015), the US economy grew by 1.6%, the EU by 1.7%, Latin America by 4.6%, and Asia by 5.9% resulting in a substantial increase in the regional share of Asia on the world GDP. With a growth rate of 3.2 percent in 2018, Africa's growth rate was projected to rise to 3.4 in 2019 and to 3.7 in 2020 (UN, 2019). Both regions continue to show prospects for outstanding economic performances.

As pointed by researchers including (Savrul & Onsekiz, 2015), globalization has a significant impact on international trade. Despite the many benefit of globalization, it has also been observed to have negative impacts including job security (the case of NAFTA), labor remunerations, inflation, migration, terrorism, and others. The wave of globalization is present in every aspect of an economy including education (Tight, 2019; Webb et al., 2006), finance (Huang, 2020; Tarim, 2010), health (Briggs et al.,

2020; Dunford & Qi, 2020) and other aspects of the world economy.

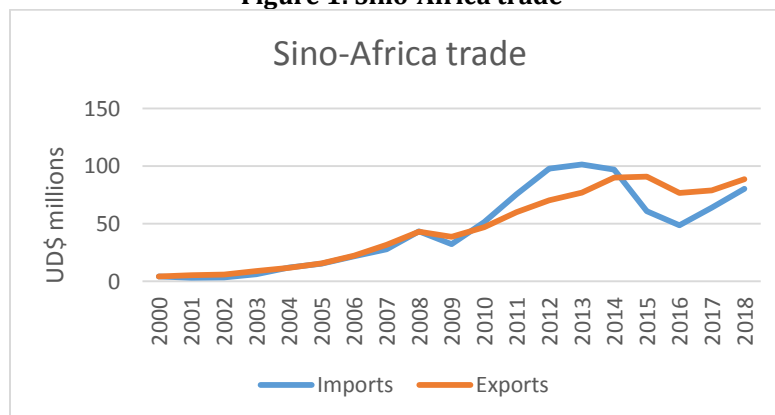
Sectors of an economy are also linked and dependent on each other. A change in a major sector of an economy has the potential to affect all other aspects of the economy. This is referred to as an economic shock. Financial shocks such as changes in monetary or fiscal policies affect industries and individual homes in the long run. Mostly in Africa, changes in energy prices are felt across all sectors as well as individual homes. An economic shock could arise from within a country or from its allied economies.

Today, the economic progress or otherwise of a country has a bearing on its global partners. Developing economies have often been at the receiving end of these shocks stemming from the recent opening of these economies to international trade. The ability of an economy to stand these external unpredictable "economic events" depends on strong macroeconomic foundations and management.

China-Africa Trade

Africa's trade with China has seen a boost in recent years reaching \$42.94 billion in 2017 (Chen et al., 2020). (Nowak, 2016) reveal that Sino-African trade between 2000 and 2014 increase by about 21 times. China launched the Grand Plan of Trade and Economic Cooperation in 1994 as well as the Export-Import (EXIM) Bank of China to provide concessional loans to support the development of China's foreign trade (Nowak, 2015). Between 2000 and 2018, Chinese loans to Africa was valued at \$148 billion (Brautigam et al., 2020). However, finding on the destination countries of Sino-Africa loans by (Locke & Aguiar, 2018) reveals that the greater part of these loans goes to the advanced African economies.

Figure 1: Sino-Africa trade



Note: The figure consists of trade data between China and the African countries in this paper only.



With an export volume of about \$105 billion as of 2018, China's trade ties with the continent continue to strengthen. Africa's export to China has also seen an increase in the same direction. This can partly be attributed to the presence of the economic ties between the two parties and also that African countries are improving upon the nature of their exports, i.e. from raw materials to semi and finished products.

China-ASEAN trade

The Association of Southeast Asian Nations (ASEAN) which succeeded the Association of Southeast Asia (ASA) was formed

by Indonesia, the Philippines, Malaysia, Singapore, and Thailand in 1967 (ASEAN, 2016). Brunei joined the group in 1984, Vietnam in 1995 whilst other countries such as Laos, Myanmar, and Cambodia later joined. The world's largest Free Trade Agreement (FTA) by population; the ASEAN-China FTA remains an important commitment to both signatories. It came into effect in January 2010 with zero tariffs for 93% of traded products (Flick & Kemburi, 2012). During the first quarter of 2020, the region took over the EU to become China's biggest trading partner attracting 15% of China's total trade (Medina, 2020).

Figure 2: Sino-ASEAN trade



Note: The figure consists of trade data between China and the ASEAN countries in this paper only.

The economic relations between Africa and China have been measured from several economic and political viewpoints (Adekunle & Monika, 2017; Balamoune-Lutz, 2011; Large, 2008; Obuah & Alabama, 2012) whilst that of China-ASEAN has equally gotten some attention. Most of these studies are channeled at the wins and losses and measures to boost trade. This paper takes a complete turn from these. Considering the current rise of African and ASEAN economies as well as their trade with China, this paper seeks to measure how fluctuations in their macroeconomics disturb or otherwise China's trade with them.

2.LITERATURE REVIEW

Several studies have explained how some key macroeconomic indicators affect a country's international trade patterns. Issues regarding inflation and exchange rates, as well as unemployment and some indicators have been empirically pointed to have different impacts on a country's international trade. How open an economy is in terms of trade has also

been revealed to make it vulnerable to international macroeconomics.

It is asserted that trade openness leads to greater economic efficiency. However, factors such as technological advancement, government policies, and factors peculiar to individual economies could result in different outcomes for various economies.

Trade openness has been found to expose an economy to risk from the international economy as well as shocks from trade and economic partners. In a review of the correlation between trade openness and economic growth between 1990 and 2016, (Moyo & Khobai, 2018) tested data of members of the Southern African Development Cooperation (SADC). In their analysis employing the ARDL-bounds test approach and the Pooled Mean Group (PMG) model, they discovered that trade openness harms the economic growth of these countries in the long-run.

In a related one on the 10 Central-Eastern European Economies (CEECs-10), (Silajdzic & Mehic, 2018) found robust evidence that trade intensity measures are positively associated with economic



growth. Their study applied the panel corrected standard errors (PCSE) on data on GDP per capita, applied tariff rate, trade openness, government expenditure, and domestic investment. Again, using the Cobb-Douglas production function and the alternative panel estimators on 38 countries between 1980 and 2008, (Yeboah et al., 2012) revealed a positive relationship to exist between gross domestic product (GDP).

An interesting revelation was made in (Nduka et al., 2013) similar to that of (Olufemi, 2004) where the results showed a mixed outcome of the openness-growth phenomenon. In studying the Nigerian economy, Olufemi's conclusions suggested that the country's benefit or otherwise from openness is reliant on the prevailing level of economic development. In Nduka et al., it was found that economic growth leads to opening the economy to international trade, which again leads to more economic growth. However, in studying 2 top West African countries; Nigeria and Ghana, (Khobai et al., 2018) provide evidence to support that openness impacts differently on various economies. Using data from 1980 and 2016 and the autoregressive distributed lag model, their results indicated that trade openness has a strong positive impact on Ghana's economic but an insignificant negative impact on Nigeria.

Studies on trade openness have drawn attention to the possibility of an economy being impacted by its partners. In examining the impact of trade liberalization on growth, (Ben-David, 1993) found a strong link between the timing of trade reform (trade liberalization) and income convergence amongst the six European Economic Community (EEC) members employed in his study. Further, in a research into the relationship between growth and poverty, (Dollar & Kraay, 2004) came with evidence to support the argument that openness of an economy reduces poverty rates.

Specifically, on ECOWAS economies, more insight was seen in (Bello & Akinbobola, 2020). Their study analyzed data on poverty (proxy by consumption expenditure per capita), trade openness, GDP, government expenditure, financial deepening (proxy by the ratio of domestic private credit as a percentage of GDP) as well as the inflation rate of 9 economies from 1986 and 2015. Haven employed the Panel Error Correction Model (PECM), it was indicated that a bi-directional causality exists between trade openness and poverty and a further uni-directional causality between economic growth and poverty.

As economies open up and intensify their integration into the global economy, they become interdependent. The developed economies depend on

the developing partners (who mostly have essential industry raw materials) to keep their industries operational. By this interdependence, countries expose themselves to potential shock that may arise from their partners. The magnitude of the shock however would depend on the degree of interdependence amongst them.

(Montalbano et al., 2005) found a linkage between trade openness and economic growth of Eastern European Countries (EECs). They established that trade shocks caused adverse impacts on these economies in the early 1990s. Inspired by (Ligon, 2003), their approach defines the vulnerability of an economy as the difference between the expected per capita consumption growth under the hypothesis of no shocks and the expected value of the same variable under the hypothesis of shocks. Substantive evidence of the openness-GDP and openness-volatility relationship was revealed in (Yin et al., 2018). In a counterfactual analysis on Macau, they found that the Closer Economic Partnership Arrangement (CEPA) between Mainland and Macau increased the annual real GDP growth rate of Macau by 20.76% from 2004 to 2007, meanwhile it increased the volatility of real GDP growth rate by 35%. This implies that openness is indeed a good way to attain economic growth just that it requires strong economic management so that its negative impacts (shocks) do no turn around to harm the economy just as the views of (Federici & Montalbano, 2010). Other studies such as (Guillaumont, 2000; Montalbano, 2016) provide substantive theoretical and empirical discussions on trade openness and vulnerability.

Answers as to how a country could remain open to the "international-country" but mitigate the risk of volatility and economic shocks are specified in (Haddad et al., 2013) who argue that positive thresholds for product diversification at which the effect of openness on volatility shows different results. They point that the effect shows positive only for countries with highly concentrated export baskets, thus having diversified exports helps reduce the possible impacts of vulnerability and shocks.

African economies have not been spared in international economic shocks. In measuring the experience of sub-Saharan economies with external shocks between 1979 and 1978, the approach of (Balassa, 1983) classified the study countries into lower and middle-income countries. Key amongst the findings was that losses in export shares and the extent of import substitution were lesser in the oil-importing middle-income countries. This supports the discussion that the impact of an economic shock could differ depending on the "trade strength" of the economy.



In studying the main channels through which international economic crises pass to Sub-Saharan Africa, (Allen & Giovannetti, 2011) point out that amongst others, trade is the major conveyer of such shocks. They assert that many of these countries are fragile and have suffered from increased exchange-rate volatility, which has caused high uncertainty and high costs for international trade, however, the magnitude of the shock depends on the degree of the concentration of exports.

The correlation between trade partners and an economy's growth is such a tough discussion with a little theoretical and empirical backings. Because trade partners tend emitting shocks to an economy, there is the need for studies into whether they should be of concern or not. Using data on international trade, (Bastos, 2020) assessed the impact of exposure of Belt and Road economies to trade shocks from China and found that China's trade progress (accession to the WTO) heavily impacted the export performance of Belt and Road economies. Bastos found that the rise in imports of China between 2000 and 2015 lead to a parallel rise in exports of those economies but this effect was mitigated by increased competition from China in export markets. Additionally, it was found that the effects of competition shocks were also relatively stronger in countries that are relatively poorer and geographically closer to China. In a related study analyzing imports and exports separately between China and 18 of its advanced economy partners, (Ahn & Duval, 2017) indicated large productivity gains from trading with China and a negative employment effect of Chinese imports in exposed country-industries between the mid-1990s and late-2000s.

Using the above as a basis, this paper hypothesizes and intends to empirically determine whether macroeconomic fluctuations in Africa and ASEAN have an influence on the China's trade with them. There is currently no research close in scope to this paper. Thus, neither economic shocks of China on Africa and ASEAN or vice-versa has been studied. This work intends to provide empirical findings which other researchers could build on.

3. DATA AND METHODOLOGY

3.1 Data and sources

This paper aims at determining whether or not the macroeconomic fluctuations in African and ASEAN countries have an impact on China's trade with them. Data is sourced on Gross Domestic Product (GDP) per capita, Foreign Direct Investment (FDI), inflation and unemployment rates, trade openness (TO) of 30 African and 9 ASEAN partners of China, as well as the geographical distance between China and these

countries. The dependent variables are the bilateral trade; imports and exports between China and these partners. Since bilateral trade data between China and its partner countries are mostly not available from the 1990s, this research selects data from 2000 to 2018. Data on all variables except bilateral trade and distance was obtained from the world development indicators (WDI) of the World Bank. Bilateral trade data was extracted from the world integrated trade solutions (WITS) whilst data on geographical distance (in kilometers) was obtained from the Centre d'Études Prospectives et d'Informations Internationales (CEPII).

3.1.1 Variable description

This research uses the bilateral trade values of China and its trade partners as the dependent variables whilst the independent variables are data from the trade partners. The distance variable represents the distance from China's capital to those of its partners. The intent is to check the direction of the impact of a change in the independent variables on China's trade.

There is certainly a relationship between the consumption trends and changes in individual income as proposed by the Engels curve. Generally, countries with higher economic growth and GDP per capita tend to export more sophisticated goods. Their imports also tend to go with high specifications and standards. Given this, their imports from developing economies mostly tend to be raw materials or semi-finished products. As put by (UNCTAD, 2019), the EXPY (export sophistication) index and GDP per capita are positively correlated.

FDI (inwards) has received a great deal of attention in the past decade as many a study has been conducted to unearth its impacts on the various aspects of an economy. As seen in (Chuang & Hsu, 2004), there is a strong relationship between international trade and inward FDI. International trade enables countries to access new technologies and information to boost their local industries. These new technologies and other benefits of international trade are used to improve local productivity that intends to make the country's products more competitive internationally. The same opinion is shared by (Aizenman & Noy, 2005; Dash & Sharma, 2011; Kurtishi-Kastrati, 2013). A link is also established between inflation and trade openness in (Lane, 1997) where they further advocate for trade openness to be taken seriously in deliberations on inflation. It is noted that inflation causes the prices of goods and services to rise unsteadily. This makes local production costive and reduces export as price-competitive imports flood local markets. The high potential of inflation spillovers (shocks) is discussed in



(Balcilar & Bekun, 2020; Ciccarelli & García, 2015; Jordan, 2016).

International trade could leave various impacts on a country's employment. For developing economies, the influx of imported goods mostly leads to the paralyzing of local industries leading to high unemployment rates. In a "successful export industry", thus an industry that has succeeded in capturing a share in the international market, its employment rate could be dependent on the happenings on the international market. (Fugazza et al., 2014) confirms that the effect of trade on unemployment in an economy depends on the covariance between comparative advantage and sector level labor market frictions.

The conversation of distance and trade has remained strong to date. The improvement in means of transportation and the cargo operations has to a great extent, reduced the impact of distance on trade. (Borchert & Yotov, 2016) found a reduced effect of distance on trade by 9.34% for the 69 study countries studies from 1986 to 2006. Further, in assessing the volatility between trade and distance, their results pointed to negative and statistically significant coefficients (Mehl et al., 2019). Other discussion on this subject are held in (Berthelon & Freund, 2008; Knoll et al., 2018)

This research is underpinned in these economic observations and conclusions whilst its relevance lies in

$$y_{hft} = \alpha_0 + \alpha_h + \gamma_f + \theta_t + \beta'_1 x_{hft} + \beta'_2 x_{ht} + \beta'_3 x_{ft} + \beta'_4 z_{hf} + u_{hft} \quad (2)$$

Of the three dimensions, one is time-specific (θ_t) whilst the others are time-invariant export and import country-specific effects (α_h and γ_f). In their attempt to handle

$$y_{hf} = \alpha_0 + \alpha_{hf} + \theta_t + \beta'_1 x_{hft} + \beta'_2 x_{ht} + \beta'_3 x_{ft} + \beta'_4 z_{hf} + u_{hf} \quad (3)$$

In measuring the trade potential for China's wind energy with the Belt and Road countries, (Leng et al.,

$$\ln EX_{ijt} = \beta_0 + \beta_1 \ln Y_{it} + \beta_2 \ln Y_{jt} + \beta_3 \ln DIST_{ij} + u_{ijt} \quad (4)$$

where \ln is the natural logarithm of the variables, EX_{ijt} is the exports of wind energy products from country i to j in year t . Y_{it} and Y_{jt} denote the GDP of the exporter and importer countries respectively and $DIST_{ij}$ is the geographical distance between them.

3.3 Data estimation challenges.

In estimating international trade-related data, two major problems are observed to be encountered by many a research which has attracted attention. These are endogeneity and zero trades. Endogeneity refers to the case where the dependent variable in a study is

the fact that the majority of research work is focused on how these variables interplay with increased trade volumes of a particular country. That is to say, the focus of this paper is rather how the bilateral trade of a country (China) is affected by the per capita, Foreign Direct Investment (FDI), inflation and unemployment rates, as well as trade openness of its trade partners (Africa and ASEAN).

3.2 Econometric model

This work is based on the gravity model as proposed by (Tinbergen, 1962) and seen in (Bergstrand, 1989; Çekyay et al., 2020; Chaney, 2018) amongst other researches. The equation assumes bilateral trade flows (X) to be dependent on the product of the incomes (E) of the two partner countries i and j , divided by the geographical distance separating them (D). The equation is therefore written as;

$$X_{ij} = \frac{E_i E_j}{D_{ij}} \quad (1)$$

Over the years, gravity has been used in a wide range of study fields and has been given many modifications and alterations. For instance, (Matyas, 1997) proposes a three-way model specification of the gravity model as;

issues of heterogeneity bias associated with international trade estimations, (Cheng & Wall, 2005) provide the following model incorporating fixed effects.

2020) employed a gravity model which took the following form,

surmised to be correlated with some variables of the error term whereas zero trade is the instance where both partners to trade fail to report figures for some period(s).

Various approaches have been suggested to deal with the estimation challenges. Some of these studies include; (Baier & Bergstrand, 2007; Liu et al., 2020; Montalbano et al., 2005; Ojo & Baiyegunhi, 2020). Researchers have suggested several approaches to best handle endogeneity such as; including country-pair fixed effects by (Baier & Bergstrand, 2007) building on (Wooldridge, 2002). Other approaches include the use



of instrumental variables (IVs) as seen in (Bollen & Bauer, 2004; Dippel et al., 2017; Mehta, 2001; Sajons, 2020). Due to the difficulty in coming by such IVs and the controversies surrounding their use, they are not considered for this work.

The problem is zero trade is most common amongst developing countries' data. A common observation is that for some periods, both parties to trade do not report any values. This makes econometric analysis very challenging although several approaches have been suggested and implemented by some studies. Common methods to resolve this include replacing the unavailable trade with small positive values. This is questionable since the inserted value is not the actual trade for the period and could result in erroneous findings. The use of the Heckman selection model; (Jang, 2006; Plümper et al., 2006) and the Poisson (PLM) model; (Krisztin & Fischer, 2015; Linders et al.,

2009) dominate the econometric technique to deal with zero trades.

For this work, the following is decided; based on the controversies surrounding the use of IVs and other ways to deal with endogeneity, econometric estimators that have strong backgrounds and evidence of treating endogeneity are opted for. Also, country pairs and years with Zero trades are omitted, hence, thirty (30) African countries and nine (9) ASEAN countries are used.

Based on the above, this study tunes the gravity model to obtain the following equation; where "ln" is the log form of the variables, "imp and exp" represent the bilateral trade (imports and exports) between China and its partners, $\beta_1 - \beta_6$ represent the independent variables followed by the error term.

$$\ln \text{imp} / \ln \text{exp} = \beta_0 + \beta_1(\ln \text{percap}_{it}) + \beta_2(\ln \text{TO}_{it}) + \beta_3(\ln \text{FDI}_{it}) + \beta_4(\ln \text{inf}_{it}) + \beta_5(\ln \text{uem}_{it}) + \beta_6(\ln \text{dist}_{it}) + \varepsilon_{it} \quad (6)$$

Judging from previous studies and the literature gathered, it is expected of the independent variables to take the following signs;

Table 1: variables and expected signs

Variables	Sign Imports/ exports	Note
percap_{it}	+/-	An increase in per capita is expected to increase China's imports but reduce exports to Africa and ASEAN
FDI_{it}	+/-	An increase in FDI is expected to increase China's imports from China and reduce exports to Africa and ASEAN
inf_{it}	- /+	It is expected to reduce China's imports but increase its exports
unem_{it}	- /+	It is expected to reduce China's imports but increase its exports to Africa and the ASEAN countries
TO_{it}	+ /+	Openness is expected to increase China's imports from and exports to Africa and ASEAN
dist_{it}	- /-	There is an expectation of high trade between China and countries closer to it

4. EMPIRICAL ESTIMATIONS

4.1 Descriptive statistics

Table 2 presents the descriptive statistics of the variables used for this research. It could be deduced that imports and exports grew at annual average rates of 12.1% and 13.4% respectively. The maximum and the minimum for the variables show that there is a wide

differential pattern amongst the countries, thus; the presence of heterogeneity amongst the variables. Further, FDI shows the highest growth rate of 22.9%. The table also shows heavy tails (positive values) according to the Kurtosis and that exports and unemployment are mesokurtic (<3).

**Table 2: Descriptive statistics**

	<i>lnimp</i>	<i>lnexp</i>	<i>lnpercap</i>	<i>lnTO</i>	<i>lnFDI</i>	<i>lninf</i>	<i>lnuem</i>	<i>lnDIST</i>
<i>Mean</i>	12.106	13.393	7.286	4.280	22.926	4.183	1.567	9.010
<i>Median</i>	12.084	13.378	7.104	4.215	22.797	4.168	1.723	9.221
<i>Max.</i>	17.976	18.247	11.076	6.081	25.350	6.353	3.511	9.423
<i>Min.</i>	-6.900	5.646	4.732	3.031	16.357	-4.605	-1.298	7.754
<i>Std. Dev.</i>	3.336	2.244	1.272	0.512	0.473	0.353	0.959	0.504
<i>Skewness</i>	-0.985	-0.140	0.636	0.686	-2.575	-20.336	-0.390	-1.272
<i>Kurtosis</i>	6.077	2.760	3.137	4.133	60.889	523.939	2.722	3.032
<i>Jarque-Bera</i>	412.161	4.196	50.592	97.837	104285.9	8429834	21.166	199.731
<i>Prob.</i>	0.000	0.127	0.000	0.000	0.000	0.000	0.000	0.000
<i>Sum</i>	8970.831	9924.544	5398.955	3171.526	16987.93	3099.301	1161.392	6676.22
<i>Sum Sq. Dev.</i>	8233.422	3724.815	1196.919	193.8365	165.412	92.1073	680.4116	188.3239
<i>Obs</i>	741	741	741	741	741	741	741	741

4

.2 Correlation matrix

A positive correlation of 0.564, 0.380, and 0.452 all significant at 1% is recorded between imports and per capita, FDI, and trade openness respectively. However, negatives of -0.085 and -0.125 are recorded for inflation and distance. This tells that there is a

strong positive relation between China's imports and some economic indicators of its African and ASEAN trade partners. GDP per capita, FDI and trade openness still prove to have strong positive relationships at 1% significance whilst inflation, unemployment and bilateral distance report negative correlations.

Table 3: Correlation matrix

<i>Prob.</i>	<i>lnimp</i>	<i>lnexp</i>	<i>lnpercap</i>	<i>lnTO</i>	<i>lnFDI</i>	<i>lninf</i>	<i>lnuem</i>	<i>lnDIST</i>
<i>lnimp</i>	1.000							
<i>lnexp</i>	0.761***	1.000						
<i>lnpercap</i>	0.564***	0.541***	1.000					
<i>lnTO</i>	0.452***	0.344***	0.571***	1.000				
<i>lnFDI</i>	0.380***	0.491***	0.394***	0.372***	1.000			
<i>lninf</i>	-0.085**	-0.063*	-0.108**	-0.088**	0.016	1.000		
<i>lnuem</i>	0.054	-0.057	0.345***	0.054	-0.073**	0.004	1.000	
<i>lnDIST</i>	-0.125***	-0.258***	0.014	0.021	-0.129***	0.001	0.105**	1.000

Note: ***, **, and * indicate 1%, 5% and 10% significance levels respectively



Table 4: Estimation results

Variable	Imports		Exports	
	PCSE	MVR	PCSE	MVR
lnpercap	1.217*** (8.81)	1.217*** (11.53)	0.946*** (9.20)	0.496*** (14.31)
lnTO	0.955*** (6.14)	0.955*** (4.02)	-0.189 (-1.44)	-0.189 (-1.27)
lnFDI	0.867** (2.80)	0.867*** (3.69)	1.206*** (4.68)	1.206*** (8.20)
lninf	-0.215 (-0.46)	-0.215 (-0.78)	-0.074 (-0.28)	-0.074 (-0.43)
lnuem	-0.327** (-2.90)	-0.327** (-2.91)	-0.466*** (-6.91)	-0.466*** (-6.63)
Indist	-0.717*** (-10.59)	-0.717*** (-3.69)	-0.939*** (-26.63)	-0.939*** (-7.72)
Intercept	-12.842** (-1.93)	-12.842** (-2.28)	-10.833* (-1.90)	-10.833** (-3.07)
Obs	741		741	
R ²	0.385	0.385	0.467	0.467
F-Stats	-	76.647***	-	107.140***
Wald chi test	408.20***	-	2551.43***	-

Note: ***, **, and * indicate 1%, 5% and 10% significance levels respectively

The main regression estimator; PCSE, and the robust check result produced results of great similarity. The results indicate a strong positive relationship between per capita and imports as well as exports which is a mix of the research expectations. The results show that a percentage increase in per capita could lead to a 1.217% change in imports. This result is further confirmed by the robust estimator. This could be expatiated as; an increase in per capita represents an improvement in the general economy including industrial output. This could therefore cause an increase in China's imports from these developing economies. Further, the results indicate that exports are expected to increase by 0.946 upon a percentage increase in per capita. On the contrary, the study expected that an increase in per capita of China's trade partners will cause them to shift demand to products from Europe and America that are expensive than those of China, hence, a negative sign was anticipated.

Trade openness is also shown to positively impact imports just as expected. A percentage increase in the openness of Chinese partners is expected to increase its imports from them by 0.955%. However, the results tell that an increase in the level of trade openness could impact China's exports from these countries by -0.189. The point is that the openness variable here is not that of the study country (China) but rather, its trade partners. An explanation therefore

could be given that developing countries will tend to import less from China as they open up to trade.

This study also points out that the FDI of trade partners could positively impact on imports of a country. It is seen that an increase in FDI of China's partners leads to a 0.867% and 1.206% increase in imports and exports respectively. A justification could be made as; an increased FDI translates into growth and quality of industrial output (Sen, 2008; UNCTAD, 2015). This could therefore increase China's imports from these economies. Again, as observed in (Hakizimana, 2015), FDI inflows positively impact GDP per capita which intends increases the consumption of citizens. This could justify the reason for China's increased exports to these upon an increase in their FDI. The inflation rates of China's partners are reported to have negative impacts on China's trade. The estimations point that a percentage increase in inflation reduces (-0.215) imports whilst that of exports is by -0.74 although these impacts do not carry any significance levels.

Also, an increase in the unemployment rate of China's trade partners impacts China's imports by -0.317% as well as exports by -0.466%. Practically, high unemployment rates of these economies could be caused by "low-grade" industrialization that will render its exports unattractive, hence reduced imports by China. The possibility of an increase in



unemployment of developing economies leading to reduced imports (in this case, exports from China) could be grounded in other macroeconomic indicators such as inflation and exchange rates in those countries. For instance, an increase in unemployment coupled with high exchange rates could result in a reduction in imports by an economy.

The coefficients of the geographical distance variable show negative with strong statistical significance for both imports and exports. This follows suit of the gravity expectation that countries will trade much with closer partners. In this scenario, it could be interpreted as; the wider the distance, the lesser China trades with a partner. Considering the two groups of countries in this study, thus; Africa and ASEAN countries, the results support recent arguments on why the ASEAN region is now China's top trade partner (Feiteng, 2020).

5.CONCLUSION

There have been countless studies on how macroeconomic indicators impact a country's trade but there are a few on how these indicators tend to impact trade partners, thus external economic shocks. Based on the concept of economic shocks, this study assessed specifically, the impact of macroeconomic fluctuations of African and ASEAN countries on China's bilateral trade (imports and exports) with them.

Data was obtained on the bilateral trade of China as well as GDP per capita, trade openness, FDI, inflation, and exchange rates of 30 African and 9 ASEAN countries from 2000 to 2018. The gravity model was employed for the estimations and the panel corrected standard errors (PCSE) was the main estimator whilst multivariate regressor in Stata 14 (mvreg command) acted as a robust check.

Results from the estimations indicated that an increase in the per capita of China's trade partners leads to both an increase in China's imports from as well as its exports to them. This confirms other studies including (Obeng, 2018) and is an indication of how acceptable Chinese products have become especially in developing economies. Trade openness is reported to increase China's imports from its partners but reduce exports to them. Again, an increase in FDI inflows into China's trade partners benefits both channels of trade, thus, it leads to an increase in both imports and exports. The inflation and unemployment rate of partner countries are both expected to reduce China's trade with its trade partners.

This study's approach to measuring economic shocks is yet to be further explored by other researchers. It lays the basis for studies into how trade

partners' economic situations affect each other and how the gravity model comes into play.

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APPENDIX
List of countries in this research

Africa		ASEAN
Algeria	Kenya	Brunei
Angola	Madagascar	Cambodia
Benin	Malawi	Indonesia
Botswana	Mali	Lao People's Dem. Republic
Burkina Faso	Mauritania	Malaysia
Burundi	Mauritius	Philippines
Cote d'Ivoire	Morocco	Singapore
Cameroon	Niger	Thailand
Chad	Nigeria	Vietnam
Congo	Senegal	
Dem. Rep. Congo	South Africa	
Egypt	Togo	
Gabon	Tunisia	
Gambia	Uganda	
Ghana	Tanzania	



PROBLEMS OF PEDAGOGICAL CORRECTION AND INCLUSIVE SERVICE IN THE EDUCATIONAL PROCESS

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ABSTRACT

*Everyone is guaranteed equal rights to education, regardless of gender, race, nationality, language, religion, social origin, beliefs, personal and social status ...
Article 5 of the Law of the Republic of Uzbekistan "On Education"*

In this article the work done in Uzbekistan in recent years on the education of children with disabilities, the adopted legislation, the content of correctional pedagogical activities, its main categories are listed. Also, examples are given about methods used for the rapid and flawless development of the child mentally, problems of inclusive service in education are described.

KEYWORDS: *children with disabilities, correctional pedagogy, compensation, social rehabilitation, social adaptation, family upbringing, inclusive education.*

INTRODUCTION

Citizens of any society and every parent are interested in their children's development into perfect, full-fledged people, worthy citizens, to contribute to the development and prosperity of the state.

According to UN World Health Organization statistics, 15 percent of the world's population suffers from various levels of anomalies. In Uzbekistan, according to the State Statistics Committee, in the case of January 1, 2019, 101,316 children with disabilities under the age of 16 have been registered. Of these, 21,153 are educated in specialized schools and boarding schools for children with physical and mental disabilities, 6,131 in sanatorium-type boarding schools for children with tuberculosis and bone diseases, and 13,272 at home. The steady growth of this indicator encourages everyone to work effectively to create opportunities to feel equal to others and to realize their potential.

Extensive work is being done in the Republic of Uzbekistan to support motherhood and childhood, to create conditions for the spiritual and physical development of children, as well as to

ensure compliance with the requirements of the United Nations Convention on the Rights of the Child. In particular, the Resolution of the President of the Republic of Uzbekistan dated April 22, 2019 No. PQ-4296 "On additional measures to further strengthen the guarantees of the rights of the child", May 29, 2020 No. PQ-4736 "On additional measures to improve the system of protection of children's rights" are among them. In accordance with this resolution, the position of Deputy Representative of the Oliy Majlis of the Republic of Uzbekistan on Human Rights (Ombudsman) - Representative on the Rights of the Child was introduced. One of the main tasks and activities of the Ombudsman for Children is to promote the social adaptation of children with disabilities, as well as orphans and children deprived of parental care after graduation [1].

Also, Article 4 of the Law of the Republic of Uzbekistan "On Education", adopted on September 23, 2020, sets out the basic principles in the field of education, one of which is the non-discrimination in education. Thus, the issue of educating pupils in need of pedagogical correction is one of the main problems in the education system today [2].



The subject of correctional pedagogy is engaged in the correctional education and upbringing of pupils with various developmental disabilities. Corrective pedagogy (defectology – in Greek defectus - defect, deficiency, logos - science, education) - is a science that studies the essence and laws of managing the process of individuality and personality development of a child with disabilities, based on special, individual methods of upbringing and education, with physical or mental disabilities.

The pedagogical dictionary emphasizes that the concept of "correction" (Greek "corectio" - correction) is understood as the correction (partial or complete) of mental and physical developmental defects of anomalous children using a special system of pedagogical methods and measures [3].

The dictionary states that "correctional pedagogy" is a science that studies the essence and laws of managing the process of individuality and personal development of a child with physical or mental disabilities, in need of special, individual methods of education and training.

The world-famous online encyclopedia Wikipedia.org describes this notion as follows: "Special education is a practice that allows people with special needs to differentiate and direct their needs through special methods." This event is based on the practice of helping people with special needs through special education to achieve high results in society (in 1784, the first special school was established in Paris. The school was part of the international DisJeunes Aveugles Institute. This school was the first school for the blind in the world. The first school for the deaf was built in the United Kingdom. In the nineteenth century, people with disabilities were secretly educated at home, and information about this can be found in the works of Charles Dickens).

Persons with special needs may include: people with communication disorders (blind, deaf, dumb), mental disorders, physical disabilities (brittle bone disease, cerebral palsy, muscular dystrophy, etc.) and people with developmental disabilities[4].

Correctional pedagogy has the following pedagogical categories:

1. The education and development of anomalous children is a purposeful process aimed at preparing them for social life and work, the formation of knowledge, skills and competencies in them. The choice of education system and methods for anomalous children takes into account the age of the child and the time of onset of the defect.

2. Upbringing of anomalous children is a basic concept of correctional pedagogy, the purpose and task of which is to prepare anomalous children for active social life and work, the formation of civic qualities in them using methods and tools appropriate to the degree and structure of the defect. The upbringing of anomalous children is carried out

on the basis of close communication between the family and the educational institution, mutual support, mutual assistance, demanding and reasonable kindness.

3. Correction refers to the correction, elimination and reduction of defects in the mental and physical development of the child.

4. Correctional-educational work as a category consists of a system of measures of general pedagogical influence according to the features of anomalous development of the person. All types and forms of classroom and extracurricular activities are used in correctional and educational issues. Corrective and educational work is carried out in the process of educating anomalous children and creates great opportunities for the effective organization of labor education. In the process of on-the-job training, not only professional skills, but also the skills of planning their work, the ability to follow verbal instructions, critically evaluate the quality of work and other skills are developed.

5. Compensation (in Greek "compensatio" - replacement, equalization) is the replacement or reconstruction of damaged or underdeveloped functions of the organism. The compensatory process relies on the reserve capacity of higher nerve activity.

6. Social rehabilitation (in Greek "rehabilitas" - restoration of ability, competency) means in the medical and pedagogical context to create conditions for the participation of the anomalous child in the social environment at the level of psychophysiological capabilities, to involve him in social life and work. This is a key task in the theory and practice of correctional pedagogy.

Rehabilitation is carried out with the help of special medical means aimed at eliminating and mitigating defects, as well as special education, training and vocational training. In the process of rehabilitation, the functions damaged as a result of the disease are replaced. Rehabilitation tasks are solved in a system of special educational institutions for different categories of anomalous children, in which the characteristics of the organization of the educational process are determined by the characteristics of anomalous development of children.

7. Social adaptation (in Greek "adapto" - adaptation) - to ensure that the individual and group behavior of anomalous children is consistent with the system of social rules and values. It is difficult for anomalous children to establish social relationships, their ability to respond appropriately to changes is low, so they are not able to meet complex requirements. Social adaptation allows children to actively participate in socially useful work.

8. Family education is a factor in the effective organization of rehabilitation. The joint



efforts of the family and the school ensure the involvement of the abnormal child in social activities, the identification of his or her ability to work, and the formation of professional skills at the level of opportunity.

Currently, there are special educational institutions for anomalous children (boarding schools for blind and deaf children, auxiliary boarding schools for the mentally retarded) in the country.

Article 55 of the Law of the Republic of Uzbekistan "On Education" (September 23, 2020) states that the education and upbringing of children (individuals) with physical, mental, sensory or spiritual disabilities are established in special (specialized) educational institutions. In particular, Article 55, entitled "Education and upbringing of children (individuals) with physical, mental, sensory or spiritual disabilities", has the following content:

The state ensures that children (individuals) with physical, mental, sensory or spiritual disabilities receive free general secondary, secondary special, vocational and extracurricular education in an inclusive form in state specialized educational institutions, general secondary, secondary special, vocational education institutions. State specialized educational institutions shall be established for the education and upbringing of children with physical, mental, sensory or spiritual disabilities, as well as those in need of long-term treatment. Admission and expulsion of pupils from these educational institutions is carried out with the consent of parents or other legal representatives on the basis of the conclusion of the medical-psychological-pedagogical commission. Pupils in public specialized educational institutions are supplied by the state.

Article 56. Education and upbringing of children (individuals) in need of social rehabilitation

Specialized educational institutions will be established for children (individuals) in need of education and upbringing in special conditions, ensuring their education, vocational training and social rehabilitation. Conditions shall be created for the education, upbringing and independent education of children (persons) detained in penitentiary institutions in the form of deprivation of liberty [5].

Inclusive education is about ensuring equal access to education for all students, taking into account the special educational needs and differences in individual capabilities. On October 13, 2020, the President of the Republic of Uzbekistan adopted Resolution No. PP-4860 "On measures to further improve the system of education for children with special educational needs." The Concept for the Development of Inclusive Education in the Public Education System for 2020-2025 was also approved. According to it, in the 2021/2022 academic year, as an experiment: introduction of an inclusive education

system in one secondary school located in cities and districts of Tashkent; It is planned to open primary correctional classes for children with special educational needs in one secondary school in the Republic of Karakalpakstan, regions and the city of Tashkent [6]. This law is a novelty in the field of education of children with disabilities in our country, as well as will help to find a positive solution to a number of problems facing the education system.

CONCLUSION

In particular, we believe that paying special attention to the following issues will further increase the effectiveness of inclusive education:

- the regulatory framework in the field of inclusive education needs to be improved;
- the problems of training, retraining and advanced training of qualified pedagogical staff for the system of inclusive education should be successfully addressed;
- it is necessary to train reserve teachers (tutors) and other specialists to provide psychological and pedagogical support to pupils with disabilities;
- strengthening the material and technical base of institutions where inclusive education is introduced, they should be provided with special devices (lifting device, ramp, handle, etc.), the necessary literature, methodological manuals, equipment and facilities for training in various professions;
- measures should be taken to prevent discrimination against children with special educational needs in the education system.

THE LIST OF USED LITERATURE

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2. <https://lex.uz/docs/5013007>
3. N.V. Novotortseva *Correctional pedagogy and special psychology. Dictionary.-M.: Pedagogy, 1999.120 p*
4. https://en.wikipedia.org/wiki/Special_education
5. <https://lex.uz/docs/5013007>
6. <https://lex.uz/ru/docs/5044711>



THE PERCEPTION OF ACCOUNTING EDUCATORS AND PRACTITIONERS TOWARDS THE PRACTICES OF CREATIVE ACCOUNTING

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ABSTRACT

The study examined perception of Accounting Educators and Practitioners towards the practices of creative accounting. The study adopted descriptive research of a survey type. The population of the study comprises 187 Accounting Educators (academic staff) and practitioners at Afe Babalola University, Ado Ekiti and Federal Polytechnic, Ado Ekiti. The sample of the study was 60 respondents selected using a purposive random sampling technique. Questionnaire was the instrument used for data collection. Face validity of the instrument was ensured by the experts in the Department of Accounting. The reliability of the instrument was determined through a pilot-test conducted on the instrument. The reliability coefficient of 0.85 was obtained using the Cronbach alpha coefficient. The research questions were answered using mean scores and standard deviation and ANOVA test was used to test the hypotheses formulated at 0.05 level of significance. The study revealed that practices of creative accounting affect all the characteristics of accounting information as well as users' investment decisions and the integrity of the practitioners. In conclusion, accounting educators and practitioners indicated that creative accounting negatively affect the accounting information and the profession. Therefore, the study recommended that accounting bodies should take strict measures to curb creative accounting practices among accounting practitioners, to restore integrity and users' confidence in accounting information. Also, a monitoring group should be in place to check the draft of accounting information prepared by any organization this would be required to prepare a financial statement before being finally published for public consumption.

KEYWORDS: Accounting Operation, Accounting, Auditing, Investment Decision, Financial Reporting



INTRODUCTION

The practice of creative accounting among accountants has called for a debate in recent times due to the failure of many business organizations, banking industry, and corporate organizations. The practice made many investors, shareholders, creditors, lenders, public, and others to doubt the reliability of accounting information which is primarily produced by accounting practitioners to show true and fair state of financial reports of an entity which would enable the users make appropriate decisions. Furthermore, the creative accounting practices have caused a lot of criticism to the accounting profession all over the world because it allows different policies and professional judgments in determining the methods of measurement. For instance, the consequence of creative accounting method led to the collapse/breakdown of many companies such as Arthur Anderson, Enron, WorldCom, Parmalat, Tyco, Cadbury Nigeria Plc, Unilever, African Petroleum and Afribank in Nigeria etc. It has not only cost billions of dollars/naira loss to the stakeholders but has also damaged the accounting profession as a result of misrepresentation caused by cooked, padded or window dressed accounting information.

However, it is sad that accounting information is no longer useful despite the laudable roles of auditing. This is due to the practice of creative accounting which has led many investors and other users of accounting information to lose their investments and jobs as well as doubt the truth and fairness of the accounting information prepared by accounting practitioners. Hence, creative accounting seems to be an intentional manipulation of the accounting information in order to influence certain competitors on the capital market for self-interests. Victoria, (2014) opined that the only way accountants are using to support the manager as well as to promote and support the company's image is through creative accounting, manager use the manipulated accounting information to support his self-interest. Yadav (2013) believed that creative accounting is the accounting practices that may or may not follow the letter of the rules of accounting standard practices but certainly deviate from those rules and regulations in order to systematically achieve misrepresentation of the true and fair income, liabilities and assets of corporations or organizations.

From these views, creative accounting can be regarded as a process whereby accountant and auditors use their knowledge of accounting rules to manipulate the accounting information of a business organization/entity. Salome, (2012) having studied strategies used by accountants in Nigeria to practice creative accounting, revealed that accountants use

profit eroding mechanisms which lead to drastic consequences like corporate scandals and collapse both international and locally. Akenbor and Ibanichuka (2012) affirmed that creative accounting practices in the real world experience has become a curse because most cases are practiced in an undesirable way to attract investors by presenting sometimes misleading, deceptive and exaggerated state of an organization's financial affairs. Based on the above, it is obvious that the accounting information is no longer reliable irrespective of the firm, management, accountants that prepared it or auditors that certified such accounting information. This has affected accounting profession as a whole. Therefore, this study aims to examine the perception of accounting educators and practitioners toward the practices of creative accounting.

STATEMENT OF THE PROBLEM

There is no doubt that applications of creative accounting methods have affected quality of accounting information. Although creative accounting methods is employed by practitioners and companies to achieve a specific selfish purpose. Due to creative accounting practices and self interest, the following are the examples of failed auditing firms and companies both internationally and locally, Enron (2001), WorldCom (2002) in USA, Saytam Computer Services Limited (2009) in India, and American Insurance Group (2005). Also in the case of Nigeria, Akintola Williams and Deloitte were indicted for facilitating the falsification of accounts of Afribank Plc and Main Stream Bank PLC and for deliberate overstating the profits of Cadbury Nigeria PLC. Oluwagbuyi and Olowolaju (2013), Bankole, et al (2018) reported that between 1990 and 1994, Nigeria lost more than N6 billion (\$42.9million) within the banking sector alone due to creative accounting practices.

The problem of this study is that many users of accounting information no longer value the accounting information since it could not be safely used to make investment decision. In addition, on the side of auditors, creative accounting shows that there is collaboration between auditors, management and manager of an entity which is against professional ethics of auditors. This collaboration is affecting auditor's responsibility to report on the accounts, to identify whether they have been properly prepared, and to provide an opinion on whether they show a true and fair view (Kevin, in Ismael, 2017). If this were not so why do auditors fail to raise eye brow when they knew that creative accounting can decrease the value, reliability, relevance and truthfulness of accounting information? Enron collapsed because Arthur Anderson as an auditor did not take absolute responsibility to



prevent the company from creative accounting (Ihsan, in Ismael, 2018). Lastly, should the practices of creative accounting continue in accounting profession or not? Therefore, this study aims to examine the perception of accounting educators and practitioners towards the practices of creative accounting at Afe Babalola University, Ado Ekiti and Federal Polytechnic, Ado Ekiti.

PURPOSE OF THE STUDY

This study examined the perception of accounting educators and practitioners towards the practices of creative accounting. Specifically, the study;

1. examined the awareness of the term creative accounting among academic staff and accounting practitioners
2. identified the creative accounting techniques used to influence corporate financial statements
3. examine the extent to which creative accounting practices affect the characteristics of accounting information
4. examined the opinion of accounting educators and practitioners toward the practices of creative accounting

RESEARCH QUESTIONS

The following research questions were raised to guide the study

1. Are you aware of the term creative accounting?
2. What are the creative accounting techniques used in accounting profession?
3. To what extent do creative accounting practices affect the characteristics of accounting information?
4. What is the opinion of accounting educators and practitioners toward the practices of creative accounting?

RESEARCH HYPOTHESES

The following research hypotheses were formulated for the study

1. There is no significant difference between accounting educators and practitioners' responses on creative accounting techniques used in accounting profession.
2. There is no significant difference between accounting educators and practitioners' responses on the extent to which creative accounting practices affect the characteristics of accounting information
3. There is no significant difference between accounting educators and practitioners' responses on the opinion of accounting educators and

practitioners toward the practices of creative accounting in accounting profession

LITERATURE REVIEW

Conceptual Framework Creative Accounting

The term creative accounting means different things to different people, it can be referred to as systematic misrepresentation of the true income and assets, as well as cosmetic accounting, window dressing, financial engineering, cooking of account, big bath accounting, massaging the numbers, manipulating of accounting information to attract investors. However, some believe that creative accounting is a tool for obtaining "true and fair view". In the view of Shah, Butt, and Tariq (2011), creative accounting can be regarded as intentional influence applied on financial reports to meet the impression of managers to stakeholders by a view other than the actual financial position of the company/organization based on accounting knowledge and discretion within the jurisdiction of laws set up by accounting regulatory bodies. Creative accounting according to Naser in Gabriëls and Van De Wiele (2005) is the process of manipulating accounting figures by taking advantage of the loopholes in accounting rules, and the choices of measurement and disclosure practices in them to change financial statements from what they are supposed to be, to what accountants would prefer to see reported. They further opined that it is a process by which transactions are structured in order to produce the desired accounting results rather than reporting transactions in a neutral and consistent way.

Furthermore, Tassadaq and Malik (2015) asserted that creative accounting is the art of faking or presenting the balance sheet, and the art of saving money. Adetayo and Ajiga, (2017) revealed that the practices has resulted to corporate scandals which include massive loss of investors fund, loss of jobs, disruption of capital market and reduction in the National Gross Domestic Product (GDP). Sanusi and Izedonmi, (2014) considered creative accounting as a serious crime and unethical practices that accounting bodies, law courts as well as other regulatory authorities need to adopt strict measures to stop. It could be deduced from the above that creative accounting is corrupted practices in accounting profession.

Empirical Reviews

Tassadaq and Malik (2015) investigated Creative accounting and financial reporting: model development and empirical testing in the industrial



sector of Pakistan. The questionnaire was the major instrument used to collect data in their study. Both descriptive and inferential statistics such as percentages, frequencies counts, multiple regression, and correlation analysis were used to analyse the data collected. The sample used was 120 professionals but only 80 returned responses were used for analysis. The study concluded that fraud or scandals that a company involved is as a result of several factors like unethical behaviors, agency problem, and non-professional attitude. It was also revealed that Creative accounting plays a significant role in the financial reporting of a company however it is negatively correlated because the more managers involved in it, the more the value of financial information decreases.

Bhasin (2016) carried out a study on the Survey of creative accounting practices: an exploratory study of an Asian Market in Malaysia. The study was descriptive research. The population of the study comprised all the preparers and users of the corporate Financial Statement. The sample of 120 people was randomly selected for the study. The study questionnaire was the major instrument used to collect data for the study. From the distributed questionnaire only 85 returned from the participants and subjected to analysis using the percentage and frequencies of respondents. The findings of the study showed that the practice of Creative Accounting is always a deliberate attempt to gain an undue advantage for accountants, managers, and companies.

Ismael (2018) in his study examined to establish the impact of creative accounting techniques on the reliability of financial reporting with particular reference to Saudi auditors and academics in Al-Kharj, Saudi Arabia. The study was descriptive research. The questionnaire of the five-point Likert scale was used for the study. The researcher distributed 100 questionnaires randomly to some practitioners of the accounting and auditing profession in the KSA environment but only 63 respondents returned. The data were analysed using both descriptive and inferential statistics. The result of the finding concluded that creative accounting

RESULTS

Table 1: Percentage scores on the awareness of the term creative accounting

	Frequency	Percentage
Yes	54	90%
No	6	10%

The result in table 1 indicated that 54 (90%) of the respondents were aware of the term creative accounting while only 6 (10%) claimed to be unaware. Thus, this

techniques used by management negatively affect the reliability of financial reporting.

Akenbor, and Ibanichuka, (2012) investigated the Creative accounting practices in Nigerian Banks. The study adopted descriptive research of a survey type. The population of the study was fifty (50) branch managers and accountants of banks currently operating in the Federal Capital Territory (FCT) Abuja as at the time the study was conducted. A five-point Likert scale questionnaire was the instrument used to elicit responses for the study. The data collected for the study were analysed descriptively using mean scores while the formulated hypotheses were tested with Z-test and Analysis of Variance (ANOVA). The findings of the study revealed that the only major reason for creative accounting practices in Nigerian banks is to boost the market value of shares. The study further revealed that users of accounting information are adversely affected by the practice of creative accounting.

METHODOLOGY

The descriptive research of a survey type was adopted. The population of the study comprises 187 accounting educators (academic staff) and practitioners in Afe Babalola University, Ado Ekiti and Federal Polytechnic, Ado Ekiti. The sample of the study was 60 respondents selected using a purposive random sampling technique. A well-structured questionnaire was the instrument used for the study and the face validity of the instrument was ensured by the experts in the Department of Accounting. The reliability of the instrument was determined through a pilot-test conducted on the instrument. The reliability coefficient of 0.85 was obtained using the Cronbach alpha coefficient which indicated that the instrument was reliable to collect all the necessary data for the study. The research questions were answered using mean scores and standard deviation and ANOVA was used to test the hypotheses formulated at 0.05 level of significance.

shows that 90% of the respondents have the knowledge of the subject matter which means the data got from the available respondents are enough for the study.

**Table 2: Mean scores and standard deviation on the creative accounting techniques used to influence accounting information**

S/N	Items	N	Mean	St.D	Remarks
1	Enter artificial transactions to the financial statement	60	3.27	0.70	Agreed
2	Change of the value and structure of internal capital	60	3.08	0.64	Agreed
3	Change of the value of assets	60	3.43	0.62	Agreed
4	Change of the value of liabilities	60	3.13	0.85	Agreed
5	Reclassification and presentation of assets or liabilities	60	3.43	0.56	Agreed
6	Overestimation of revenue by recording fictitious sales revenue	60	2.52	0.96	Agreed
7	Change the value and structure of revenues	60	2.71	1.02	Agreed
8	Off-balance sheet financing to enable company show better gearing ratios	60	3.57	0.67	Agreed
Grand Mean			3.14	0.75	Agreed

The result in table 2 revealed that items 1-8 are rated above the acceptable mean score of 2.50 which indicated that respondents agreed with all the statements. The grand mean and standard deviation of 3.14 and 0.75 further revealed that there was a high reaction from the respondents on the creative

accounting techniques used to influence accounting information. Thus, it implies that accounting educators (academic staff) and practitioners could identify creative accounting techniques used to influence accounting information.

Table 3: Percentage scores on the extent to which practices of creative accounting affect the characteristics of accounting information

Category	Frequency	Percentage
Low (1.00 – 1.49)	6	10%
Moderate (1.50 – 1.99)	10	16.67%
High (2.00 – 3.00)	44	73.33%
Total	60	100%

In order to determine the extent to which practices of creative accounting affect the characteristics of accounting information, mean values of responses towards characteristics of accounting information were used. Mean values were used to illustrate the responses to items 9-16 in the questionnaire on the perception of accounting educators and practitioners towards the practices of creative accounting and categorized into low, moderate and high.

Respondents who scored below the mean score (2.50) were categorized into low extent. Those who scored above the mean score were categorized into high extent while those who scored around the mean

score were grouped as moderate. The extent to which practices of creative accounting affect the characteristics of accounting information is presented in table 3.

The result showed that out of 60 respondents, 6 (10%) indicates low practices of creative accounting, 10 (16.67%) showed moderate practices of creative accounting while those who indicated high practices of creative accounting were 44 (73.33%). This shows that the extent to which the practices of creative accounting affect the characteristics of accounting information is high.

**Table 4: Mean scores and standard deviation on opinions of accounting educators and practitioners toward the practices of creative accounting**

	Items	N	Mean	St.D	Remarks
17	Accounting/audit profession is affected by creative accounting	60	3.43	0.78	Agreed
18	Creative accounting affects the level of accuracy of accounting information	60	2.70	1.03	Agreed
19	Creative accounting devalues the integrity of accounting practitioners	60	2.71	1.22	Agreed
20	Creative accounting affects the level of credibility of accountants and auditors that prepare and audit accounting information	60	3.48	0.57	Agreed
21	Creative accounting practices affect the image of accounting profession as a whole	60	3.28	0.78	Agreed
22	Creative accounting practices affect the users' confidence on accounting information	60	3.08	0.87	Agreed
23	Creative accounting practices lead to alarming rate of corruption in the business environment	60	2.90	1.20	Agreed
24	Creative accounting practices affect the quality of accounting information in making investment decision	60	3.42	0.67	Agreed
	Grand Mean		3.12	0.89	Agreed

The result in table 4 revealed that items 17-24 rated above the acceptable mean score of 2.50, which indicated respondents' agreement with all the statements, this means the opinions of accounting educators and practitioners toward the practices of creative accounting are negative. The grand mean and standard deviation of 3.12 and 0.89 further indicated that there was a high reaction from the respondents on

the opinions of accounting educators and practitioners toward the practices of creative accounting.

Test of Hypotheses

H₀₁: There is no significant difference between accounting educators and practitioners' responses on creative accounting techniques used

Table 5: ANOVA showing difference between accounting educators and practitioners' responses on creative accounting techniques

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.765	2	1.3825	2.375	0.224
Within Groups	32.5625	57	0.57125		
Total	35.3275	59			

P>0.05 level of significant.

The results in table 5 shows that (Df_{2, 57}= 2.375, <F_t= 3.00 at 0.05) is not significant. Thus, the null hypothesis was accepted. This implies that there is no significant difference between accounting educators and practitioners' responses on creative accounting techniques. The implication of this result is that both accounting educators and practitioners are aware of the

creative accounting technique used to influence accounting information.

H₀₂: There is no significant difference between accounting educators and practitioners' responses on the extent to which creative accounting practices affect the characteristics of accounting information

**Table 6: ANOVA showing difference in accounting educators and practitioners' responses on the extent to which creative accounting practices affect the characteristics of accounting information**

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	0.8485	2	0.424	0.974	0.436
Within Groups	24.6265	57	0.432		
Total	25.475	59			

P>0.05 level of significant.

The results in table 6 shows that ($Df_{2, 57} = 0.974$, $<F_t = 3.00$ at 0.05) is not significant. Thus, the null hypothesis was accepted. This implies that there is no significant difference in accounting educators and practitioners' responses on the extent to which creative accounting practices affect the characteristics of accounting information. Therefore, academic staff and

accounting practitioners believed that practices of creative accounting affect the characteristics of accounting information to a high extent.

H_{03} : There is no significant difference between accounting educators and practitioners' responses on the opinion toward the practices of creative accounting

Table 7: ANOVA showing difference in accounting educators and practitioners' responses on the opinion toward the practices of creative accounting

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	7.7748	2	1.3875	1.728	0.171
Within Groups	47.1315	57	0.8268		
Total	54.9063	59			

P>0.05 level of significant.

The results in table 7 shows that ($Df_{2, 57} = 1.728$, $<F_t = 3.00$ at 0.05) is not significant. Hence, the null hypothesis was accepted. Thus, there is no significant difference between accounting educators and practitioners' opinions toward the practices of creative accounting. The implication of this is that the practices of creative accounting affect accounting information.

DISCUSSION OF FINDINGS

The findings of the study revealed various creative accounting techniques that are negatively affecting accounting information, this include; entering artificial transactions to the financial statement, change of the value and structure of internal capital, change of the value of assets and liabilities, reclassification and presentation of assets or liabilities, overestimation of revenue by recording fictitious sales revenue, changing the value and structure of revenues and off-balance sheet financing to enable company show better gearing ratios.

The findings of the study also revealed that practices of creative accounting affect the characteristics of accounting information to a very high extent. These characteristics include; reliability, relevance, verifiability, neutrality, completion, and faithful representations of accounting information. This study supported that of Ismael (2018), who found that

creative accounting techniques used by management negatively affect the reliability of financial reporting.

Finally, the result of the study showed that the practices of creative accounting affect the integrity of accounting practitioners, level of credibility of accountants and auditors, the image of the accounting profession as a whole, the quality of accounting information, and users' confidence in accounting information. This study is in agreement with Akenbor and Ibanichuka (2012) who revealed that users of accounting information are adversely affected by the practice of creative accounting.

CONCLUSION AND RECOMMENDATIONS

From the findings of this study, the perceptions of accounting educators (academic staff) and practitioners are not different toward practices of creative accounting. Hence, accounting educators (academic staff) and practitioners are aware of the creative accounting technique used to influence accounting information. The study further revealed that practices of creative accounting affect all the characteristics of accounting information as well as users' investment decisions and the integrity of the practitioners. In conclusion, accounting educators and practitioners indicated that creative accounting is



negatively affecting the accounting information and profession. Therefore, the study recommended that accounting bodies should take strict measures to curb creative accounting practices among accounting practitioners, to restore integrity and users' confidence in accounting information. Also, a monitoring team/group should be in place to check the draft of accounting information prepared by any organization/institution, this would be required in order to prepare a financial statement before being finally published for public consumption.

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DIFFICULTIES CADETS FACE WHILE PRACTICING LISTENING AND THE WAYS OF ELIMINATING THEM

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ABSTRACT

The article discusses the main difficulties faced by cadets in the process of listening. It also gives examples of some problems with listening and ways to solve them as well as the main types of listening and processes of mastering audio material. The most common problem that cadets face while listening is related to the fundamental aspect of understanding, processing perception, and the problem regarding the audio scenario. Cadets who know some words by sight can't recognize them by sound, or their vocabulary is not developed enough to listen to them. This undeveloped vocabulary can be directly related to how students learn new words. Many of them learn by memorizing the spelling of words and often forgetting how they sound. This article is devoted to the explanation and analysis of these problems and recommendations for eliminating the above difficulties that cadets face in the process of listening to various sources.

KEYWORDS: *listening difficulties, solving problems, top-down, bottom-up, listening sub-skills.*

INTRODUCTION

For cadets of the Military Technical Institute of the National Guard, one of the most difficult skills is listening. Listening is a receptive part of the oral communication of a language and means the ability to understand sound speech. The means of transmitting oral speech is not only the perception of meaning, but also the interpretation, analysis, evaluation and judgment of spoken words. The International Listening Association recognizes the universal definition of listening as "the process of obtaining, constructing meaning from and responding to oral and/or non-verbal messages" [1, c 61–63].

There are several problems that cadets face in the process of listening to English speech. These problems stem from a number of factors that include: speed of speech, limited vocabulary, and lack of concentration. Most of the cadets face difficulties when listening to the target language.

CLASSIFICATION

You can classify the four most common difficulties of listening to English among cadets:

1. Cadets quickly forget what they hear:

Cadets can't remember certain words and phrases they hear. One of the most common

complaints is that they can understand what is being said when they hear it, but they forget it as soon as they start listening to another part of the message.

As suggested by Anderson, the three phases of language understanding do not always occur at different stages, but can be recursive and overlapping. In this way, listeners can try to preserve one part of the input signal that they have successfully received, while paying attention to the acoustic signals for the next part. Short-term memory is constantly cleared for new input, and if some form of association or fixation in long-term memory does not occur immediately, the information will be permanently erased from the individual's memory [2, c 96-98]. This is the problem that cadets often face while listening.

2. Cadets don't recognize the words they know:

The second most common problem that cadets face while listening is related to the fundamental aspect of understanding and processing perception. Some cadets may have problems with the sound script. So even though they know some words by sight, they can't recognize them by sound. In other words, their listening vocabulary is not sufficiently developed. Their ability to understand spoken words



is severely limited because they have not stored the sounds of lexical elements effectively in long-term memory. This undeveloped vocabulary can be directly related to how cadets learn new words. Many of them learn by memorizing the spelling of words and often forgetting how they sound. Another possible explanation for this problem is that the meanings of words cannot be automated. Cadets know the words, but slowly activate this knowledge. Some cadets are aware of the possible connection between the practice of teaching and this particular listening problem.

3. Cadets understand the words, but not the intended message:

Cadets cannot fully understand the message, even if they understand the literal meaning of the words. This is a usage problem, as it relates to the listeners' ability to draw useful conclusions or act on the intended meaning of the message.

4. Cadets cannot form a mental representation from the words they hear:

The last common problem occurs during the parsing stage. Cadets cannot get a reasonable mental picture of the information they hear by linking the words they hear.

METHODOLOGY

Other listening problems and suggestions on how to solve them.

It often happens that cadets cannot separate speech streams into recognizable words or phrases. This problem seems to be largely due to the lack of local or specific context that can be presented in the previous parts of the text. The extent to which this lack of local context affects understanding and may depend on how much prior knowledge the cadets can transfer into their interpretation. Those with extensive background knowledge can often make up for this lack by engaging in top-down processing to fill in the gaps. Those who can't do this may have no choice but to return to input-based parsing, which becomes even more difficult when there are many unfamiliar words.

Studies show that cadets have problems with perception and beliefs about their listening comprehension, some of which include the characteristics of the text being listened to, the characteristics of the speaker, and the degree of visual and written support. It has also been found that ineffective listening strategies, such as listening to every detail to get the basic idea of the spoken text, can hinder cadets' listening comprehension of the text. It is assumed that activating the cadets' memory before listening can solve this problem, since the cadets will not try to process the listened passage word by word, but will try to build a meaningful interpretation of the text as a whole.

When designing to teach cadets to listen and get them to focus, it is very important to consider the listening process, not the listening product. Integrating the process approach into regular listening exercises will increase cadets' awareness of the process of successful listening and help them better control their listening efforts. The first task that the teacher must solve is a table that the cadets must fill in in their forecasts about what information and keywords they expect to hear in a given text. The cadets then listen to the text and compare their predictions. The second task is to help the cadets understand the spoken text with some written support provided to them prior to the hearing. The task is aimed at understanding the sequence of events of a particular story.

Listening-related processes

An experienced listener does not passively perceive what the speaker says. It actively constructs meaning. It highlights the main points and supporting details; it distinguishes fact from opinion. He guesses the meaning of unfamiliar words. These are the cognitive aspects of listening. There are also affective or emotional aspects of listening. The listener agrees or disagrees with the speaker. Like or dislike the tone of the voice or the choice of words of the speaker. He may find the speakers' choice of topic morally unacceptable or absolutely boring. Moreover, listening is a difficult skill, consisting of certain processes that must be explained. These processes can be summarized as follows:

Top-down processing

When a listener hears something, it may remind him of something from his previous knowledge, and this in turn leads him to predict the kind of information he is likely to hear. When this happens, it is said to use "top-down" processing. When the listener can talk about what he is going to hear, he already knows, this will help him better understand what he is hearing [3, p. 105-110]. This is why pre-audition warm-ups are held to help cadets see how the text they have listened to relates to what they already know.

Bottom-up processing

If what he hears evokes nothing in the previous knowledge, then the listener will resort to what is called "bottom-up" listening, the slow accumulation of meaning block by block through the understanding of all the linguistic data that he hears. This type of processing is a much more difficult way to solve this problem, however, you should not focus the student's attention on the "building blocks": pronunciation, knowledge of words, etc. People listen to words and sounds. They listen to the meaning. Therefore, we should teach our cadets to list the meaning: use any hints they can get from the context, i.e. who is talking about what topic, for what purpose, to whom, where, etc. to understand the meaning of what they are hearing. They should, for



example, try to guess the meaning of unknown or partially heard words from the context. They should be taught to focus on listening fully and completely as they listen. They should work on understanding the entire message and use grammar, vocabulary, and sounds only as aids to the task, not as important in themselves. [4, pp. 161-176].

Listening skills and sub-skills

Listening skills are an important component of learning a foreign language. However, the skill is not considered "sustainable". It is complex in nature and can be broken down into several sub-skills, which can be summarized below:

- Guessing the topic;
- Topic prediction;
- Note while listening;
- Request for repetition to identify the main ideas;
- Request to reduce the speed of speech to identify the main ideas;
- A quick read on the subject of global ideas or essence;
- Read for specific information about who, what, when, and where;
- Guessing the meaning from the context;
- Memorizing important details.
- Identification of the words cause and effect.
- Identification of the words of explanation / explanation.
- Definition of output words.
- Definition of comparison words.
- Identification of contrast words.
- Identification of exemplification words.
- Identification of generalization words.
- Identification of what the speaker said.
- Finding out why the speaker said it.
- Determining when the speaker changes the subject.
- Recognition of parts of speech.
- Distinguishing between facts and opinions.
- Detect keywords to determine the meaning.
- Distinguishing between literal and implied meaning.
- Identification of meanings expressed in various grammatical forms.

These skills are complex, and one skill can overlap with one or more other skills.

CONCLUSION

To improve listening skills, the teacher should encourage cadets to develop their confidence in their ability to cope with listening problems. It is important that the teacher gives feedback so that he can judge where the audience is going and how it should be directed. Teachers should also teach cadets to understand that individual words are best learned

in the context of sentences. Listening materials, tasks, and activities should be categorized according to the level of the students and provide authentic materials, because the ultimate goal of listening classes is to understand natural speech in real life. In addition, the teacher may try to find visual aids or draw drawings and diagrams related to listening topics to help students actively guess or imagine them.

In conclusion, it should be noted that the provision of various types of input data, such as radio news, movies, TV shows, everyday conversations, English songs, etc., effectively contributes to the development of listening skills.

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DISCOURSE COMPETENCE AS THE COMPONENT OF COMMUNICATIVE COMPETENCE

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ABSTRACT

This article discusses the views of world scientists and researchers on the subcompetence of communicative competence as main component as well as other subcompetences like grammatical sociolinguistic and strategic. However, the main focus of the paper is exploring the significance of discourse competence in terms of oral and written speech coherence and cohesion.

KEYWORDS: *discourse, discourse competence, communicative competence, coherence, cohesion.*

DISCUSSION

Despite the fact that most scientists agree with the construct of foreign language communicative competence in general, they do not come to a common opinion about the components of subcompetences and their content. In particular, in one of the first works devoted to the development of models of foreign language communicative competence, M. Canale and M. Swain [1] proposed three components of subcompetence: grammatical, sociolinguistic and strategic. A few years later, M. Canale [2] refined this model and identified another, fourth, subcompetence - discourse competence. The analysis of the first models suggests that scientists put their conceptual content in some terms denoting subcompetencies. In particular, "grammatical competence" in its conceptual content corresponded to "linguistic competence", since it included not only knowledge of the grammatical structure of the language being studied, but also knowledge of vocabulary and phonology.

Sociolinguistic subcompetence included both the variability of speech utterance depending on the social context of communication, which is traditionally the subject of study of sociolinguistics, and the socio-cultural component, which consists in knowledge of this very social and cultural context of communication. In this regard, it can be argued that M. Canale and M. Swain significantly limited the conceptual content of socio-cultural competence, reducing it exclusively to the knowledge of the social context of using a foreign language.

Discourse competence includes two basic concepts - "coherence" and "cohesion". Coherence is

the connectedness of words in a sentence and the connectedness of sentences in a text. Cohesion is the grammatical, stylistic, logical-semantic integrity of a text.

The model of foreign language communicative competence of M. Canale and M. Swain formed the basis of hundreds of American and European scientists' scientific studies. In Europe, the model of foreign language communicative competence of M. Canale and M. Swain was slightly modified and refined in the study of Ek Van [3], who taking into account the criticism of the first model, has already identified six subcompetencies: linguistic, sociolinguistic, social, sociocultural, discourse and strategic. It is obvious that linguistic competence, which includes a person's knowledge of the grammar, vocabulary and phonology of the foreign language being studied, corresponds in content to the grammatical subcompetence of the model of M. Canale and M. Swain. However, in his model, Ek Van separately presented sociolinguistic, sociocultural, and social subcompetencies.

Note that social subcompetence was first identified and presented by the author. Thus, Ek Van draws the attention of the pedagogical community to the fact that communication and its result depend both on the socio-cultural situation of communication, and on the social roles that speakers follow in the process of communication. The discourse component is also represented in the Ek Van model. Its content does not differ from the eponymous component of the model of M. Canale and M. Swain.



It should be noted that both Ek Van, M. Canale and M. Swain included strategic subcompetence in their models of foreign language communicative competence. This subcompetence is responsible for overcoming the language and information gaps that can inevitably appear in the process of foreign language communication.

In addition to the models of M. Canale and M. Swain and Ek Van, the model of communicative abilities developed by L. Bachman [4] has become widely known in the Western scientific literature. Based on the difference between the terms "competence" (as a knowledge category) and "performance" (as an activity category), Bachman suggested using the more correct, in his opinion, the term "communicative ability". In this way, he focused on how the student will be able to use the acquired knowledge about a foreign language in real oral or written communication. In its structure, the model of communicative abilities differs significantly from all other previously developed models of foreign-language communicative competence. The scientist identifies two main types of competencies-organizational (grammatical and textual components (connectivity of speech utterance)) and pragmatic (the social and cultural aspect of communication, as well as the functional aspect of communication). In fact, the content of the model of L. Bachman's communicative ability coincides with the content of the models of foreign language communicative competence of other authors, but in their structure they are radically different models.

In the Russian methodological literature, the models of foreign language communicative competence of R. P. Milrud, V. V. Safonova and I. L. Bim have become widely known. Also, many scientists based their research on the models of foreign authors M. Canale and M. Swain and. In his model of foreign language communicative competence, R. P. Milrud [5] followed the Western tradition, adding a pragmatic subcompetence. The scientist argued that when communicating, communication participants use utterances for various communicative functions, build a speech utterance in accordance with the communicative and pragmatic goals.

In the model of foreign language communicative competence of V. V. Safonova [6], a significant place is given to socio-cultural subcompetence, which includes sociolinguistic, subject/thematic, general cultural and country-specific competencies. In addition to socio-cultural, foreign language communicative competence includes language and speech.

In her model of foreign language communicative competence, G.V.Elizarova [7] took as a basis six components proposed by Ek Van. At the same time, the author considered all six components through the prism of cross-cultural

competence, highlighting the cross-cultural component in each of the subcompetencies of foreign-language communicative competence. Thus, G.V.Elizarova was one of the first scientists who tried to combine intercultural competence and foreign language communicative competence.

The most famous and widespread was the model of I.L.Bim [8]. The author included language, speech, socio-cultural, compensatory, and educational-cognitive subcompetencies in the construct of foreign language communicative competence. The fifth component of the I. L. Bim model - educational and cognitive subcompetence - was not represented in any of the models of foreign language communicative competence.

Educational and cognitive subcompetence means the ability of a person to engage in self-education during extracurricular time or after graduating from an educational institution for the rest of your life. On the one hand, it may seem strange to include in the model of foreign language communicative competence an aspect that will be universal for any subject of the educational cycle. On the other hand, according to P. V. Sysoev [9], by singling out the educational and cognitive subcompetence separately, I. L. Bim wanted to: a) emphasize the importance of developing the ability to engage in self-education in a foreign language; b) focus on the fact that a foreign language as an object of study has specific properties that require adapting universal skills directly to the teaching of a foreign language and the culture of the countries of the native and studied languages.

Within the framework of our research, the main interest is the development of discourse competence of students. In this regard, we will focus in more detail on such concepts as "discourse competence" and "discourse". In linguistic and pedagogical research, these terms have various interpretations. Let's consider some of the definitions. M. Canale understands discourse competence as "the ability to combine grammatical forms and meaning to achieve the unity of spoken and written text". The developer of the CEFR model of foreign language communicative competence understands discourse competence as "the ability to use appropriate strategies in communication and for the interpretation of texts". A text is understood as "any fragment of a spoken or written text, of any volume, distinguished by unity".

A. Davis, A. Brown, C. Elder [10] and others understand discourse competence as "a component of foreign language communicative competence responsible for the coherence and cohesion of the text". H. Brown [11] interprets discourse competence as "the ability to connect sentences together and create a meaningful statement". The Russian term "speech competence", which is very often synonymous with the English



term "discourse competence" includes language competence in four main types of speech activity: listening, speaking, reading and writing.

In the dictionary of methodological terms, E. G. Azimov and A. N. Shchukin [12] define speech competence as "possession of the methods of forming and formulating thoughts through language and the ability to use such methods in the process of perception and generation of speech. It is part of the communicative competence. We should talk about the quantitative and qualitative composition of speech competence. It can be larger or smaller. However, speech competence, like language competence, is not an end in itself, but an intermediate link on the way to communicative competence. They are subject to assimilation to the extent necessary and sufficient to solve the problems of interaction in the process of communication in accordance with the norms of the studied language, the usage and traditions of the culture of this language".

Researcher V. V. Safonov [13] understands the following by "speech competence": "On the one hand, awareness of the general and specific rules of speech behavior in the studied areas of everyday and socially significant communication, and on the other operational knowledge of these rules in order to generate and vary foreign language speech and to correctly interpret the content of authentic speech in a foreign language. The level of culture of perception and generation of speech depends on the level of formation of a person's speech competence. In the process of teaching foreign languages, there is a mutual influence of speech competence in the native language and speech competence in a foreign language. The development of cross-cultural speech competence necessary for the use of language as a means of communication in a foreign-language multicultural environment is hardly possible without the parallel formation and development of the corresponding socio-cultural competence".

Popova [14] understands discourse competence as "the ability to create a coherent speech utterance, while observing the thematic organization, coherence, cohesion, rhetorical efficiency and logic within the framework of a real communication situation and an adequate functional style".

CONCLUSION

The analysis of the above definitions of the terms "discourse competence" and "speech competence" indicates that they are identical in their conceptual content. Discourse or speech, competence is the ability of a person to produce a coherent oral or written statement, characterized by coherence and cohesion, as well as to adequately interpret a foreign-language statement when reading or listening. Discourse or speech, competence is inextricably

linked with all other subcompetencies of foreign language communicative competence (grammatical and socio-cultural /intercultural) and is formed in students along with other components. Some discourse / speech skills (abilities) can be universal and can be transferred from the native language to a foreign language (in the absence of socio-cultural conflicts and socio-cultural gaps).

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CHILD RIGHTS AT CONSTRUCTION SITES IN INDIA: A CRITIQUE

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ABSTRACT

In the words of Mr. V Sashikumar, general secretary of the Construction Workers Federation of India (CWFI), there are 6 crore construction workers in India. Only 3.5 crore of them are registered with Welfare Boards. All these unregistered and even many of those who are registered, do not get benefit of all welfare schemes. Majority of construction workers and their families are languishing in poverty with no or very limited access to basic necessities like nutritious food, healthcare facility, potable water etc. This has adverse impact on the growth and development of children of construction workers. Often it results in blatant violation of human rights of children. Recent on foot migration of thousands of workers alongwith their children (on account of hasty and sudden lockdown) to their hometown due to lack of food and money is an example of how their rights are neglected.

This research paper is an attempt to critically analyse the law in India on prevention of child labour and offering welfare measures to the construction workers and their children's. It also contains an analysis of judicial trend on rights of children's in construction industry. Author has also suggested many reforms in current legal and administrative framework for improved protection of rights of children's of construction workers.

KEY WORDS: Construction, Workers, Children, Rights, Welfare

INTRODUCTION

Social Justice must begin with child unless tender plant is properly nourished; it has little chance of growing into strong and useful tree. So, first priority in the scale of social justice should be given to the welfare of children.

-Subba Rao, J.

The word 'child' is derived from the Latin word '*infans*' which means 'the one who does not speak.'¹ With the social development, the term child has evolved to include a new born baby to one attaining adulthood. Similarly, the rights and need of care for children has also evolved and today is ascertained

through recognition of various fundamental human rights of children including, right to health, education, family life, play and recreation, an adequate standard of living, protection from abuse etc. In spite of recognition of these rights, even today, many children across the world are languishing in poverty and struggling to meet their basic needs. Child labour and poor economic condition of parents are two major causes behind violation of child rights.

According to the 'National Institute of Public Cooperation and Child Development' in India, Child Labour is economically unsound, psychologically disastrous and physically as well as morally dangerous and harmful. It involves the use of labour at its points of lowest productivity and is there, an inefficient utilisation of labour power.

¹ *Rights of the Child*, available at, <https://www.humanium.org/en/child-rights/>



INDIAN LAWS ON CHILD LABOUR

The Constitution of India

According to Article 24 of the Indian Constitution, "No Child below the age of 14 (fourteen) years shall be employed to work in any factory or mine or engaged in any other hazardous employment."

Article 23 of the Indian Constitution expressly prohibits human trafficking, forced or bonded labour. Though Article 24 prohibit child employment the reality shows different picture. According to data from Census 2011, the number of child labourers in India is 10.1 million of which 5.6 million are boys and 4.5 million are girls.²

The Child and Adolescent Labour (Prohibition and Regulation) Act, 1986

Section 3. Prohibition of employment of children in any occupation and process. –

(1) No child shall be employed or permitted to work in any occupation or process.

The main object of the Child Labour Act, 1986 (hereinafter referred to as the CALPR Act) is to prohibit the engagement of children (below 14 years) in all occupations and to prohibit the engagement of adolescents (between 14 to 18 years) in hazardous occupations and processes. Though section 3 prohibits child labour, it allows help of child in family enterprise other than any hazardous occupations or processes listed in the schedule attached to the Act. Unfortunately the term hazardous occupations referred to u/s 3 has reference to schedule 1 of the Factories Act, 1948 which doesn't include construction as hazardous industry. Hence, the CALPR Act is of no use in prohibiting child labour at construction site. The recently enacted The Occupational Safety, Health and Working Conditions Code, 2020, which has replaced the Factories Act, 1948. However, the Code also in its schedule I (List of Industries involving hazardous processes) doesn't include construction as hazardous activity.

The Child Labour (Prohibition and Regulation) Act, 1986

Under this Act, there is total ban on Child Labour engagement in Building & Construction Industry. Section 3 read with Entry 2, Part A of schedule annexed to the Child Labour (Prohibition and Regulation) Act 1986 completely bans cinder picking, clearing of ash pit or building operation in railway premises by children under age of fourteen years. It

² *Child Labour and Exploitation*, UNICEF India, retrieved from <https://www.unicef.org/india/what-we-do/child-labour-exploitation>

also prohibits employment of children in construction of railway station.³

Moreover, Section 3 read with entry 114 Part B of the schedule annexed to the Act specifically prohibit employment of children in 'Building and construction industry including processing and polishing of granite stones.'

Act provides for minimum working hours for a child in a day to be 6 hours (section 7[3]) with an interval of 1 hour after continuous work for 3 hours.

Punishment for breach of said provision is prescribed under Section 14, which includes;

(1) ₹ 10,000/- to ₹ 20,000/- fine and

(2) One month to 12 month jail.

Section 17 of the Act provides for appointment of inspector for securing compliance with provisions of Act.

The Mines Act 1952

Section 40 of the Act prohibits employment of person below age of 18 years in any mines or any part thereof.

The Building and Other Construction Workers (Regulation of Employment and Condition of Services) Act, 1996 (hereafter referred to as the BOCW Act).

Section 12 (1) provides as follows;

Every building worker who has completed eighteen years of age, but has not completed sixty years of age, and who has been engaged in any building or other construction work for not less than ninety days during the preceding twelve months shall be eligible for registration as a beneficiary under this Act.

However, the BOCW Act 1996 has been recently replaced by the Code on Social Security, 2020 which does not contain a provision in line with Section 12 of the BOCW Act, 1996.

CHILD LABOUR IN CONSTRUCTION

Construction sector has two key segments⁵:

1. Buildings, falling into one of the following categories:

- residential,
- commercial,
- institutional and
- industrial;

AND

³ Entry 4, Part A, Schedule, the Child Labour (Prohibition and Regulation) Act, 1986

⁴ Substituted by Amendment of 2001

⁵ Twelfth Five Year Plan (2012–2017), Volume II, Planning Commission (Government of India) 2013, at pg. 362 available at, https://niti.gov.in/planningcommission.gov.in/docs/planrel/fiveyr/12th/pdf/12fyp_vol2.pdf



2. Infrastructure such as road, rail, dams, canals, airports, power systems, telecommunication systems, urban infrastructure including water supply, sewerage, and drainage and rural infrastructure.

Although more than 41 million people (as per Government estimate) are employed in this sector, less than 6 per cent has the benefit of structured training and skill building. Skill upgradation schemes launched by the state and Central Governments are not adequate and only a handful of large firms organise training programmes. Construction firms are regulated under multiple laws and there is no unified regulatory framework.⁶

A large proportion of workers (approximately 93%) in the construction sector undertake informal work, which implies the absence of social and legal protection.⁷ Every year at least 108,000 workers are killed on construction work sites worldwide. About 30 percent of all occupational fatal injuries occur in the construction sector. In developed countries, a construction worker is three to four times more likely to die on the job than workers in other sectors, while in developing countries, this likelihood increases to three to six times.⁸ In case of accidental death of parents working on construction sites⁹ and poor economic family conditions, often forces the children's of deceased to stop their education and search for a job. The ultimate result of all this is child labour.

Though the law has provided for a statutory deterrence towards child labour, the reality is quite different. As per national child labour survey of 2016, out of total child labour about 0.7% of children's are employed in construction sector.¹⁰ A report (2016) by NGO *Verité* identified bricks as one of 43 of the world's most important primary commodities. Its analysis, based on a range of globally recognised data, showed that bricks from 21 countries are produced with forced labour and/or child labour. These include two of

the top three countries that export bricks worldwide: China (first place) and India (third place).¹¹

Andrew Brady, director of Union Solidarity International, said: "The scale of forced and child labour in the brick kilns of India is of epidemic proportions. Simply put, cheap bricks means cheap office buildings on the back of blood bricks and slave labour."¹²

The International Justice Mission said about bonded labour in Indian brick kilns: "Children are working in hazardous conditions helping their parents load bricks into the furnace. They are also forced to turn the bricks throughout the day as the bricks are being dried in the sun. In one of the cases from 2015, a 5-year-old was asked to turn the bricks dried in the sun, every day, for which she was not paid anything at all."¹³

CHILDREN'S OF CONSTRUCTION WORKERS

The new Code on Social Security, 2020 (which has replaced the previous welfare legislation for construction workers i.e. the BOCW Act, 1996) u/s 67 provides for establishment of crèche facility.¹⁴ However, same is not sufficient enough. In said provision, the important aspects of ensuring hygiene, nutritious food and recreational facilities in crèche has been neglected by legislators.

Section 7 of the Code on Social Security, 2020 proposes to establish State Building Workers' Welfare Board which shall be a body corporate¹⁵ consisting of a chairperson to be nominated by the State Government, one member to be nominated by the Central

⁶ *Ibid*, at pg. 364

⁷ Singh GP. *Plights of migrant construction workers*. Manag Labour Stud. 2016; 41(3):181-98.

⁸ International Labour Organization (ILO), *Construction: a Hazardous Work*, 2009. Available at, http://www.ilo.org/safework/areasofwork/hazardous-work/WCMS_124597/lang--en/index.htm

⁹ On-site deaths is 20 times higher than those in Britain, 25% of the deaths result from falling from a height, and nearly 80% of the workers work in unsafe environment. See, <https://www.justiceneeds.co.in/indias-80-construction-sites-unsafe-deaths-20-times-higher-than-those-in-britain/>

¹⁰ *National Child Labour Survey of 2016*, ILO, available at, national child labour survey of 2016

¹¹ *Verité. Strengthening protections against trafficking in persons in federal and corporate supply chains*. 2016 Verité. Available at: <http://www.verite.org/sites/default/files/images/VeriteCommodityReports-2016%200229.pdf>.

¹² Hawksley, H., 2014. 'Why India's brick kiln workers live like slaves'. BBC, 2 January 2014.

¹³ Daniel, E., 2016. 'We Must Work Together to End Human Trafficking'. New Indian Express, 9 February 2016

¹⁴ Section 67. *Creche facility*. (1) Every establishment to which this Chapter applies, in which fifty employees or such number of employees as may be prescribed by the Central Government, are employed shall have the facility of crèche within such distance as may be prescribed by the Central Government, either separately or along with common facilities

¹⁵ Section 7 (2), the Code on Social Security, 2020



Government.¹⁶ The board has been entrusted with the function of providing death and disability benefits¹⁷ to a beneficiary or his dependents and pension.

In addition, Section 7 (6) also provides for the following benefits;

- d) frame educational schemes for the benefit of children of the beneficiaries as may be prescribed by the appropriate Government;
- e) meet such medical expenses for treatment of major ailments of a beneficiary or, such dependent, as may be prescribed by the appropriate Government;
- f) make payment of maternity benefit to the beneficiaries;
- g) frame skill development and awareness schemes for the beneficiaries;
- h) provide transit accommodation or hostel facility to the beneficiaries;
- i) formulation of any other welfare scheme for the building worker beneficiaries by State Government in concurrence with the Central Government; and
- j) make provision and improvement of such other welfare measures and facilities as may be prescribed by the Central Government.

Though the aforementioned welfare measures are proposed by the Code, the law is silent as to how it will be implemented. Considering the temporary and migratory nature of work in construction industry, the clarity on source of funding and mechanism for dispersal of benefits by the board is required. The Central Government has simply asked the State Government to establish the board. Considering the current conflict between states and center over disbursement of money and pendency in payment of money by the Central Government to the State Governments, and the poor economic conditions of states, it would be inappropriate to hold only State Governments responsible for the financial burden of welfare measures to construction workers. Instead, a fund contributed in form of cess may be a solution as the conflict between state and center may render denial of welfare measures, as it had happened in the past.

The Building and Other Construction Workers' Welfare Cess Act, 1996

The Act was passed with an object to provide for the levy and collection of a cess on the cost of construction incurred by employers with a view to augment the resources of the Building and Other Construction Workers' Welfare Boards. The fund so

gathered was supposed to have been utilized towards the welfare scheme for the construction workers. However, till 2020, around ₹ 52,000 crore has been collected as BOCW Welfare Cess, of which around ₹ 31,000 crore remains unutilized.¹⁸

Although the welfare schemes are proposed on paper, the practical reality shows a complete contrast. In India, young children running around sites where such work is in progress have become as common a sight as the stacks of bricks and cement. Apart from endangering their own lives, they also divert the attention of their parents from the labor-intensive work at the site.¹⁹

Poor economic and social condition of parents employed in construction sector also contribute to the violation of rights of children. The construction Industry in India absorbs almost 44 million workers, two third of whom (30 million including 4.5 million women) are unskilled and more than half of them live below the poverty line.²⁰

Ground level reports reveal that implementation of law for protection of construction workers has been unsatisfactory. They do not have access to clean drinking water, toilets, proper accommodation or even access to basic medical facilities. Such pitiable conditions make the construction workers and their family members, including children, vulnerable to health risks.²¹

A study of 131 migrant children living at various construction sites in Ahmedabad showed that half of the children surveyed were underweight (low weight for age), 41% were stunted (low height for age)

¹⁸ Ananda Jonathan, *1.5 crore unregistered construction workers in the lurch sans relief*, The Indian Express, 27th March 2020, accessed from, <https://www.newindianexpress.com/business/2020/mar/27/15-crore-unregistered-construction-workers-in-the-lurch-sans-relief-2122056.html#:~:text=However%2C%20the%20Government%20of%20India's,are%20registered%20with%20welfare%20boards.>

¹⁹ Varughese J.M., *Mobile creches: a safe haven for children of construction workers*, Mint, 2008, available at, <https://www.livemint.com/Companies/xJZi4T54aVyA8JX6ae9dLL/Mobile-creches-a-safe-haven-for-children-of-construction-wo.html>

²⁰ *Life Of A Construction Labourer's Child*, BW Businessworld, July 19, 2020, retrieved from, <http://www.businessworld.in/article/Life-Of-A-Construction-Labourer-s-Child/15-12-2017-134829/>,

²¹ *Id*

¹⁶ Section 7 (3), the Code on Social Security, 2020

¹⁷ Section 7 (6) (a), the Code on Social Security, 2020



and 22% were wasted (low weight for height).²² Children also were found to consume copious amounts of packaged food such as chips and biscuits, as with a laborious 12-hour workday, mothers weren't left with many alternatives in the absence of affordable, healthy packaged food.²³ Apart from this lack of proper and hygienic latrines, safe drinking water and access to appropriate healthcare facilities are also distant dreams for majority of construction workers and their children's in India.

The children living on construction sites often suffer from malnutrition, under nourishment, accidents, and innumerable health problems. According to a Mobile Crèche's study,²⁴ about 70 per cent of children living on construction sites suffer from malnutrition, compared with the national average of 21 per cent. The study also pointed out that in the absence of clean drinking water and flush latrines, cholera and other diseases spread quickly and many people suffer coughs caused by inhaled paint fumes and cement particles. Several parents working on construction sites are unaware that their children are malnourished. The breastfeeding mothers face many barriers at their worksites to feed their kids, including the lack of regular breaks. A very small number of construction sites have daycare facilities.²⁵

Majority of the workers in Indian construction sector are migrant workers. The general pattern of migration is that "women and children have always featured as 'associated' migrants with the main decision to migrate having been taken by the male of the household."²⁶ This often leaves away the other family members from the benefits assigned to migrants.

²² Divya Ravindranath, *How labour conditions at construction sites are leading to higher rates of child malnutrition*, Sep 27, 2019, retrieved from, <https://scroll.in/article/938248/how-labour-conditions-at-construction-sites-are-leading-to-higher-rates-of-child-malnutrition>,

²³ *Id*

²⁴ Retrieved from, <http://www.shram.org/uploadFiles/20121119051839.pdf>

²⁵ Ravichandran Vaishnavi, *Children of migrant construction workers face a disrupted quality of life*, Research Matters, Mar 10, 2020, available at, <https://researchmatters.in/news/children-migrant-construction-workers-face-disrupted-quality-life-0>

²⁶ Pandit, Niraj. Trivedi, Ashish & Das, Bidisha (2011). *A Study of Maternal and Child Health Issues Among Migratory Construction Workers*, Health line, July-December 2011, 2(2):

16 – 18, at p.16

This is particularly harmful in recent pandemic situations. Everyone in India has witnessed as to how the government failed in ensuring adequate facilities to migrant workers and their families at the place of work and how they were forced to walk hundreds of kilometers along with their children's. Most of these migrants were construction workers. The rampant human right violation of these workers and their families²⁷ could have been avoided by ensuring proper facilities at work place or prearranging adequate transportation prior to enforcing hasty lockdown.

JUDICIAL TREND IN INDIA

The judiciary in India had been the torch bearer in ensuring social justice as contemplated by the Constitution of India. Until the beginning of 21st Century, the judiciary in India was very proactive in recognizing and protecting various rights of Indian citizens. Even in field of child labour in construction industry, it has delivered some important verdicts. Some of them are as follows;

*People's Union for Democratic Rights v. Union of India*²⁸

Popularly known as *Asiad Workers Case*, wherein, children under fourteen were found to be among the migrant workers and contract laborers engaged in construction work for the Asian Games. In 1982, the case was taken to the Supreme Court by a democratic rights organization.

Drawing on the constitutional injunction against children being in hazardous employment, the Court held:

"...this is a constitutional prohibition which, even if not followed up by appropriate legislation, must operate *proprio vigore* and *construction work being plainly and indubitably a hazardous employment*, it is clear that by reason of this Constitutional prohibition, *no child*

²⁷ The National Human Rights Commission (NHRC) recorded over 2582 cases of human rights violation in the month of April, when the country was under a strict lockdown, indicating rampant violation of human rights which left millions of migrant labourers in the lurch. According to a Stranded Workers Action Network's report, published on 15 April, 2020, which surveyed more than 11,000 migrant workers, revealed that 50% of the respondents no rations left even for a single day; while 96% had not received rations, 70% had not received cooked food from the government; 78% or the respondents had less than ₹400 left. See, <https://www.livemint.com/news/india/how-coronavirus-turned-into-humanitarian-crisis-for-migrant-workers-11590401718622.html>

²⁸ AIR (1982) SC 1480; 1982 AIR 1473.



below the age of 14 years can be allowed to be engaged in construction work. Therefore, notwithstanding the absence of specification of construction industry in the schedule to Employment of Children Act 1938, no child below 14 years can be employed in construction work and the Union of India as also every State Government must ensure that this constitutional mandate is not violated in any part of the country.”

The aforementioned observation of court was made as there was no contemporary law prohibiting child labour at construction site. Court further held that,

“Article 24 of the Constitution embodies a Fundamental Right which is plainly and indubitably enforceable against every one and by reason of its compulsive mandate, no one can employ a child below the age of 14 years in a hazardous employment. Since, construction work is a hazardous employment, no child below the age of 14 years can be employed in constructions work and therefore, not only are the contractors under a constitutional mandate not to employ any child below the age of 14 years, but it is also the duty of the Union of India, the Delhi Administration and the Delhi Development Authority to ensure that this constitutional obligation is obeyed by the contractors to whom they have entrusted the construction work of the various Asiad Projects.”

The case is significant as for the first time construction industry was accepted to be a hazardous industry. Almost after 19 years, in 2001, the decision of Court was finally acted upon, when Part B of schedule annexed to the Child Labour (Prohibition and Regulation) Act, 1986 was amended to include construction industry as prohibited entity to employ child below 14 years.²⁹

The decision of honorable SC was reiterated in *Labourers Working on Salal Hydro Project v. State of Jammu and Kashmir*³⁰ when a letter was sent by the People's Union for Democratic Rights. It was addressed to Mr. Justice A. Desai, enclosing a copy of the news report published in the Indian Express, dated August 26, 1982, where it was written that a large number of migrant workmen from different states, including the State of Orissa were working on the Salal Hydroelectric Project in different conditions.

Court in this case casted a duty on the Central Government where it undertakes a construction project either itself directly or through a contractor to provide education to the children of the workers involved in the construction work. Court observed that,

“So long as there is poverty and destitution in this country, it would be difficult to eradicate child labour. But even so an attempt has to be made to reduce, if not eliminate, the incidence of child labour, because it is absolutely essential that a child should be able to receive proper education, with a view to equipping itself to become a useful member of the society and to play a constructive role in the socio-economic development of the country.”

In *Hydro Project...* case, Justice Bhagwati observed that construction work is a hazardous employment and therefore under Article 24 of the Constitution, no child below the age of 14 years can be employed in construction works by reason of the prohibition, enacted in Article 24 and this constitutional prohibition must be enforced by the Central Government.

*M.C. Mehta v. State of Tamil Nadu and others*³¹

The Court directed to withdraw the children who were working in hazardous industries, to ensure their education in appropriate institutions. Court also stated that, appropriate government will provide employment to one adult member of the family of the child withdrawn from work and if this is not possible, the government would contribute a sum of Rupees 5000 for each child to the welfare fund. The government would either provide a job to an adult member of the family *in lieu of* the child or deposit a sum of Rupees 25,000 in the Child Labour Rehabilitation-cum-Welfare Fund. In case of getting employment for an adult, the parent or guardian shall have to withdraw his child from the job. Even if no employment is provided the parent or guardian cannot allow the child to continue in the employment as an alternative source of income will be provided by the government to them from the fund.

In *M.C. Mehta v. State of Tamil Nadu*,³² SC held that, the problem of child labour in India has spread its fang far and wide and it had by now assumed the shape of an all India evil, holding that the offending employer must be asked to pay compensation for every child employed in contravention of the provisions of the Act a sum of ₹ 20,000. Court further stated that, the Inspector appointed u/s 17 would see that for each child employed in violation with provisions of the Act, the concerned employer pays ₹ 20000 which sum could be deposited in a fund to be known as Child Labour Rehabilitation Cum Welfare Fund.

SUGGESTIONS

- Schedule one of the Occupational Safety, Health and Working Conditions Code, 2020 and The Child and Adolescent Labour

²⁹ See, entry 11, PART B, SCHEDULE, the Child Labour (Prohibition and Regulation) Act, 1986

³⁰ (1983) 2 SCC 181 at 191.

³¹ AIR 1991 SC 417.

³² AIR 1997 SC 699 : 1996 (6) SCC 756



(Prohibition and Regulation) Act, 1986 may be amended to include Construction as hazardous process/industry in order to prohibit child labour in construction industry.

- Crèche facility provided for u/s 67 of the Code on Social Security, 2020 shall have adequate light and ventilation, cleanliness and sanitation facilities. A women, experienced and trained in the care of children and infants must be appointed as in charge of such facility, as required earlier u/s 35 of the BOCW Act, 1969.
- Such crèche facility shall ensure healthy, hygienic food, periodic healthcare checkup and recreational facility. It shall also have computer system with internet access to impart technology assisted education and skill sets.
- A separate breast feeding room shall be provided at construction site. Women's shall be provided with necessary breaks after intervals for breast feeding and complementary feeding of their kids.
- Mandatory insurance coverage shall be provided not only to the employees working on construction site, but also to their children. Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) & Pradhan Mantri Suraksha Bima Yojana (PMSBY) may be extended to all the construction workers and their family members. Contractors shall be held responsible for payment of premium (of all family members) that may become due during the employment of worker.
- Permanent residential schools in every district shall be established for the children's of all the parents employed in work of inconsistent nature. For e.g. children's of nomadic tribes, sugar cane workers, hawkers, construction workers etc. Minimum two percent seats in local schools shall be reserved for children's of migrant workers with easy enrollment, exit and/or transfer policy including midterm entry exit provision.
- Access to adequate and potable drinking water shall be ensured both at the construction site as well as at the shelter home provided to workers.
- Law shall ensure stringent penalties for default in maternity benefit payments.
- Section 11 (disclosures by promoters) of the Real Estate Regulation and Development Act, 2016 may be amended to include publication

of all social welfare facilities on the proposed site for the benefit of construction workers and their children.

- Real Estate Regulatory Authority (RERA) shall be empowered to prohibit and punish the employment of children on construction sites.
- For the overall development of a child, a safe and hygienic household with proper latrines and urinals must be ensured by the Code on Social Security. Strict deterrence in law requiring the contractor to provide for, and its proper implementation through stringent monitoring, safe and hygienic household with basic necessities of potable water, latrine and urinals shall be ensured. RERA shall be empowered to monitor such facilities and to take steps necessary for noncompliance, which may include blacklisting of contractor.
- Considering the fact that, mother's undernutrition contributes to child undernutrition and poor health outcomes,³³ mandatory free periodic health checkup of mothers employed at construction sites and having child below five years of age, shall be carried out by the contractor. In case a mother is found undernourished, appropriate medical care must be ensured by the contractor.
- *Poshan Abhiyan* (Nutrition Mission) launched by Government of India in early 2018, aimed at, food intake, dietary diversity, immunization, access to water and sanitation, maternal health, shall also focus on migrant families. Regional centers shall be established who in collaboration with NGOs may ensure that the migrants are benefited from the scheme.
- Considering the fact that, maternal education has an effect on child development, such that children of mothers who have achieved higher education experience better health outcomes than those with lower or no education,³⁴ provision of night/weekend school shall made

³³ Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, De Onis M, et al. *Maternal and child undernutrition and overweight in low-income and middle-income countries*. Lancet. 2013;382(9890):427–51.

³⁴ Devkota S, Panda B. *Socioeconomic gradients in early childhood health: evidence from Bangladesh and Nepal*. Int J Equity Health. 2016. <https://doi.org/10.1186/s12939-016-0364-2>.



for all the illiterate or less educated parents employed at construction sites.

- For full development of personality and upliftment from poor economic conditions, every child at construction site shall be ensured continuous access to education. Ministry of Labour and Employment shall ensure periodic training and monitoring of NGO's working for Construction workers and their families.
- In case of migrants, an Aadhaar database shall make a special entry of 'migrant' in address clause of such cardholders. This will enable them to access all governmental facilities, including public distribution facility (ration), across the country. A special provision for Aadhaar based or linked public distribution system may be created towards this end. This will avoid unnecessary migration and human right violation of migrants and their children as it happened in recent pandemic situation.
- In the words of Kofi Annan, '*Literacy is a bridge from misery to hope. It is a tool for daily life in modern society. It is a bulwark against poverty, and a building block of development...*' Children's are forced into labour due to poverty. Construction workers are mostly from the poor families. Hence, to break the vicious cycle of poverty, to make them aware about their rights and to ensure the bright future to their children, it is necessary to educate them.

in which it treats its children.' A child is the future of every nation. Being so, a social environment ensuring all round development of a child can only secure a good future to any nation. Hence, a society free of child labour, offering education, health and adequate nutritious food and socio-economic environment promising safe business and employment opportunities shall be the goal of every nation.

CONCLUSION

As per estimate, millions more children risk being pushed into child labour as a result of the COVID-19 crisis, which could lead to the first rise in child labour after 20 years of progress.³⁵ In a developing country like India, efforts must be directed towards ensuring deterrence for child labour. Considering the hazardous, inconsistent nature of work, low income and unawareness about rights of oneself and of children's, there is a need for ensuring all the aforementioned welfare benefits to the children's of construction workers.

In the words of Mr. Nelson Mandela, '*There can be no keener revelation of a society's soul than the way*

³⁵ International Labour Organization (ILO) and UNICEF, retrieved from [https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_747583/lang--en/index.htm](https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_747583/lang-en/index.htm)



UNIVERSALISATION OF EDUCATION IN ODISHA: A GOVERNMENT INITIATIVE

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ABSTRACT

Education is an important input for empowering people with skill and knowledge and giving them access to productive employment in future. It is an important input as well as output indicators influencing other development indicators of social sector such as health, nutritional status, income, family welfare and others. Both primary and secondary education deserves the highest priority for increasing the competence of the average worker and increasing National productivity. As the provision of universal elementary education is crucial for spreading mass literacy, the provision for secondary education is significant for economic development, modernising social sector and for effective working of democratic institutions. Secondary education serves as a link between the elementary and higher education and plays a very important role in this respect. Since universalisation of elementary education has become a constitutional mandate, it is absolutely essential to push this vision forward to move towards universalisation of secondary education which is already been achieved in a large number of developed countries and several developing countries. The recent focus on secondary education was generated by the 2005 Central Advisory Board of Education Report (2005) and the Rastriya Madhyamik Sikhya Abhiyan (RMSA) initiated in 2009-10 to universalize secondary education by making quality education available, accessible and affordable to all children within the age group of 14-18 years with strong focus on the elements of gender equity and justice. This paper studies the access to an equity and quality in primary and higher secondary education classes (IX-XII) in Odisha and examine some idea for improvements in each.

KEYWORDS: *Democratic institutions, Initiatives, Literacy, National productivity, Universalisation.*

1.0 INTRODUCTION

Education in every sense is one of the fundamental factors of development. No nation can achieve sustainable economic development without substantial investment in human capital. It is a significant tool for reducing poverty and unemployment rate in an economy. Therefore the need for literate population and universal education for all children in the age group of 6-18 years is crucial input for nation building and it was given due consideration in the Constitution as well as in the

successive five year plan. Lack of education leads to lack of access as well as quality of higher education in particular. Due to the lack of access to or economic compulsion all over in India as well as in Odisha, large sectors of population are deprived elementary and secondary education.

The literacy rate of Odisha during 1951 was 15.8% which has increased to 72.9% (Economic Survey 2013-14). The state has been making steady improvements in education front literacy rate in Odisha remaining at par with national average (73%)



registering an increase of 9.8% points compared to census 2001 (Economic Survey 2016-17).

Universalisation of Elementary Education (UEE) is a constitutional obligation and also a national commitment. The government of Odisha has formulated a number of goals for the education sector like UEE in the state. By 2010 under the Right of Children to Free and Compulsory Education Act 2009, universal literacy, development of secondary and higher secondary education, skill development through vocational education in higher secondary school and modernization of technical education. The Rastriya Madhyamik Sikhya Abhiyan (RMSA) is a flagship programme initiated in 2009-10 to universalise secondary education by making quality education available, accessible and affordable to all children within age group of 14-18 years with strong focus on the elements of gender equity justice.

As per Neighborhood Mapping-2015, out of 90,731 habitations total 87,646 habitations are covered with Primary School facilities and 88,652 with Upper Primary facilities.

- The State Government has relaxed the norm for opening of new primary schools to improve access & 100 percent enrolment in elementary education. 9,943 number of new primary schools and 11,008 New Upper Primary schools have been opened to provide education to the children of inaccessible areas from 2001 to 2015-16 under SSA.

- Transport/Escort facilities are provided to 1000 children of sparsely populated and scattered habitation.

- Construction of 169 KGBV building has been completed and 13 KGBV building are under progress.

- 65.39 lakh children - in 6-14 age group out of which 65.38 lakh are studying in 68,538 schools and 0.05 lakh children are reported as out of schools are in schools out of which 18.87 lakhs are SC & 30.16 lakh are ST and 48.33 lakh are girl students.

- Free text books have been supplied to all students of all Govt. and aided schools.

- Uniform provided to all girl students and SC / ST, BPL boys in Govt. Schools.

- A comprehensive monitoring mechanism "Samikshya" has been adopted to track performance of elementary education throughout the State.

- 85,500 teachers are engaged and working under SSA to maintain the desirable Pupil Teacher Ratio in Odisha. 9,121 new Sikhya Sahayaks have been appointed during 2015-16 under SSA. 5,040 no. of newly recruited teachers are trained in 30 days teachers training module.

- 1.02 lakh children with special needs are enrolled in Schools.

- 329 Medical assessment camps have been organized for distribution of assistive devices to 7,063 CWSN and 388 CWSN for surgical correction

and teachers provided training on Braille and on sign language.

- 49.27 lakh students of 62,640 primary and upper primary schools are covered under MDM programme.

- 9,344 children of migrant families are retained in 254 seasonal Hostels. 8 residential hostels with intake capacity of 50 each for Urban deprived children, child labour and street children are being opened.

- The School & mass education Department organized SURAVI 2015 Mela, a State level creative programme for school students at cluster, blocks and district level to encourage students inherent skills. Awareness programme on Bal Swachhata Abhiyan and Swachha Vidyalaya Abhiyan have been organized on 2nd October 2015 across the State

1.2 OBJECTIVES

- To highlight the status of elementary and secondary education from 2009-10 to 2015-16 in Odisha.
- To analyse numbers of enrolment of girls, SC and ST students in elementary and secondary education from 2009-10 to 2015-16 in Odisha.
- To highlight the Gender disparity in enrolment in elementary and secondary education.

1.3 UNIVERSALISATION OF SECONDARY EDUCATION

- To provide secondary school within 5 K.M. and higher secondary school within 7-10 K.M. of every habitation.
- Gross Enrolment Ratio (GER) of 75% for class-IX & X within five years (by 2013-14). Universal Access to Secondary Education (SE) by 2017.
- Universal Retention by 2020.
- Access to Secondary Education (SE) for all disadvantaged group of children.
- To improve quality of education resulting in enhanced intellectual, social and cultural learning.
- 2,608 private high schools have been notified to receive block grant and 399 high schools have been notified during 2015-16. 773 number of new High schools have been sanctioned under RMSA, out of which 745 number of schools have been opened till date. 162 model high schools in educationally back ward blocks have been approved. 100 model schools will be made functional from 2016-17.
- 10,392 qualified teachers have been engaged on contract basis to maintain Pupil- Teacher ratio in secondary schools.



- Vocational education is introduced in 30 schools of the State at secondary school stages in automobile, IT & ITES subjects. OMSA (under RMSA) is the nodal authority run and monitor the vocational education in secondary schools.
- 415 number of Junior SES teachers have been promoted to the posts of Senior SES Headmaster.
- 95 number of teacher (Primary & Secondary) have been awarded for State Award by the Hon'ble Chief Minister, Odisha during 2015-16.
- In order to enhance the retention rate, 5.40 lakh students belonging to SC/ST/BPL/girls categories have been benefitted under distribution of bicycles to class X students at the cost of Rs 140.40 crore. Apart from Government High schools, students reading in Sanskrit tolls and Madrasas have been benefitted under this scheme

definition of poverty and a means for its diminution. Sustained and meaningful access to education is critical to long term improvements in productivity, the reduction of intergenerational cycles of poverty, demographic transition, preventive health care, the empowerment of women, and reductions in inequality. (Streeten, 1999; Sen, 1999).

1.4.1 Gross Enrolment Ratio

The GER is calculated by taking the number of children in secondary education and dividing it by the number of children in the relevant age category (in this case 6-11 and 11-14 years of age). The growth of facilities in primary, upper primary and secondary education has been expanding in the state, especially in rural and backward areas. The state aims at providing primary schools within 1 KM and upper primary schools within 3 KM of habitans having population of more than 300 and 500 numbers respectively. There are 4111000 in primary education, 2217000 in upper primary and 1250625 children in secondary education in the year 2015-16. The overall Gross Enrolment Ratio (GER) in class 1 to 8 is 96.50% which is much larger than secondary class 9 to 10 of 78.28percent.

1.4 ACCESS

Access to basic education lies at the heart of development. Lack of education is both a part of the

Table-1: Gross Enrolment Ratio

Years	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Elementary	99.79	101.32	101.31	100.56	102.36	97.67	96.50
Secondary	61.40	68.76	75.03	77.03	68.65	75.43	78.28

Source: OPEPA, Odisha

The number of children in secondary education level is expected to increase due to both supply and demand factors. On the supply side the GER in primary education is over 99% and is approaching that figure in upper primary. The proportion of children completing primary and upper primary (elementary) education continues to be rise slowly from 89.44% to 91.25% in 2013-14 than it has declined to 88.71% in the year 2015-16 (OPEPA

2015-16). But the size of young age group of 15-19 years expected to continue to increase until 2025 (Toby Linden), after that this age group is falling below the current level the current level. On the demand side over the decades the return for secondary and higher secondary education has been the highest demand than elementary level of education (P Gitarani, 2014) and (Das & Mohapatra, 2013).

Table-2: Total Child Population of the Age Group of 6-14 years

Years	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
6 - 14 yrs	145132	138966	133510	148942	142090	142516	148462	148050
6 - 11yrs	91064	93177	84775	102354	94243	97262	102651	76957
11 - 14 yrs	54068	45789	48735	46588	47847	45254	45811	71093

Source: OPEPA, Odisha

Table-2 shows that total child population of the age group 6-14 years was 91064 in the year 2008-09 which has declined to 76957 in 2015-16 where as

total child population of the age group 11 - 14 years were 54068 in the year 2008-09 which has increased to 71093 in 2015-16.



Fig-1: Child Population

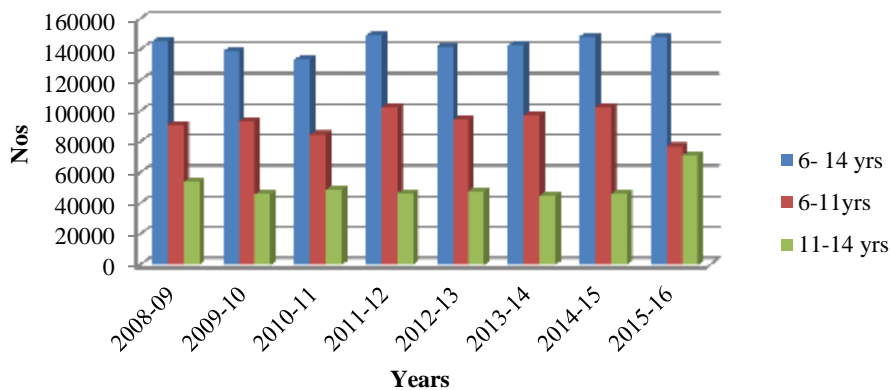


Figure-1 graphs that total child population of the Age Group 6-11 is less than total child population of the Age Group 11-14 years.

Table-3: No. of Enrolment in Elementary and Secondary Education

Years		2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Elementary	ALL	6621741	6541072	6506551	6422415	6388057	6386483	6328084
	SC	1286720	1268033	1242605	1242721	1226588	1221185	1193839
	ST	1752901	1757794	1838120	1879778	1907581	1929530	1908715
	GIRLS	3214255	3198774	3166185	3113377	3095017	3089318	3058382
Secondary	ALL	94755	1064354	11892	12004	12056	1225559	1250625
	SC	19149	19812	224220	22517	232580	23736	24431
	ST	17146	18316	215194	21491	247279	24462	25753
	GIRLS	46164	52544	599329	59732	599156	60655	62096

Source: OPEPA, Odisha

The table 3 represents the numbers of enrolment of girls, SC and ST students in elementary and secondary education from 2009-10 to 2015-16. The numbers of enrolment of sc students in elementary education has declined from 1286720 in 2009-10 to 1193839 in the year 2015-16. The numbers of enrolment of st students in elementary education has increased from 1752901 in 2009-10 to

1908715 in the year 2015-16. But the numbers of girls enrolment has come down from 3214255 in 2009-10 to 3058382 during the year 2015-16. On the other hand the numbers of girls, sc and st enrolment in secondary education has been continuously increasing from 2009-10 to 2015-16.

Table-4: No. of Enrolment in Primary, Upper Primary and Secondary Education

years	Primary	Upper Primary	Higher Secondary
2000-01	4710	1057	1083
2001-02	4769	1055	1134
2002-03	4608	953	1288
2003-04	5214	1363	1296
2004-05	5215	1383	1304
2005-06	4602	1225	1337
2006-07	4485	1817	1363
2007-08	4513	1997	1379.68
2008-09	4587	2128	1442.64
2009-10	4493	2128	1455.88



2010-11	4489	2090	1509.54
2011-12	4433	2087	1539.88
2012-13	4341	2081	1200434
2013-14	4278	2110	1205677
2014-15	4224	2163	12259
2015-16	4144	2217	1250625

Source: OPEPA, Statistical Abstract Various Years, Economic Survey Various Years of Odisha

The numbers of enrolment of students in primary, upper primary and secondary education is indicated in the table-4. The numbers of enrolment of students in primary and upper primary education has gradually declining over the years from 2000-01 to

2015-16 whereas numbers of enrolment of students in secondary education has increased from 1083 thousands in 2000-01 to 125062 thousands in 2015-16.

Table-5: Percentage of Population for 15-19 Age Group

years	Female	Male
2001-02	9.7	10.2
2002-03	10.3	10.5
2003-04	10.2	10.4
2004-05	9.7	9.5
2005-06	10	9.9
2006-07	9.5	9.3
2007-08	10	10
2008-09	9.4	9.7
2009-10	9.6	9.9
2010-11	9.8	9.1
2011-12	9.2	10.2
2012-13	9.2	9.9
2021predicted	7.6	8.0

Source: Statistical Abstract and gender disparity Odisha 2010, Directorate of Economics and Statistics, Odisha, Bhubaneswar

Fig.-2 : Percentage of Population for 15-19 Age Group

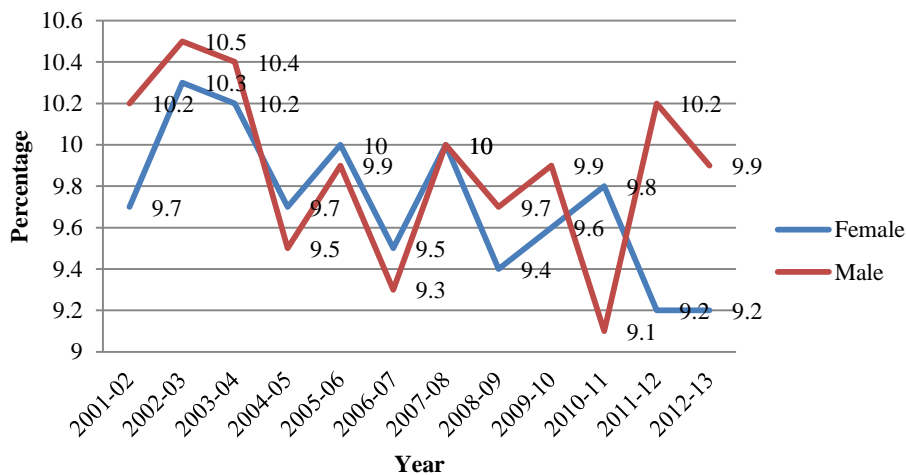




Table-6: Percentage of Population

Age (Years)	Female	Male
00-04	8.8	9.4
05-09	8.2	8.8
10-14	9.5	10
15-19	9.2	9.9
20-24	10.4	9.2
25-29	9	8
30-34	8.3	8.1
35-39	7.2	7
40-44	6.6	6.9
45-49	5.2	5.5
50-54	4.1	4.7
55-59	4.1	3.4
60-64	3.2	3.3
65-69	2.4	2.4
70+	3.8	3.5

Source: OPEPA, Statistical Abstract Various Years

Fig.-3: Percentage of Population

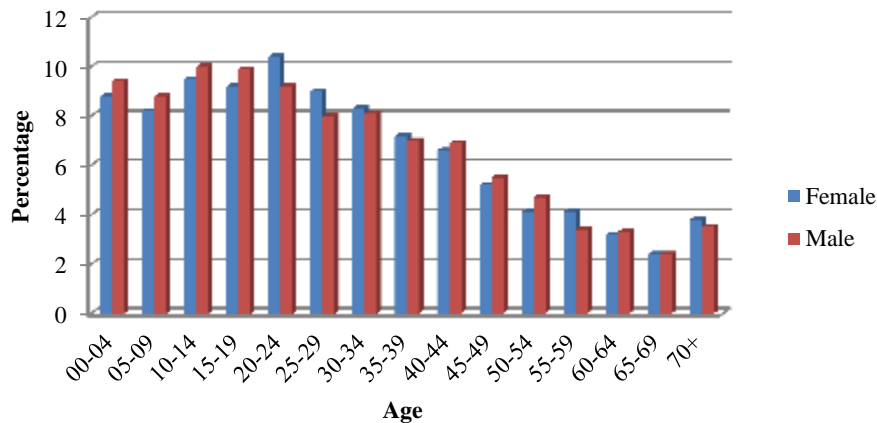


Table-7: Per 1000 Distribution of Unemployment (Age 15 Years and Above) Based on Usual Status by Educational Category of Odisha.

General education	PS+SS					
	Rural			Urban		
	Male	Female	Person	Male	Female	Person
Not literate (01)	4	99	31	12	0	7
Literate up to						
primary	123	120	122	54	0	30
Middle	278	208	259	66	103	82
Secondary	332	195	294	170	101	140
Higher secondary	56	188	92	117	17	73
Diploma/certificate course	18	0	13	134	0	75
Graduate	183	187	184	425	401	415
Post graduate	6	2	5	21	378	178
Secondary & above	595	573	589	868	897	881
All	1000	1000	1000	1000	1000	1000

Source: OPEPA, Statistical Abstract Various Years



Per 1000 distribution of unemployment (age 15 years and above) based on usual status by educational category of Odisha shows that the unemployment in elementary education category is less than secondary level. Again unemployment in higher education category such as P.G ,higher secondary, diploma/certificate course than secondary level.

1.4.2 Nos. of Primary, Upper Primary and High Schools in Odisha

Patterns of school management of secondary education are complex and vary considerably across states, and even within states between lower and higher secondary.

Table-8: Nos. of Primary, Upper Primary and High Schools in Odisha.

Years	Primary	Upper Primary	High School
2000-01	42104	12406	6155
2001-02	42824	11510	6282
2002-03	42824	11510	6811
2003-04	44416	14233	7011
2004-05	45700	15893	7408
2005-06	45890	15737	7141
2006-07	46722	17322	7361
2007-08	48402	18224	7435
2008-09	50062	19057	7506
2009-10	52972	22209	7799
2010-11	54144	24371	7974
2011-12	55106	23239	8945
2012-13	55329	24234	9350
2013-14	36399	21945	9423
2014-15	36550	22497	9491
2015-16	36760	22795	9671

Source: DPEP, Statistical Abstract Various Years, Economic Survey Various Years of Odisha

Numbers of Upper Primary and High Schools in Odisha has increased 12406 and 6155 numbers in the year 2000-01 to 22795 and 9671 respectively in 2015-16. But the numbers of primary school has increased up to 55329 in 2012-13, there after it has declined to 36760 during 2015-16. The compound growth rates of numbers of primary, upper primary and high schools in the state are and respectively.

1.4.3 Gender Disparity

The Gender Parity Index (GPI) is a socioeconomic index usually designed to measure the relative access to education of males and females. This index is released by UNESCO Girls are not discriminated against in the state in recent years as regards educational attainment. But because of the initial skewedness, gender disparity in enrolment has not been rectified so far.. As with any educational

indicator, gender disparities are conspicuous in regard to enrolment and retention. Girls' enrolment has grown at the primary stage from 24.38 lakhs in 2002-03 to 30.58 lakhs in 2015-16 and at the upper primary stage from 520394 to 1018744 from the year 2004-05 to 2011-12 and from 618.03 thousand to 735.48 thousand at the secondary stage. The rate of growth of enrolment of girls has been higher than that of boys but disparities still persist - girls still account for only 45.7 per cent of the enrolment at the elementary stage and 37.73 percent in secondary stage. Many of the equity gaps will be closed over time merely due to the expansion of secondary education. The differences across sub-populations in terms of access are almost nonexistent at the primary level and in states where overall participation rates are high (Sankar 2011).

$$\text{Gender Parity Index} : \frac{\text{No of girls enrolled}}{\text{No of boys enrolled}}$$

**Table - 9: Gender Parity Index**

Year	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Elementary Education	0.94	0.95	0.95	0.96	0.96	0.94	0.94
Secondary Education	1.00	0.98	0.97	0.98	1.04	1.01	0.99

Source: OPEPA 2015-16

The gender parity index is the ratio of number of girls to number of boys enrolled. The gender parity index in elementary and secondary education is presented in table-9. The table shows that the gender parity index in elementary level is above 0.90 In the Secondary level gender parity index is above 0.95 from the year

1.5 EQUITY**1.5.1 Numbers of Teachers in Odisha**

A well-qualified and motivated teaching force is to be seen as one of the most vital assets for educational quality

The growth in the numbers of teachers in elementary and secondary schools in Odisha is presented in the table 10.

Table - 10: Nos. of Primary, Upper Primary and High School Teachers in Odisha.

Years	Number of Teachers		
	Primary	Upper Primary	High School
2000-01	114794	40706	51570
2001-02	116231	38914	52389
2002-03	83652	41375	58136
2003-04	97175	49786	60960
2004-05	99079	31393	61008
2005-06	115351	32985	61939
2006-07	114105	39832	62094
2007-08	123765	49413	62727
2008-09	125434	55832	63303
2009-10	137833	56758	64967
2010-11	136407	53994	65289
2011-12	133262	53264	62799
2012-13	134578	53791	49389
2013-14	121193	62570	49997
2014-15	122214	74647	51078
2015-16	133541	72472	62704

Source: OPEPA, Statistical Abstract Various Years, Economic Survey Various Years of Odisha

Numbers of teachers in odisha in primary ,upper primary and high school from 2000-01 to 2015-16 are presented in the table. The compound growth rates of teachers in primary ,upper primary and high school from 2000-01 to 2015-16 are respectively. The number of primary school teachers

in Odisha increased from 1.14 lakh in 2000-01 to 1.33 lakh in 2015-16. The numbers of upper primary school teachers increased from 40.7 thousands to 72.4 thousands and the numbers of high school teachers has moved up 51.57 thousands in 2000-01 to 62.70 thousands in 2015-16.

**1.5.2 Pupil Teacher Ratio****Table - 11: Pupil Teacher Ratio**

Years	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Elementary	28.77	30.03	27.8	26.95	25.57	25.46	24.29
Secondary	28.77	30.03	27.8	26.95	23.42	23.34	23.06

Source: OPEPA 2015-16

Pupil Teacher Ratio in elementary and secondary education is presented in the table- indicates that the ratio in elementary education has declined from 28.77 percent in 2009-10 to 24.29 percent in 2015-16. In case of secondary education the ratio has moved down from 28.77 percent in 2009-10 to 23.03 percent in 2015-16

1.6 QUALITY**1.6.1 Transition, Repetition, Promotion Rate**

Higher education is of vital importance for the country, as it is a powerful tool to build knowledge-based society of the 21st Century. The effectiveness or achievement of an education system in serving its stake holders, the students is reflected by transition, retention, promotion and repetition rates. Primary to

secondary transition rate is the proportion of pupils (total, male, female) in the last grade of primary who are promoted to the first grade of secondary the following school year. Repetition rate, primary or secondary is the proportion of pupils (total, male, female) in any grade of primary or secondary in a given school year and who also attend that same grade in the following school year. Pupils who actually move backwards from one school year to the next are counted as repeaters Promotion rate, primary or secondary is the proportion of pupils (total, male, female) in any grade of primary or secondary school who are promoted to the next grade the following school year. Sometimes, this rate includes a small number of pupils who move forward more than one grade in the following school year.

Table-12: Transition, Repetition, Promotion Rate

Years		2012-13	2013-14	2014-15	2015-16
Elementary	Transition Rate (P to UP)	85.54	87.05	91.06	91.32
	Repetition Rate	3.7	2.29	0.65	0.08
	Promotion Rate	96.3	95.53	96.72	96.58
Secondary	Transition Rate (VIII to IX)	91.01	97.39	94.76	92.88
	Repetition Rate	2.94	2.13	0.32	0.31
	Promotion Rate	84.82	86.48	85.32	95.18

Source: OPEPA 2015-16

Transition Rate (P to UP), Repetition Rate and Promotion Rate in the elementary education was 85.54 percent, 3.7 percent and 96.3 percent respectively and Transition Rate (VIII to IX) Repetition Rate and Promotion Rate in the secondary education was 91.01 percent, 2.94 percent and 84.82 percent in the year 2012-13

The Board of Secondary Education, Odisha and Council of Higher Secondary Education, Orissa regulates the secondary and higher secondary education in Odisha. In addition, 182 schools affiliated to CBSE/ICSE also provide +2 level educations. The overall percentage of success rate in examinations conducted by BSE and CHSE from 2004-05 to 2016-17 is given on the table 13.

**Table – 13: Results of Secondary & Higher Secondary Education in Odisha.**

Year	Secondary Education			Higher Secondary Education		
	BSE, Odisha	CBSE, New Delhi	ICSE, New Delhi	CHSE, Odisha	CBSE, New Delhi	ICSE, New Delhi
2004-05	52.3	89.3	93.2	71.11	84.7	91
2005-	49.72	88.6	95.9	64.20	89.8	90
2006-	56.62	94	98.9	58.64	89.9	97
2007-	47.92	94.85	93.3	62.45	89.4	97
2008-	59.56	95.08	98	70.52	90.3	97
2009-	69.17	95.5	98	71.82	89.7	94.2
2010-	58.67	99.8	98.5	69.54	90.5	94.9
2011-	62.3	99.22	98.8	70.79	82.3	94.2
2012-	84.7	99.25	98.7	70.14	84.1	91.6
2013-	84.25	99.83	97.92	68.37	87.86	89.7
2014-	82.56	99.48	98.25	76.75	80.77	93.38
2015-	85	98.48	98.22	73.63	83.03	92.34

Source: Economic Survey Various Years of Odisha

The table indicates that the percentage of success rate is continuously increasing over the year's from 2004-05 to 2015-16 in high school certificate examinations but the rate was quite below the result of CBSE and CHSE result. The wide variations between state and central board examinations in secondary and higher secondary level indicate a lack of technical reliability in the examinations. Therefore, there is no state picture of the quality of secondary education, as measured by the skills and knowledge acquired by students at the end of this stage of education.

1.6.2 Dropout Rates

The problem gets more complicated as the drop-out rates, though declining, continue to be high. Nearly half the children who entered Class I drop out before reaching Class V and two-thirds of the children dropout before reaching Class VIII. Regional disparities also abound in rates of the dropouts. The 42nd round of the National Sample Survey (July 1986-June 1987) provides valuable information on the reasons for non-enrolment and dropout. However, nearly 30 percent of the persons surveyed, both in rural and urban India, gave the reason for "never enrolled" as being "not interested". The difference between the sexes here is large: a larger proportion of "never enrolled" females gave this reason in comparison with the males. The reason for being "not interested" could be considered as a demand side constraint to access: some authorities however, consider it as a supply side constraint rooted in poor facilities and quality of education.

Urban "dropouts" cited 'failure' to pass examinations as the reason for discontinuance. Again, it is a debatable point whether this is a supply side constraint due to the poor quality of education services or a demand constraint, or a combination of both. Still about 6.3 percent of urban males and 19.6 percent of urban females are illiterates. participation in household economic activity and other economic reasons. Attending to domestic chores restrained around one percent of the males, both in rural as well as urban India, from ever enrolling as students Most of the young females are denied access to education because they look after their siblings besides performing a variety of domestic, housekeeping chores. Therefore this reason was one of the major demand side constraints on access to education for the females. Because of the affirmative policies of the government, the enrolment of SCs and STs has increased considerably at the primary stage. Dropout rate is one of the downbeat indicators of educational intensification. It reflects the internal inefficiency of the education system. Dropout rate increases with movement from lower to higher class/grade. In Odisha, the dropout rates exhibit a decreasing trend over the years but still remain very high among the ST in all students. Drop-outs, though declining over the years, are significantly large among SC, ST and girls. Dropout rate in the primary or secondary is the proportion of pupils (total, male, female) in any grade of primary or secondary in a given school year and who no longer attend school the following school year.

**Table-14: Dropout Rates**

Year		2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Elementary	ALL	5.51	4.92	1.75	1.38	2.19	2.63	3.34
	SC	6.31	4.8	2.07	2.39	2.49	2.48	4.05
	ST	8.09	6.35	3.9	2.98	3.17	5.91	7.95
	GIRLS	5.67	5.09	1.42	1.32	2.07	2.74	3.15
Secondary	ALL	25.83	22.91	19.71	18.72	16.49	14.36	6.02
	SC	27.21	23.37	21.73	23.19	16.34	17.06	6.15
	ST	26.53	25.85	23.46	25.04	19.02	18.9	10.52
	GIRLS	19.28	18.64	16.44	16.21	14.61	13.74	5.18

Source: OPEPA 2015-16

The table indicates that dropout rates in secondary education has declining trend but it is still high in case of st in comparison to sc and girl students. Again dropout rates in elementary

education was lowest in the year 2012-13.the dropout rate is higher in secondary schools in comparison to elementary schools.

Table-15: Dropout Rates Among Girls, SC and ST Students in Odisha.

years	Primary			Upper Primary			High Schools		
	Girls	SC	ST	Girls	SC	ST	Girls	SC	ST
2001-02	40	51	63	60.5	58.5	73	72	76	78
2002-03	36.5	37.2	53.3	60.5	47.5	77.7	68.5	75.3	77.3
2003-04	35.4	35.6	52.4	58.6	63.1	75.8	66.7	74	75.8
2004-05	32.7	34.8	52	50.1	55	69.5	66	72.5	75.3
2005-06	18.86	19.46	23.32	28.96	29.33	37.07	64	71.7	74
2006-07	7.83	16.97	22.88	18.47	25.59	32.44	62	70.9	74
2007-08	4.89	12.54	16.89	13.49	18.8	23.83	61	70	72.8
2008-09	3.1	7.96	10.69	8.43	11.92	15.12	60.6	69.6	71.6
2009-10	3.1	4.36	6.46	8.24	8.89	9.72	55.2	64.4	69.2
2010-11	2.86	3.89	4.85	7.31	6.21	7.85	52.1	61	65.4
2011-12	0.62	2.68	3.1	2.23	1.73	4.7	51.8	60.5	64.3
2012-13	0.22	2.42	2.77	2.38	2.41	3.38	16.21	21.2	23.4
2013-14	2.05	2.39	2.71	2.08	2.58	3.63	14.6	16.3	19
2014-15	1.78	1.13	3.75	4.25	4.45	5.03	13.74	17.06	18.9
2015-16	2.92	3.3	7.07	3.52	4.8	8.82	5.18	6.15	10.52

Source: Economic Survey Various Years of Odisha

Table 15 shows that drop-out rates among girls, SCs and STs in primary and upper primary education have continuously declining up to 2013-14 but it has again started increasing over the years. But in the secondary education girls, SCs and STs drop-out rates has been continuously declining from 72, 76 and 78 percent in 2001-02 to 5.18, 6.15 and 10.52 percent respectively in the year 2015-16.

1.6.3 Status of Infrastructure Facilities in Primary and Secondary Schools

Infrastructure facilities in schools have a direct bearing on enrolment and dropout rates. The State Government is making concerted efforts with its available resources to reduce the drop-out rate. In spite of all out efforts of Government for strengthening infrastructure facilities in elementary education still a long way to achieve the target. Lack



of basic facilities at Government elementary school from 2010-11 2015-16 is presented in the table

Table-16: Status of Infrastructure in Government Elementary Schools

YEAR	GOVT. SCHOOL	NO TOILET		HAVING FURNITURE FOR		NO BUILDING	NO DRINKING WATER
		BOYS	GIRLS	ALL	SOME		
2010-11	52150	26737	36656	1076	10283	651	6002
2011-12	53094	16621	34824	1167	10824	523	2922
2012-13	53193	12588	27516	1497	11824	354	2346
2013-14	52890	12364	7497	2523	15294	267	1714
2014-15	53455	9439	6267	1182	10816	373	1207
2015-16	53252	2927	946	1168	10757	376	289

Source: OPEPA, Statistical Abstract Various Years

Expanding access will require both public and private investments, given the needs and the

distribution of management types. Govt expenditure on general education has risen rapidly over the years.

Table-17: Secondary Schools having Percentage of Infrastructural Facilities Year 2014-15

School having Building	99.48
School having drinking water facility	99.2
Schools having boys toilet	81.58
Schools having girls toilet	90.23
Schools having boundary walls	77.03
School having playground facilities	66.39
Schools having electricity connection	67.06
School with Ramp facilities	61.16
School with Library facilities	95.5
School with single classroom	1.01

Source: Odisha at a glance-2016, Directorate of Economics and Statistics, Odisha, Bhubaneswar

The table shows that the infrastructural facilities are not completely available in all the schools. Secondary schools go without Building drinking water facility boys toilet girls toilet

boundary walls playground facilities electricity connection Ramp facilities Library facilities and single classroom are

1.6.4 Govt. Revenue Expenditure on General Education

Table -18: Shows the Revenue Expenditure on General Education from the Year 2004-05 to 2015 - 16 in Odisha.

Years	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Expenditure	1954.76	2261.79	2404.18	3171.22	4386.26	5413.18	6279.84	6647.48	7050.72	8065.6	9558.74	10826.04

Source: OPEPA, Statistical Abstract Various Years

Table 18 highlighted that the Government expenditure on general education in Odisha has been

increasing over the years from 1954.76 crores in 2004-05 to 10826.04 crores during 2015 -16.

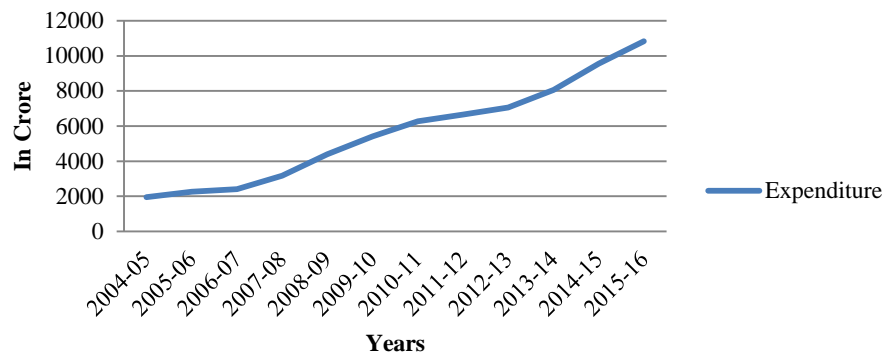
**Fig-4 :Govt. Expenditure on Education**

Figure 4 represents that govt expenditure on general education has continuously increasing trends over the years

1.7 CONCLUSION

Any government policy or programme that seek out improvements in the access, quality and equity of elementary secondary education needs to recognise two complexities: the differences between elementary and secondary education, and the various models of school governance. First, there are significant differences between elementary and secondary schools, so it cannot be assumed that lessons learnt in one sub-sector can be applied to the other. There are differences between elementary and secondary schools in terms of size, organisation, relationship to their communities/parents, and ways of assessing quality. So one should not assume that patterns in elementary education will work in secondary schools; for example, there is a lot of evidence that parents can hold elementary teachers and schools accountable, under certain conditions. But this accountability framework that produces positive results in primary education depends critically on certain features that are not present in secondary schools: (a) parents can understand measures of quality (such as basic reading and mathematical skills), (b) parents form a reasonably coherent community because the primary school draws its students from a single village or residential area, and (c) the social distance between parents and the teachers is not too great. These features do not hold in secondary education. School Management Development Committees (SMDCs) have been introduced in secondary schools following the broadly positive experience of such committees in primary education. However, considerable work will be needed to help them become effective instruments of school accountability. Second, as already noted, the management arrangements in secondary education are significantly different from those in elementary education with different combinations of government, aided and unaided schools across states and within states across lower and higher secondary

education. Any policy or programme should take account of these differences. This indicates the importance of promoting and evaluating different approaches. Given these complexities, a single solution that will be relevant and applicable to the whole of the secondary education sector and across different states is highly unlikely. Thus, there should be attempts to encourage innovation and experimentation, within a strong monitoring and evaluation framework. Improving quality of education by making all secondary schools conform to prescribed norms; removing gender, socio-economic and disability barriers; providing universal access to elementary secondary level education Dropout rates in the schools have declined but it still remains a matter of concern specifically in the tribal dominated backward regions. The growth in the number of secondary schools in the state is still low. Pupil-teacher ratio is declining over the years. Both an appreciable proportion of elementary and secondary schools in the state are deficient in basic infrastructural facilities like drinking water facilities, separate toilet for girls and boys and furnitures. It has demoralizing effect on the pupils who are discouraged to stay in the school for a longer period. The dull character of most of the schools and their poor capacity to attract students and retain them lead to wastage. Teachers should be recruited from the same area, in which they would like to serve. Hence the recruitment policy should be changed as regards appointment of teachers.

To attract men of quality, lucrative and enhanced pay-scales should be given to teachers. An attempt should be made to reduce the number of pupils per teacher. It should be 25 = 1. Spread of education among the scheduled castes and tribes, and among girls particularly in rural areas needs special attention.

The government is explicitly encouraging this in the case of the RMSA programme, having created innovation activities through which local actors and states can develop their own ideas about how to improve access, equity and quality. The lessons from



these ideas will also then seed the development of the RMSA programme

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4. ISSN 2348-3156 (Print) *International Journal of Social Science and Humanities Research* ISSN 2348-3164 (online) Vol. 4, Issue 1, pp: (300-305), Month: January - March 2016, Available at: www.researchpublish.com Page | 300 *Research Publish Journals Secondary Education in India: Issues and Concerns Dr. Priti Chaudhari Assistant Professor in, Department of Education [CASE], Faculty of Education and Psychology, The Maharaja Sayajirao University of Baroda, Vadodara- 390002.*
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DIDACTICAL METHODS OF ORGANIZATION OF PROBLEM LEARNING PROCESS

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ANNOTATION

This article provides didactic ways of organizing the process of problem learning, as well as the essence of problem learning boils down to the fact that the nature and structure of the student's cognitive activity radically changes in the learning process, leading to the development of the creative potential of the student's personality. The main and characteristic feature of problem learning is a problem situation.

KEY WORDS: *problem-based learning, independent activity, skills, ability, thinking process, the essence of problem-based learning, development of the ability to self-study, self-education.*

DISCUSSION

Problem-based learning is usually understood as such an organization of training sessions, which involves the creation of problem situations under the guidance of a teacher and the active independent activity of students to resolve them.

Problem-based learning can contribute to the implementation of two goals: the first goal is to form the necessary system of knowledge, abilities and skills in students; the second goal is to achieve a high level of development of schoolchildren, the development of the ability to self-study, self-education[1].

It is important to note one more of the important goals of problem learning - to form a special style of mental activity, research activity and student independence. The peculiarity of problem learning is that it seeks to maximize the use of psychology data on the close relationship between the processes of learning, cognition, research and thinking[2].

The essence of problem-based learning boils down to the fact that in the learning process, the nature and structure of the student's cognitive activity radically changes, leading to the development of the creative potential of the student's personality. The main and characteristic feature of problem learning is a problem situation[3].

Its creation is based on the following provisions of modern psychology:

- the process of thinking has its source in a problem situation;
- problem thinking is carried out, first of all, as a process of solving a problem;
- the conditions for the development of thinking is the acquisition of new knowledge by solving a problem;
- patterns of thinking and patterns of assimilation of new knowledge largely coincide.

In problem learning, the teacher creates a problem situation, directs students to solve it, organizes the search for a solution. Thus, the student is placed in the position of the subject of his learning, and as a result, new knowledge is formed in him, he has new ways of action. The difficulty in managing problem learning is that the emergence of a problem situation is an individual act, therefore, the teacher is required to use a differentiated and individual approach. If, in traditional teaching, the teacher sets out theoretical propositions in a ready-made form, then in problem-based teaching he brings students to a contradiction and invites them to find a way to solve it themselves, collides the contradictions of practical activity, expresses different points of view on the same issue. Typical tasks of problem learning: consider the phenomenon from different positions, make comparisons, generalizations, formulate conclusions from the situation, compare facts, formulate specific questions ourselves[4].

In general, we can talk about six didactic ways of organizing the process of problem learning (that is, general methods), which are three types of



presentation of educational material by a teacher and three types of organization of independent learning activities of students:

- 1) monologue;
- 2) reasoning;
- 3) dialogical;
- 4) heuristic;
- 5) research;
- 6) the method of programmed tasks.

With the monologue method, the teacher himself explains the essence of new concepts, facts, gives students ready-made conclusions of science. With the method of reasoning presentation, the first option is to create a problem situation, the teacher analyzes the factual material, draws conclusions and generalizations. The second option is that by setting out the topic, the teacher tries by searching and discovering a scientist, that is, he, as it were, creates an artificial logic of scientific search by building judgments and inferences based on the logic of the cognitive process. Form - conversation lecture[5].

With the method of dialogical presentation, the teacher, in the problem situation created by him, poses the problem himself and solves it, but with the help of the students. The basics of the form of teaching - search conversation, story[6].

With the method of heuristic tasks, the essence of the heuristic method lies in the fact that the discovery of a new law, rule, and the like is done not by the teacher, with the participation of students, but by the students themselves under the guidance and with the help of the teacher. The form of implementation of this method is a combination of heuristic conversation and the solution of problematic tasks and tasks[7].

With the method of research tasks, it is organized by the teacher by setting theoretical and practical research tasks for students with a high level of problematicity. The student performs logical operations independently, revealing the essence of a new concept and a new method of action. According to the form of organization, research work can be varied: student experiment, excursion and collection of facts, conversations with the population, preparation of a report, design and modulation.

With the method of programmed tasks, in which students, with the help of specially prepared didactic means, can acquire new knowledge and new actions.

The goal of the problem type of teaching is not only the assimilation of the results of scientific knowledge, the system of knowledge, but also the very way of the process of obtaining these results, the formation of the student's cognitive initiative and the development of his creative abilities. The goal of the traditional type of education is the assimilation of the results of scientific knowledge, equipping students with knowledge of the basics of science, instilling in them the appropriate skills and abilities.

At the heart of the teacher's organization of explanatory and illustrative teaching is the principle of transferring to students the ready-made conclusions of science.

The full cycle of mental actions from the emergence of a problem situation to solving the problem has several stages.

- the emergence of a problem situation,
- realizing the essence of the difficulty and posing the problem,
- finding a solution by guessing or making assumptions and justifying the hypothesis,
- proof of the hypothesis,
- checking the correctness of solving problems.

The thinking activity of students is stimulated by asking questions. The teacher's question should be complex enough to cause difficulty for students, and at the same time, feasible for finding an answer on their own.

As studies have shown, it is possible to identify the most typical types of problem situations for pedagogical practice, common to all subjects. The first type: a problem situation arises if students do not know how to solve the problem. The second type: problematic situations arise when students are faced with the need to use previously acquired knowledge in new practical conditions.

The third type: a problem situation easily arises if there is a contradiction between the theoretically possible way of solving the problem and the practical impracticability of the chosen method. The fourth type: a problematic situation arises when there are contradictions between the practically achieved result of completing an educational task and the lack of students' knowledge for theoretical justification.

The process of posing educational problems requires knowledge of not only logical-psychological and linguistic, but also didactic rules for posing problems.

The teacher, before the students, puts before them the problems they have already encountered. In doing so, he takes into account the following:

- a) an algorithm for solving previously solved problems can be used to solve new difficult problem problems;
- b) solving previously encountered problems, but not solved due to lack of sufficient knowledge;
- c) repetition of the passed material;
- d) the problems previously solved by the team can be used for a secondary setting in front of weak students for an independent solution.

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CURRENT APPROACHES IN IN-VITRO PRODUCTION OF SECONDARY METABOLITES FROM MEDICINAL PLANTS

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ABSTRACT

Plants are a vital source for producing drugs of medicinal value. Today many unique chemicals which are extracted from plants are important drugs, that are currently used in many countries across the globe. Majority of the drugs we see today are simple synthetic modifications or artificial copies of the naturally obtained substances. As of today, pharmaceutically significant secondary metabolites are isolated from wild or cultivated plants because their production is not feasible be it economically or in sense of the efforts needed for it. The ever growing commercial importance of secondary metabolites in recent years has lead to a great interest in secondary metabolism, particularly in the possibility of using Plant tissue culture technology, which was put forth in the latter half of the 20th century for research purposes. Different strategies, especially the idea of using an in-vitro system, has been extensively studied to improve the production of plant chemicals and secondary metabolites. In this paper, we will focus upon and review different processes to obtain some of the secondary metabolites from medicinal plant tissue/cell cultures.



INTRODUCTION

Medicinal plants are undoubtedly the most exclusive and important source of drugs for most of the world's population. Many higher plants are major sources of natural products used as pharmaceuticals, agrochemicals, flavour and fragrance ingredients, food additives, and pesticides. In order to find alternatives to produce various desirable medicinal compounds from plants, various approaches, specifically PTC (plant tissue cultures), has many potential options as a supplement to traditional agriculture in the industrial production of plant metabolites. The utilization of plant cells for the production of natural and recombinant compounds of various commercial interest has gained a lot of attention over past years. These secondary metabolites play a major role in the adaptation of plants to their respective environment and also act as an important source in pharmaceuticals.

PTC represents a source of essential secondary metabolites that is an option to be used as food additives and pharmaceuticals. The synthesis of phytochemicals by the cell cultures in contrast to those in plants is independent of environmental conditions and quality fluctuations. Many a times, the chemical synthesis of metabolites becomes difficult due to many reasons, especially the financial aspect. Moreover, the artificial food additives are not readily accepted by the consumers when compared to natural food additives. There are various advantages of a cell culture system when compared to the conventional cultivation of whole plants like the useful compounds which can be produced under proper, well-maintained and suitable conditions independent of climatic changes. The cultured cells should have no participation of microbes and insects. The cells of any plants, can be easily multiplied to yield specific metabolites with the help of automated control of cell growth that would reduce of cost of labour and thus improve the productivity of organic substances that can be extracted from callus cultures.

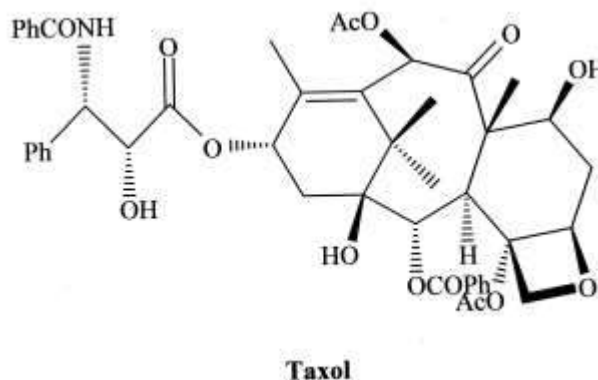
Due to the recent advances, research in the areas of tissue culture technology for production have bloomed immensely beyond expectations. The combined research in various fields of establishment of in-vitro cultures, development of technologies for product recovery and targeting the process of metabolite synthesis can exploit the potential of the plant cells as a source of secondary metabolites. Major important findings have been reported for a huge variety of medicinally valuable substances, some of which could be produced on an industrial scale in few years.

Principal Review

Tissue Cultures Producing Pharmaceutical Products of Interest with the immense research work done in the area of plant tissue culture, the production of various pharmaceutical substances for new therapeutics is possible in large quantities. The pharmaceuticals like alkaloids, phenolics, steroids, saponins, terpenoids, and amino acids can be produced in desired quantities by cell cultures. Successful attempts to produce some of these precious pharmaceuticals are illustrated.

Taxol

Taxol (paclitaxel), which is found in the bark of the Taxus tree is a complex diterpene alkaloid. It is used as an anticancer agent and is considered one of the most promising known because of its unique mode of action on the microtubular cell system. Researches are still going on to find better methods of production of taxol various Taxus species cells in cultures because of its high commercial value and the

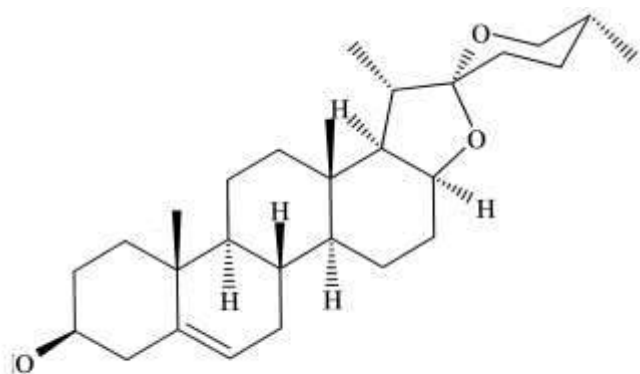


scarcity of the Taxus tree.

In 1989, Christen et al. were the first to report the production of taxol (paclitaxel) by Taxus cell cultures. Fett-Neto et al. (1995) did a study on nutrients and other factors on paclitaxel production by *T. cuspidata* cell cultures and got a 0.02% yield on a dry weight basis.

Diosgenin

Diosgenin is very important to the pharmaceutical industry as it is a precursor for the chemical synthesis of steroidal drugs. In 1983, Tal et al. use the cell cultures of *Dioscorea deltoidea* to produce diosgenin. They found that nitrogen and carbon levels considerably influenced diosgenin accumulation in one cell line.

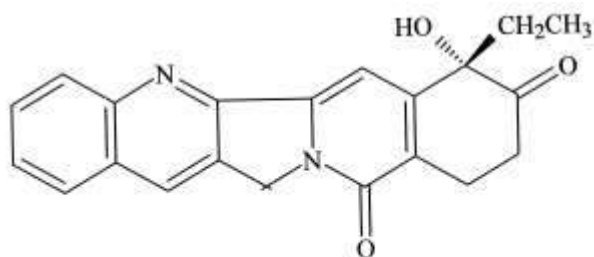
**Diosgenin**

Camptothecin

Camptothecin is a potent antitumor alkaloid. It was isolated from *Camptotheca acuminata*. 10-Hydroxycamptothecin is a promising derivative of camptothecin and it is in clinical trials in the US. Sakato and Misawa (1974) produced camptothecin at about 0.0025% on a dry weight basis by inducing *C. acuminata* callus on MS medium that contained 0.2 mg/l 2,4-D and 1 mg/l kinetin. They developed liquid cultures in the presence of L-tryptophan, gibberellin, and conditioned medium.

Studies on In Vitro Cultures and Production of Important Secondary Metabolites in a Laboratory:

There are several types of cell culture methods that are used for producing the important bioactive secondary metabolites, mostly cell suspension cultures are preferred for industry-scale production

**Camptothecine**

because of their rapid growth cycles. Therefore, cell suspensions are used to generate large amounts of cells for qualitative or quantitative analysis of metabolism and growth responses of novel chemicals. Based on the great results in the production of medical compounds which were reported above by using cell suspension cultures, this method was successfully used for producing taxol from *Taxus mairei*, imperatorin from *Angelica dahurica*, and diosgenin from *Dioscorea doryophora*

along with Diosgenin from *Dioscorea doryophora* in the lab. The work which was carried out at the lab is summarized below.

Taxol Production from *Taxus mairei* by Cell Suspension Cultures

Taxol is a complex diterpene alkaloid. It is an anticancer drug that was found in 1971, by Wani et al. It was found from the Pacific yew tree, *Taxus brevifolia*. At present this drug is approved for the clinical treatment of breast and ovarian cancer by the FDA, USA. It is also effective against lung cancer, malignant melanoma, and other solid tumors. However, its supply is limited as it depends on extraction from the bark of yew trees. On a dry weight basis, the thin bark of the yew tree has only 0.001% taxol. A century-old tree yields 3kgs of bark on an average, which gives around 300 mg of taxol which is just a single dose in the cancer treatment course. Because of its scarcity of slow-growing trees and relative slow taxol content there raised a need to look for alternate sources or methods to meet the increasing demand for the drug. The industrial-scale production of this drug seemed impossible because of the complexity in the chemical structure of this molecule. The plant cell culture of *Taxus* spp. is considered to be one of the possible approaches for providing a stable supply of taxol and other related taxane compounds.

To exploit the source of taxol, different tissues of *Taxus mairei* were used. *Taxus mairei* is a species found in Taiwan at 2,000 m above sea level. The extracts of leaf and bark tissues were analyzed using HPLC to find the content of taxol and taxol-related compounds. It was found that the amounts of taxol and taxol-related compounds vary in individual plants and the principal components in leaf extract were higher than those in bark extracts such as baccatin III, docetaxel, and 10-deacetyl baccatin. *Taxus mairei* calli were induced from the stem and needle explants on Gamborg's B5 medium which was supplemented with 2 mg/l NAA or 2,4-D. Different cell lines were established using a needle and stem-derived callus. After 6 weeks of incubation and the precursor feeding, one of the cell lines produced 200 mg taxol per liter of cell suspension culture.

Diosgenin Production from *Dioscorea doryophora* by Cell Suspension Culture:

In Chinese traditional medicine, *Dioscorea* spp. (*Dioscoreaceae*) are frequently used as a tonic. *Dioscorea doryophora* Hance tubers have high demand as they are used as crude drugs and food. The most active ingredient which was discovered in the tuber was diosgenin. It can be used as a precursor for a lot of important medicinal steroids, like prednisolone, norethisterone, dexamethasone, and methenolone,



For increasing the diosgenin yield and facilitating the purification process, a cell suspension culture of *Dioscorea doryophora* Hance was established. Cell suspension cultures were acquired from stem node and micro tuber derived callus in liquid culture medium supplemented with 0.1 mg/l 2,4-D, 3% sucrose and was incubated on a rotary shaker at 120 rpm. Although for the growth of cell suspension culture, 6% sucrose was found to be optimum, cells cultured in a 3% sucrose medium were observed to

produce more diosgenin. HPLC analysis revealed that both microtuber and stem-node derived suspension cells had diosgenin. The micro tuber derived cell suspension culture had 3.2% diosgenin per gram dry weight while the stem-node derived cultures had only 0.3%. As the amount of diosgenin obtained from a tuber-derived cell suspension is high and comparable with that found in the intact tuber, a cell suspension culture can be utilized for the production of diosgenin.

CONCLUSIONS & FUTURE PERSPECTIVES

Recent advances in biological science, specifically methods for culturing plant cells culture provides new means for the commercial processing of rare plants and the chemicals they lay out. Basically the pros of such methods is that it can eventually provide an uninterrupted, reliable source of standard products. Also the important advantages of cell cultures include synthesis of bioactive secondary metabolites, running in controlled environment, independently from climate and soil conditions.

In recent years, the application of plant cell culture is due to an improved understanding of the secondary metabolite pathway. Also in our review paper we have basically understood the nature of

plant cells in in vitro cultures, case by case studies has been used to describe the problems occurring in the production of secondary metabolites from plant cell culture. Within last few years, considerable progress has been improving in secondary metabolite production from cultured plant cell. Such new technologies will supply to extend and to continue usefulness of higher plants as sustainable sources of chemicals, especially medicinal compounds.

In future, we wish that intensification efforts will be made in this field and thus would lead to successful biotechnological production of particular, valuable, and would also yet to discover unknown plant chemical.

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EMPLOYEE JOB SATISFACTION THROUGH WORKING CONDITIONS

(A STUDY WITH REFERENCE TO SELECT PUBLIC SECTOR BANKS IN THE COASTAL REGION OF ANDHRA PRADESH)

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ABSTRACT

Job satisfaction is a complex concept that is influenced by many factors. The aim of this paper is to analyze the impact of working conditions to job satisfaction. For that purpose, the empirical research has been conducted in select banks. The study has analyzed the various reasons for choosing select public sector banks among the various banks, the working condition of the select bank employees with the level of job satisfaction among the various group of respondents. The study has tested the with the help of Percentage analysis, Chi-square, ANOVA, and Multiple Regression. All the chi-square, ANOVA, and Multiple Regression tested at 5% level of significance. This paper is focused on the observation of the importance of working conditions to employees' job satisfaction

KEYWORDS: *Employees, Banks, Working Conditions, Job Satisfaction, Need, Objectives, Methodology, Analysis, Findings and Suggestions.*

INTRODUCTION

Job satisfaction shows how much an employee likes his work as well as the level of his preoccupation with work. Generally, it can be stated that job satisfaction is a sense of comfort and positive experience that an employee has related to his/her job. Job satisfaction can affect work behaviour, and through that, the organizational performance. For a long time, job satisfaction has been viewed as a unique concept, but today it is seen as a very complex cluster of attitudes towards different aspects of the work (Rollinson et al., 1998).

NEED FOR THE STUDY

The conditions under which a job is performed can be different - from those completely comfortable to those very difficult and dangerous to employees' life and health. Working conditions can be influenced by: external factors that include climate - meteorological conditions, temperature, humidity, drafts, lighting in the workplace, noise and interference, gases, radiation, dust, smoke and other harmful factors; subjective factors that include gender and age of the worker, fatigue, monotony, unfavourable posture during work,



etc.; factors related to the organization of production such as duration of the work shift, work schedule, working time, work pace, excessive strain etc.

This study aims to identify the working conditions influence on job satisfaction and offer practical suggestions to increase the job satisfaction of the banking professionals. After reviewing the literature there are various studies that have been conducted on employee job satisfaction and working conditions in various organizations. Most of the studies reviewed have been conducted either in the urban industrial centers or in the rural unorganized sector. But the areas typical to Districts which are economically backward areas of coastal Andhra Pradesh have not been taken as the area of study for any other studies reviewed herein. No comprehensive study in this area has been taken up in the specific sense of one of the public sector banks in India. Hence, this study will fill in that gap and provide the much-needed organizational relevance to academic research.

OBJECTIVES OF THE STUDY

1. To analyse the perceptions of the respondents on employee job satisfaction through working conditions in the select branches of public sector banks in coastal Andhra Pradesh.
2. To offer suitable suggestions to improve job satisfaction levels through proper working conditions in the banking industry.

METHODOLOGY

Keeping the objectives of the study in mind, the following methodology has been adopted for conducting the present study. Both primary and secondary sources of data have been used for this study.

(i) Primary Data:

The content of the primary data is gathered from the employees of various factors of select Public Sector Banks in coastal Andhra Pradesh through a structured questionnaire aimed at various aspects as a part of the study.

(ii) Secondary Data:

The content of the secondary data required for the study is obtained from journals, magazines, textbooks, and annual reports, records, personal manual of select Public Sector Banks.

SAMPLING

The simple random sampling method was adopted to select a sample size in selected organization i.e., coastal Andhra Pradesh on the basis of the simple random sampling method, the questionnaires were administered to 554 total employees of urban and rural branches of select public sector banks. Out of these, approximately 50 employees were not filled the questionnaires and 54 questionnaires were incomplete. So, the sample was selected as 450 which are taken from both Urban and Rural Banks of select Public Sector Banks in coastal Andhra Pradesh.

HYPOTHESIS

H_0 : Working condition does not affect the level of job satisfaction.

ANALYSIS

A. DEMOGRAPHIC PROFILE OF THE RESPONDENTS

Gender of the respondents

The discussion given below provides detailed information on the gender of the sample respondents in the select public sector bank employees.

Gender of the respondents

Gender	No of Respondents	Percentage
MALE	293	65.2
FEMALE	157	34.8
Total	450	100

Source: Primary data

The table represents the gender profile of respondents being selected for the study. Most of the respondents were male with the total of 65.2 percent and further, the female samples were 34.8 in the study.

Age of the respondents

Age is the primary factor in determining the attitude of the people. The opinion of the respondents towards job satisfaction differs according to their age. Table below presents the age wise distribution of the sample respondents.

**Age of the respondents**

AGE	No of Respondents	Percentage
21 – 30 Years	126	28.0
31 – 40	108	24.0
41 – 50	90	20.0
51 – 60	126	28.0
Total	450	100.0

Source: Primary data

The above table depicts the age profile of respondents taken for the study from the sample. It shows the most of the respondents belongs to the category of both 21 – 30 years and 51 – 60 years. These categories comprise 56 percentage of the total sample. The category 31 – 40 years comprises 24 percent and the category of age between 41-50 years has the low

sample of 20 percent in it.

Marital Status of the respondents

The discussion provided below details the marital status of the sample respondents

Marital Status of the respondents

Marital Status	No of Respondents	Percentage
Married	239	53.1
Un-Married	193	42.8
Widow	12	2.6
Divorced	06	1.3
Total	450	100.0

Source: Field Survey

The marital status of the respondents used for the study is being shown in the table above, 53.1 percent of the respondents were married, which is more than half of the total sample, 42.08 percent of the respondents were unmarried, 2.6 percent are widows and only 1.3 percent are divorced during the study period.

Educational Qualification of the respondents

The below table discussed the distribution of respondents based on educational qualification.

Educational Qualification of the respondents

Educational Qualification	No of Respondents	Percentage
Below SSC / SSC	58	13.0
Inter	90	20.0
Graduate	186	41.3
Post Graduate	78	17.3
Technical	38	8.4
Total	450	100.0

Source: Field Survey

The educational qualification of the respondents of the study is represented in the table above, a total of 41.3 percent of the respondents were graduate, followed by 20 percent of the respondents completed post graduation, 17.3 percent being postgraduate and 8.4 percent is the technical category during the study period.

Nature of the job in the Bank

The discussion given below provides detailed information on the status / nature of the job they are doing in Banks.

**Job nature of the respondents**

Nature of the Job	No of Respondents	Percentage
Manager / Officer	254	56.59
Clerk / Cashier	131	28.92
Attender	65	14.49
Total	450	100

Source: Field Survey

The table above, evident that the job nature of respondents in the study. A total of 56.59 percent of the respondents belonged to Manager / Officer Cadre, 28.92 percent are clerk/cashier and a total of 14.49 percent of the respondents were attendees during the study period.

Experience

The table below has shown the length of the services of the select Public Sector Bank employees.

21.7 percent of the respondents in the present study have more than thirty years of experience, (28.4 percent) of the respondents have an experience accounted 00 – 05 years, 16.22 percent of the respondents have 21 – 25 years of experience, 13.1 percent of the respondents have 21 – 25 years of experience in their job, only a total of 12.1 percent of the respondents are in the length of service from 11 – 20 years. Hence, it is observed that, the majority of the respondents are experienced in their hand.

Experience of Employees

Length of the service	No of Respondents	Percentage
00 – 05 years	128	28.4
06 – 10 years	37	8.20
11 – 15 years	31	6.80
16 – 20 years	24	5.30
21 – 25 years	59	13.10
26 – 30 years	73	16.22
Above 30 years	98	21.70
Total	450	100

*Source: Field Survey***B. ANALYSIS ON EMPLOYEE JOB SATISFACTION ON WORKING CONDITIONS**

The study is trying to know the level satisfaction towards working conditions with various demographical factors;

1. Age and the level of satisfaction towards working condition

The following table depicts the ANOVA analysis between Age and level of job satisfaction towards the factor 'working condition'.

ANOVA results for level of Job satisfaction on working conditions

		Sum of the Squares	d.f	Mean Squares	F-Value	Sig.
Branch has enough staff to discharge the work	Between Groups	417.806	3	139.269	147.289	.000 *
	Within Groups	421.714	446	.946		
	Total	839.520	449			
Branch has comfortable seating, lighting ventilation and toilet facilities	Between Groups	165.394	3	55.131	19.692	.000 *
	Within Groups	1248.686	446	2.800		
	Total	1414.080	449			



Assignment of work load is reasonable	Between Groups	211.063	3	70.354	52.962	.000 *
	Within Groups	592.457	446	1.328		
	Total	803.520	449			
Working hours are convenient	Between Groups	142.577	3	47.526	48.422	.000 *
	Within Groups	437.743	446	.981		
	Total	580.320	449			
Reasonable break time during working hours	Between Groups	139.886	3	46.629	40.928	.000 *
	Within Groups	508.114	446	1.139		
	Total	648.000	449			

The table indicates the ANOVA analysis of Age and level of satisfaction towards the working condition and its results. It is inferred from the table that all the selected factors namely Branch has enough staff to discharge the work, Branch has comfortable seating lighting, Ventilation, and Toilet facilities, Assignment of workload is reasonable, Working hours are convenient, Reasonable break time during working hours have their p-value lesser than 5 per cent level of significance. Hence, it is found that, there is a

significant difference between Age and level of satisfaction on working condition.

2. Gender and the level of satisfaction towards working condition

The following table- depicts the ANOVA analysis between Gender and level of job satisfaction towards the factor ‘working condition’.

ANOVA results for level of Job satisfaction on working conditions

		Sum of the Squares	d.f	Mean Squares	F-Value	Sig.
Branch has enough staff to discharge the work	Between Groups	52.920	1	52.920	30.140	.000 *
	Within Groups	786.600	448	1.756		
	Total	839.520	449			
Branch has comfortable seating lighting ventilation and toilet facilities	Between Groups	122.880	1	122.880	42.635	.000 *
	Within Groups	1291.200	448	2.882		
	Total	1414.080	449			
Assignment of work load is reasonable	Between Groups	30.720	1	30.720	17.809	.000 *
	Within Groups	772.800	448	1.725		
	Total	803.520	449			
Working hours are convenient	Between Groups	.120	1	.120	.093	.761
	Within Groups	580.200	448	1.295		
	Total	580.320	449			
Reasonable break time during working hours	Between Groups	108.000	1	108.000	89.600	.000 *
	Within Groups	540.000	448	1.205		
	Total	648.000	449			



The table- indicates the ANOVA analysis of Gender and level of satisfaction towards the working condition and its results. It is inferred from the table that the factors namely Branch has enough staff to discharge the work, Branch has comfortable seating lighting, Ventilation, and Toilet facilities, Assignment of workload is reasonable, Reasonable break time during working hours have their p-value lesser than 5 percent level of significance. Therefore, it is found there is a significant difference between Gender and working condition except for convenient working hours. But, the p-value of the factor ‘working hours are

convenient’ is more than to 0.05. Hence, there are no differences in the level of satisfaction on working hours.

3. Marital status and the level of satisfaction towards working Condition

The following table-depicts the ANOVA analysis between marital status and level of job satisfaction towards the factor ‘working condition’.

ANOVA results for level of job satisfaction on working conditions

		Sum of the Squares	d.f	Mean Squares	F-Value	Sig.
Branch has enough staff to discharge the work	Between Groups	39.572	1	39.572	22.162	.000 *
	Within Groups	799.948	448	1.786		
	Total	839.520	449			
Branch has comfortable seating lighting ventilation and toilet facilities	Between Groups	1.197	1	1.197	.380	.538
	Within Groups	1412.883	448	3.154		
	Total	1414.080	449			
Assignment of work load is reasonable	Between Groups	220.156	1	220.156	169.071	.000 *
	Within Groups	583.364	448	1.302		
	Total	803.520	449			
Working hours are convenient	Between Groups	40.437	1	40.437	33.555	.000 *
	Within Groups	539.883	448	1.205		
	Total	580.320	449			
Reasonable break time during working hours	Between Groups	29.922	1	29.922	21.688	.000 *
	Within Groups	618.078	448	1.380		
	Total	648.000	449			

The table- indicates the ANOVA analysis of Marital Status and level of satisfaction towards the working condition and its results. It is inferred from the table that the factors namely Branch has enough staff to discharge the work, Branch has comfortable seating lighting, Assignment of workload is reasonable, Working hours are convenient, Reasonable break time during working hours have their p-value lesser than 5 percent level of significance.

Hence, it is found there is a significant difference between Age and working condition. Rest of the factor namely Ventilation and Toilet facilities has

its p-value greater than 5 percent level of significance and found that the null hypothesis is accepted and there is no significant difference between marital status and level of satisfaction towards working condition.

4. Educational Qualification and the level of satisfaction towards working condition

The following table- depicts the ANOVA analysis between educational qualifications and level of job satisfaction towards the factor ‘working condition’.

**ANOVA results for level of Job satisfaction on working conditions**

		Sum of the Squares	d.f	Mean Squares	F-Value	Sig.
Branch has enough staff to discharge the work	Between Groups	59.302	3	19.767	11.300	.000 *
	Within Groups	780.218	446	1.749		
	Total	839.520	449			
Branch has comfortable seating lighting ventilation and toilet facilities	Between Groups	137.693	3	45.898	16.038	.000 *
	Within Groups	1276.387	446	2.862		
	Total	1414.080	449			
Assignment of work load is reasonable	Between Groups	48.899	3	16.300	9.634	.000 *
	Within Groups	754.621	446	1.692		
	Total	803.520	449			
Working hours are convenient	Between Groups	53.201	3	17.734	15.004	.000 *
	Within Groups	527.119	446	1.182		
	Total	580.320	449			
Reasonable Break time during working hours	Between Groups	24.288	3	8.096	5.789	.001 *
	Within Groups	623.712	446	1.398		
	Total	648.000	449			

The table- indicates the ANOVA analysis of Educational qualification and level of satisfaction towards the working condition and its results. It is inferred from the table that the factors namely Branch has enough staff to discharge the work, Branch has comfortable seating lighting, Ventilation, and Toilet facilities, Assignment of workload is reasonable, working hours are convenient, Reasonable break time during working hours have their p-value lesser than 5 percent level of significance. Hence, it is found there is

a significant difference between educational qualification and working condition.

5. Nature of the Job and the level of satisfaction towards working condition

The following table- depicts the ANOVA analysis between Nature of the job and level of job satisfaction towards the factor 'working condition'.

ANOVA results for level of Job satisfaction on working conditions

		Sum of the Squares	d.f	Mean Squares	F-Value	Sig.
Branch has enough staff to discharge the work	Between Groups	59.982	1	59.982	34.471	.000 *
	Within Groups	779.538	448	1.740		
	Total	839.520	449			
Branch has comfortable seating lighting ventilation and toilet facilities	Between Groups	146.234	1	146.234	51.672	.000 *
	Within Groups	1267.846	448	2.830		
	Total	1414.080	449			



Assignment of work load is reasonable	Between Groups	56.866	1	56.866	34.120	.000 *
	Within Groups	746.654	448	1.667		
	Total	803.520	449			
Working hours are convenient	Between Groups	21.974	1	21.974	17.631	.000 *
	Within Groups	558.346	448	1.246		
	Total	580.320	449			
Reasonable break time during working hours	Between Groups	37.385	1	37.385	27.429	.000 *
	Within Groups	610.615	448	1.363		
	Total	648.000	449			

The table- indicates the ANOVA analysis of Nature of the job and level of satisfaction towards the working condition and its results. It is inferred from the table that the factors namely Branch has enough staff to discharge the work, Branch has comfortable seating lighting, Ventilation, and Toilet facilities, Assignment of workload is reasonable, Working hours are convenient, Reasonable break time during working hours have their p-value lesser than 5 percent level of significance. Hence, there is a significant difference

between the nature of the job and working condition.

6. Experience and the level of satisfaction towards working condition

The following table- depicts the ANOVA analysis between experience and level of job satisfaction towards the factor ‘working condition’.

ANOVA results for level of Job satisfaction on working conditions

		Sum of the Squares	d.f	Mean Squares	F-Value	Sig.
Branch has enough staff to discharge the work	Between Groups	76.256	2	38.128	22.329	.000 *
	Within Groups	763.264	447	1.708		
	Total	839.520	449			
Branch has comfortable seating lighting ventilation and toilet facilities	Between Groups	49.166	2	24.583	8.051	.000 *
	Within Groups	1364.914	447	3.053		
	Total	1414.080	449			
Assignment of work load is reasonable	Between Groups	101.006	2	50.503	32.134	.000 *
	Within Groups	702.514	447	1.572		
	Total	803.520	449			
Working hours are convenient	Between Groups	85.513	2	42.756	38.625	.000 *
	Within Groups	494.807	447	1.107		
	Total	580.320	449			
Reasonable break time during working hours	Between Groups	27.193	2	13.596	9.790	.000 *
	Within Groups	620.807	447	1.389		
	Total	648.000	449			



The table- indicates the ANOVA analysis of experience and level of satisfaction towards the working condition and its results. It is inferred from the table that the factors namely Branch has enough staff to discharge the work, Branch has comfortable seating lighting, Ventilation, and Toilet facilities, Assignment of workload is reasonable, Working hours are convenient, Reasonable break time during working hours have their p-value lesser than 5 percent level of significance. Hence, it is found there is a significant difference between Experience and working condition.

MAJOR FINDINGS

- 1 The study shows that the ANOVA analysis of Age and level of satisfaction towards the working condition and its results. It is inferred that all the selected factors namely Branch has enough staff to discharge the work, Branch has comfortable seating lighting, Ventilation, and Toilet facilities, Assignment of workload is reasonable, Working hours are convenient, Reasonable break time during working hours have their p-value lesser than 5 per cent level of significance. Hence, it is found that, there is a significant difference between Age and level of satisfaction on working condition.
- 2 The study indicates that the ANOVA analysis of Gender and level of satisfaction towards the working condition and its results. It is inferred that the factors namely Branch has enough staff to discharge the work, Branch has comfortable seating lighting, Ventilation, and Toilet facilities, Assignment of workload is reasonable, Reasonable break time during working hours have their p-value lesser than 5 percent level of significance. Therefore, it is found there is a significant difference between Gender and working condition except for convenient working hours. But, the p-value of the factor 'working hours are convenient' is more than to 0.05. Hence, there are no differences in the level of satisfaction on working hours.
- 3 It can be observed from the study that the ANOVA analysis of Marital Status and level of satisfaction towards the working condition and its results. It is inferred that the factors namely Branch has enough staff to discharge the work, Branch has comfortable seating lighting, Assignment of workload is reasonable, Working hours are convenient, Reasonable break time during working hours have their p-value lesser than 5 percent level of significance. Hence, it is found there is a significant difference between Age and working condition. Rest of the factor

namely Ventilation and Toilet facilities has its p-value greater than 5 percent level of significance and found that the null hypothesis is accepted and there is no significant difference between marital status and level of satisfaction towards working condition.

- 4 The study describes that the ANOVA analysis of Educational qualification and level of satisfaction towards the working condition and its results. It is inferred that the factors namely Branch has enough staff to discharge the work, Branch has comfortable seating lighting, Ventilation, and Toilet facilities, Assignment of workload is reasonable, Working hours are convenient, Reasonable break time during working hours have their p-value lesser than 5 percent level of significance. Hence, it is found there is a significant difference between educational qualification and working condition.
- 5 The study depicts that the ANOVA analysis of Nature of the job and level of satisfaction towards the working condition and its results. It is inferred that the factors namely Branch has enough staff to discharge the work, Branch has comfortable seating lighting, Ventilation, and Toilet facilities, Assignment of workload is reasonable, Working hours are convenient, Reasonable break time during working hours have their p-value lesser than 5 percent level of significance. Hence, there is a significant difference between the nature of the job and working condition.
- 6 The study portrays that the ANOVA analysis of experience and level of satisfaction towards the working condition and its results. It is inferred that the factors namely Branch has enough staff to discharge the work, Branch has comfortable seating lighting, Ventilation, and Toilet facilities, Assignment of workload is reasonable, Working hours are convenient, Reasonable break time during working hours have their p-value lesser than 5 percent level of significance. Hence, it is found there is a significant difference between Experience and working condition.

SUGGESTIONS

- 1 Improving working conditions relates to the improvement of safety at work, training of workers, control and improvement of machinery and tools, and to provide adequate protective equipment. As a result of these improvements, it is possible that satisfaction with working conditions of workers who work in difficult working conditions increases. In that case these workers could become equally



satisfied with working conditions as workers who work in normal working conditions which may act favourably on their overall job satisfaction as well as their performance.

- 2 It is also prudent to create a safe work environment from the start rather than waiting for someone to get hurt. Conscientious employers understand that providing a positive and healthy work environment is not just a matter of complying with the law. Keeping employees safe and satisfied also makes good sense because people are more likely to produce quality work when they feel valued.
- 3 Work flexibility offers to employees a balance between professional and personal life, leading to job satisfaction and performance, with positive consequences of the well-being of the organization. Work flexibility is very important, digital transformations and technology allowing a carrying out of activities based on an internet connection in many areas.
- 4 It is important to provide a break, employees are geared up to work again, significantly boosting their performance level. This rejuvenation enables them to complete their tasks more accurately. Increased productivity is a win-win situation for employees and organization.

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A CONCEPTUAL STUDY ON THE AMLAPITTA NIDANA PANCHAKA

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ABSTRACT

Amlapitta is a burning issue encountered at present era because of consumption of excess katu, snigdha, viruddha, abhishyandi, atyushna, vidahi, pista anna and changed lifestyle as well as indulgence in diwaswapna, ati udaka panam, chinta. These causative factors further leads to agnimandya and vitiates the dravata of pitta hence causing shukhtatva and vidagdhatva of ahara rasa. Hence the main key for treating Amlapitta is to improve agni and following proper pathya so as to avoid the occurrence.

Amlapitta is defined as the increased state of sourness of pitta emphasizes that Amlapitta is a pathophysiological condition in which the pitta gets vitiated in terms of vriddhi. Kashyapa is the 1st person to mention the disease amlapitta in detail. Virudha, adhyasana, vidahi, pittaprakopi ahara etc comprises the nidanas of amlapitta leading to tridosha prakopa where in specially samana vata, pachaka pitta and kledaka kapha are involved and causes agnimandya. The improperly digested food leads to shukhtata due to ashayadushti and causes improper formation of rasadi dhatus. This entire processes manifest as Amlapitta producing hrktantadaha, tiktamla udgara. Thus all the tridoshas are vitiated and produces Amlapitta.

KEY WORDS : *amlapitta, pitta, agnimandya, ahara, pathya etc*

INTRODUCTION

Amlapitta is considered as a life style disorder mainly due to the improper dietary habits. According to Ayurveda, all diseases are caused due to impairment of Agni (digestive fire).¹Amlapitta is one among them. The understanding of the etio-pathogenesis of a disease is very important for the better understanding and scheduling the treatment protocol.

A detailed description of the disease is not found in Brihatrayees but can see well after the Samhita kala. Kashyapa Samhita is the first person to mention the disease Amlapitta with detailed explanation in 16th chapter of Khilasthana. Madhava Nidana is the first available text which gives importance to Amlapitta and

described its etiopathogenesis and symptomatology in detail along with Urdhwaga Amlapitta and Adhoga Amlapitta.

NIDANA

After assessing the Nidanas of Amlapitta, it can be broadly classified as

- Aharaja
- Viharaja
- Manasika
- Agantuja²⁻³

**Aharaja Hetu (Dietary factors)**

Dietary factors are considered as the very 1st set of etiological factors. The concepts according to Ahara vidhividhana and Ahara vidhi visheshayatana⁴ can be considered here. The factors like katu, amla, vidahi etc⁵ ahara and its irregular intake will lead to pitta dosha prakopa.

- Abhojana
- Atibhojana
- Ajeerna
- Amapurana
- Vishamashana
- Adhyashana
- Gurubhojana
- Pishta atisevana
- Phanita atisevana
- Ikhuvikara atisevana
- Usha atisevana
- Katu-amla rasa atisevana
- Drava- ruksha atisevana
- Kulatha atisevana
- Madhya atisevana

Viharaja Hetu

Viharaja hetus include code of habits. The viharaja hetus include

- Bhukte bhukte snana (taking bath after food)
- Bhukte bhukte avagaha (tubbath after food)
- Bhukte bhukte diwaswapna (taking sleep after food)
- Vegadharana (suppression of natural urges)

Manasika Hetu (Psychological factors)

Psychological factors which leads to increased pitta dosha are

- Chinta (thinking)
- Krodha (anger)
- Bhaya (fear)
- Shoka (sorrows)

Kalaja Hetu (Other related factors)

The one which comes under kalaja hetu are

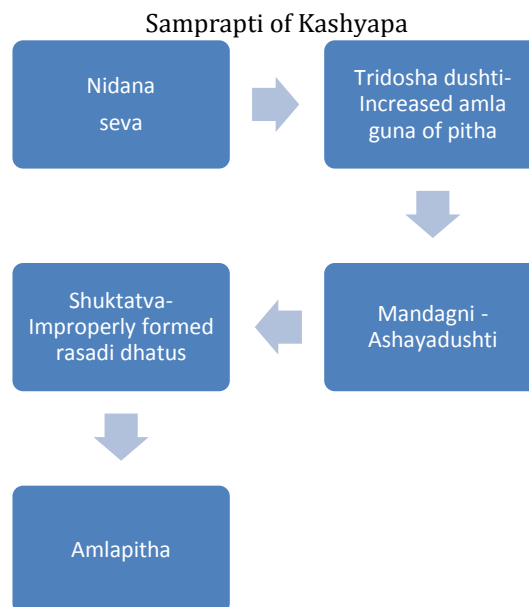
- Varsha ritu (rainy season)
- Pravrut ritu (early part of rainy season)

SAMPRAPTI

- Samprapti is the pathogenesis of any disease which place a very important role in the treatment aspect as samprapti vighatana is important.

Samprapti according to Kashyapa Samhita

- It is considered under Amashayoktha vyadhi. According to Kashyapa samhita the nidana seva which causes tridosha dushti leading to agnimandya further on to shuktava. The fresh food ingested afterwards is improperly digested due to ashaya dushti. Rasa dhatu dushti happens further on affects the other dhatus. This entire process is manifested as Amlapitta having the symptoms of hrutkantadaha, Tiktamla udgara etc. Though all the doshas get vitiated the predominant one is pitta dosha.⁶



Flow chart - 1



Samprapti according to Madhava Nidana

- Pitta dosha chaya which occurs in varsha rutu which can be considered as swabhavika kalaja. If pitta prakopaka ahara vihara is done continuously it further leads to vitiation, the person gets Ajirna and in turn leads to increase in amla and drava guna of pitta and forms the vidagdha ahara rasa. This leads to mandagni, impairing the functions of agni which further ends in Amlapitta.⁷

SAMPRAPTI GHATAKA

- Dosha : Vata - Samana
- Pitta - Pachaka
- Kapha – Kledaka
- Dushya : Ahararasa
- Agni (Jatharagni) : Mandagni
- Srotas : Rasavaha, Annavaha, Purishavaha
- Sroto Dusti Prakara : Sanga, Vimarga Gamana
- Udbhavasthana : Amashaya
- Vyakta sthana : Amashaya
- Rogamarga : Abhyantara

Dosha

Samana vata

Samana vata is one among the panchavata which situates near to the amashaya(stomach). It helps in kindling the jataragni and after pachana helps in division of the digested material into sara and kitta bhagam.⁸ Once if its function is impaired leading to mandagni and ajeerna.

Pachakapitta

Situated between the amashaya and pakwashaya. The process of pachana is depended upon this and thereby all the bhutagnis are dependet on this. In Amlapitta the amla and dravaguna of pitta will get increased.⁹

Kledaka kapha

It assists the pachaka pitta in the process of digestion by breaking down the food particles. If it is impaired will distract the process of digestion.¹⁰

Dushya

Rasa is the major dushya which undergoes vitiation as it is the first to receive the anna rasa.

Agni

Amashaya and Grahani are the places of Jataragni. The process of digestion is initiated by the Samana vata and Kledaka kapha. Any impairment in agni¹¹ can lead to Tikshnagni, Vishamagni and Mandagni. Mandagni is involved is the major factor in the pathogenesis of Amlapitta.

Srotas

All the three types of srotodushti is been involved in Amlapitta. It involves annavaha, rasavaha and purishavaha srotas while considering nidanas.

Udbhavasthana

Amlapitta is an amashaya samudha and pitta pradhana vyadhi. According to Acharya Charaka adhoamashaya is the sthana of pitta why the udhbhavasthana is concluded as Amashaya.

Rogamarga

Since being a koshta sambandha vyadhi Amlapitta is considered under Abhyantara roga marga.

LAKSHANA

Samanya Lakshana

- Avipaka(improper digestion)
- Klama(dizziness)
- Utklesha(belching)
- Tiktaudgara(bitter belching)
- Amlaudgara(sourbelching)
- Gaurava(heaviness)
- Hritdaha(burning sensation in the epigastric region)
- Kantadha(burning in throat)
- Aruchi(anorexia)
- Antrakujana(gurgling sound in the abdomen)
- Vidbheda()
- Udara adhmana(distention of abdomen)
- Hritshula(epigastric pain)
- Angasada(tiredness of extremities)
- Gurukoshtata(heaviness of abdomen)
- Romaharsha(horripilation)
- Shiroruk(head ache)¹²⁻¹³

**VISHESHA LAKSHANAS**

Vataja Amlapitta	Pittaja Amlapitta	Kaphaja Amlapitta
Angasada (tiredness of extrimities)	Bhrama(giddiness)	Agnimandya(loss of appetite)
Gatrasada(general body weakness)	Swadu upashaya(reduces on having something sweet)	Aruci(anorexia)
Jrumbha(yawning)	Situpashaya(reduce on intake of something which is cold)	Atisara(diarrhoea)
Klama(dizzines)	-	Chardi(vomiting)
Kampa(tremors)	-	Gaurava(heaviness)
Murccha	-	Jadata
Pralapa(irrelevant speech)	-	Kandu(itching)
Romaharsha(horripilations)	-	Nidra(sleep)
Shula(pain)	-	Ruksopasaya(reduces on intake of something which is ruksha)
Snighdhopashaya(reduces on snigdha dravyas)	-	Usnopasaya(reduces by heat)
Tamodarshanam	-	Kaphanishtivana(expectoration)
Vibhrama	-	Shitya
-	-	Sada
-	-	upalapa

(Table -1; Showing Vishesha lakshana of Amlapitta¹⁴⁻¹⁵)**AMLAPITTA TYPES**

- Based on Gati - Urdhwaga and Adhoga Amlapitta.¹⁶
- Based on Dosha - Vataja, Pittaja and Kaphaja(Kashyapa).¹⁷
Vataja, Kaphaja and Shleshmavataja(Madhava).¹⁸

UPASHAYA AND ANUPASHAYA

In kashyapa samhita detail explanation is given.

Vataja-snigdha upashaya

Pittaja-swadu and sita upashaya

Kaphaja – ruksha and ushna upashaya¹⁹

UPADRAVA

Mentioned by kashyapa – Jwara, Atisara,Pandu,Shoola,Shohta,Aruchi,Bhrama –due to ksheena dhatu.²⁰⁻²¹

Kashyapa	Gananathsen
Atisara(diarrhoea)	Grahani(irritable bowel syndrome)
Pandutwa(paleness)	Kandu(itching)
Shula(pain)	Mandala(skin lesions)
Shohta(inflammation)	Pidaka(skin lesions)
Aruchi(anorexia)	Shitapitta(urticaria)

DISCUSSION

From the above article it is clear mandagni is the basic pathology in Amlapitta. When analyzing the nidanas of Amlapitta it is ascertained that all causes leads to pitta predominant tridoshakopa. Increased amla and dravaguna of pitta dosha leads to ashyadusti thereby shukratva which further affects the formation of rasadi dhatus. Another samprapti in regards with the changes in ritu is been explained by Madhava Nidana. Amlpitta is been classified on the basis of Doshagati

(Urdhwaga and Adhoga), Doshamarga (Sanila, Sanilakapha and Sakapha) and doshas(Vataja, Pittaja

and Kaphaja (Kashyapa) and Vataja, Shleshmaja and Shleshmavataja (Sharangadhara).

CONCLUSION

The study of nidanapanchaka helps in the comprehensive understanding of Nidana, lakshana, Samprapti, Upashaya, Anupashaya of Amlapitta. The clear cut understanding of this helps for better



treatment by incorporating Nidana parivarjana and samprapti vighatana.

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A REVIEW ON EFFECT OF POTASSIUM AND CALCIUM ON DIFFERENT PARAMETERS ON PLANTS UNDER HYDROPONIC CONDITION

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ABSTRACT

Hydroponics is a technique for better plant production in a liquid nutrient solution and without use of soil or artificial media. In this method almost all terrestrial plants, ornamental crops, vegetables, and foliage plants can be grown with their roots immersed directly to the mineral nutrient solution. This system provides better and higher crop yields, minimize the time of production and there is no weeding or cultivation required. The effect of calcium and potassium concentration affect the shoot, root and on the growth of plants. It enhance the structural, physiological as well as morphological parameters of plants. It shows the better quality and high yield of crops. This review is focused on the effect of potassium and calcium on the growth and productivity of plants. This article also evaluates the role of K and Ca under hydroponic system to test the different parameters.

KEYWORDS : *Hydroponic, Potassium, Calcium, Growth and Productivity.*

1. INTRODUCTION

The term 'Hydroponics' was derived from Greek word 'hydro' means water and 'ponos' mean labor. Hydroponics is a modern agriculture technique that uses mineral nutrient solution rather than soil for crop production (Fraz Ahmad Khan *et al.*,2018). Hydroponics was found to be better alternative and can be defined as the cultivation of plants without soil, which is being commercially used in the most of the western countries. This study explores the applications of this cultivation technique and to reveal its future importance. This method can be adapted to almost all the terrestrial plants. Vegetable

food crops like wheat, tomato, spinach, mint, coriander and many more plants are being cultivated in commercial scale. The construction of a hydroponic system requires an initial investment, hard work, and care. Better the yield will be, if approached as it needs. It was recommended that this technique can be adapted as a step to produce the food crops and medicinal plants to meet the global demand, to control the global warming, and there by conserving the Mother Nature for the better future. The increased population, sub-urbanization of the forest (excluding land for commercial food production), improper agricultural practice which altered the soil pH, synthetic fertilizers, pesticides



which drastically reduced the soil flora and fertility which made a quench for the new alternative technique for obtaining the food and medicinal plants of better quality, yield and for growing fresh produce in non-arable areas of the world (Sagar J. Dholwani *et al.*,2018).

developments in the techniques of soil-less culture. In 1929, solution culture was promoted by William Frederick Gerick for agricultural crop production. The term “Hydroponic” was firstly introduced by the William Frederick Gerick in 1937. In 1946, English scientist W.J. Shalto Duglas introduced the Hydroponics in West Bengal India. In 1960-70, commercial hydroponics farms were developed in many countries of the world. Later, during 1980 many automatic and high-tech hydroponics farms were developed around the world (George *et al.*, 2010; Fraz Ahmad Khan *et al.*,2018).

Key factors of soil less culture or hydroponics production (Figure 1) (Aatif Hussain *et al.*,2014).

1.1 Background

In 1627, the most primitive book on soil-less culture was *Sylva Sylvarum* published by Francis Bacon. In 1859-65, German botanists made

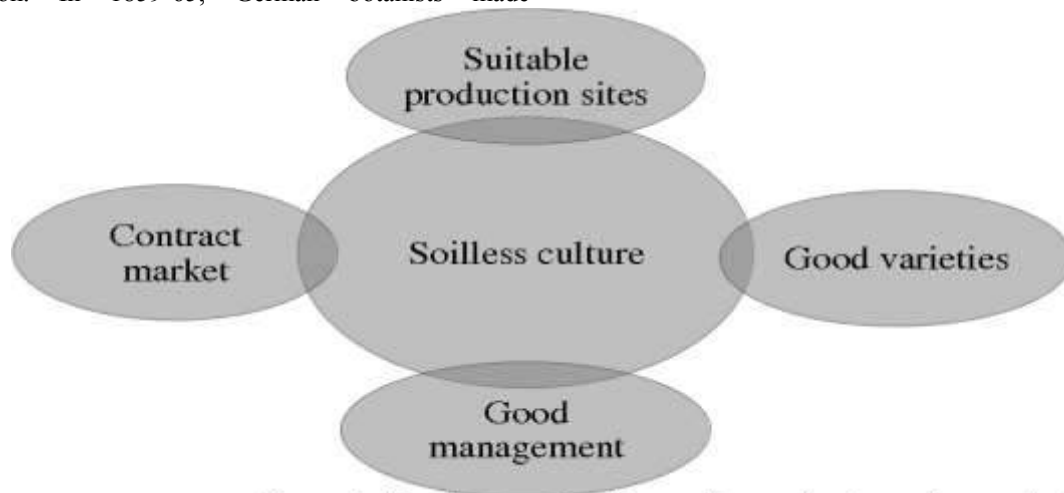


Figure 1. Key factors of soilless culture or hydroponics production

A large number of plants and crops or vegetables can grow by hydroponics system. (Nisha Sharma *et al.*, 2018). Application of pesticides is generally avoided under hydroponics system. (Sagar J. Dholwani *et al.*,2018). Quality of produce, taste and nutritive value of end products is generally higher than the natural soil based cultivation. Various

experimental findings outlines that leafy greens (lettuce, spinach, mint, onion and tomato etc.) can be successfully and easily grown in hydroponic systems. Lettuce and spinach are most promising species to grow in integrated hydroponics and aquaculture systems because of its higher growth and nutrient uptake capacity (Nisha Sharma *et al.*, 2018).

Table1. The Vegetable Production under Soil-Less Culture in India.

Vegetables	Production (g/m ² /day)
Carrot	56.5
Cucumber	226
Garlic	57
Ginger	57
Leek	57
Green Bean	113
Lettuce	226
Onion	56.5
Peapod	113
Potato	56.5
Salad greens	226
Tomato	113
Greens	113

Source: (Singh and Singh, 2012; Aatif Hussain *et al.*,2014)



Calcium has been shown to ameliorate the adverse effects of salinity on plants (Ehret *et al.*, 1990). Calcium is well known to have regulatory roles in metabolism (Cramer *et al.*, 1986; B. Murillo-Amador *et al.*, 2007). Potassium is considered as most ambient macronutrients required for proper

growth, development and sustainable crop yield. Most of the scientists reported that application of 60 kg potassium per ha is the best dose to obtain higher yield of maize. However, it depends on cultivar and soil (Muhammad Adnan *et al.*, 2020).

Table -2. Sources of Nutrient Elements

Source	Element	Characteristics
Potassium nitrate KNO ₃	N, K	Very soluble salt
Potassium phosphate monobasic KH ₂ PO ₄	P, K	Corrects phosphorus deficiency
Magnesium sulfate MgSO ₄	S, Mg	Cheap, highly soluble, pure salt
Iron chelate	Fe Cit	Best sources of iron
Boric acid H ₃ BO ₃	B	Best source of boron
Calcium nitrate Ca(NO ₃) ₂	N, Ca	Very soluble salt

Sources: (Ms. Mamta D. Sardare *et al.*, 2013)

2. EFFECT OF POTASSIUM ON GROWTH AND PRODUCTIVITY

Potassium (K) is one of the most important elements required in large amounts for normal plant growth and development. While involved in many physiological processes, potassium's impact on water relations, photosynthesis, assimilate transport and enzyme activation can have direct consequences on crop productivity. Potassium can be applied as many forms and at different concentration. When potassium uptake is lower than demand, foliar potassium is mobilized to the fruit, to the detriment of plant growth and fruit set and quality (Besford and Maw *et al.*, 1975; Mohsen Kazemi *et al.*, 2014). Intensive research has been done to investigate the effects of K on fruit quality of vegetables grown in hydroponics, showing the significance of K in the nutrition of these crops (Kreij *et al.*, 1999; Lin *et al.*, 2004) found that increasing potassium levels significantly increased the concentration of total sugar, total soluble solids, glutamic acid, aspartic acid, alanine, and volatile acetate of muskmelon (Mohsen Kazemi *et al.*, 2014).

Aside from that the foliar application of KNO₃ has shown beneficial effects on growth, nutrients concentration, NRA and soluble proteins of sunflower and safflower plants, irrespective to their growth under non saline or saline conditions (Nusrat Jabeen *et al.*, 2011). The most limiting macronutrient element is potassium which exhibited the adversely reduction of plant growth patterns in Japanese mint when compared with plants grown under the complete nutrient solution. Omission of potassium may also induce the oxidative stress condition which disrupts cell membrane stability and chlorophyll apparatus. The findings reported herein will be valuable to support optimal cultivation Japanese mint cultured in the hydroponic system (Chananchida Janpen *et al.*,

2019). The effect of potassium (KC) concentration on the nutritional quality and yield of pepper fruits was evaluated. Pepper (*Capsicum annum* L.) plants were grown in a controlled environment greenhouse under hydroponic conditions with different nutrient solutions obtained by modifying the Hoagland solution to achieve different KC concentrations. Potassium nutrition affected fruit yield parameters more than vegetative biomass in pepper plants (M. Ángeles Botella *et al.*, 2016). The effective concentration of K has shown effective improvement of fruit yield and quality seems to be at higher concentration in tomato (Mohsen Kazemi *et al.*, 2014).

Akram M. Studied the response of maize to potassium and reported that increase in potassium levels the maize showed an increase in yield constituents. The maize exhibited maximum yield when potassium was used @ 125 kg ha⁻¹ as compared to the control treatment. They also concluded that potassium @ 125 kg ha⁻¹ produced the economical yield of maize hybrids. (Akram M. *et al.*, 2010; Muhammad Adnan *et al.*, 2020)

3. EFFECT OF CALCIUM ON GROWTH AND PRODUCTIVITY

Calcium (Ca) is an essential macro-element and it is also a very important determinant of plant growth and production. Calcium is a highly mobile element and plays many crucial roles in plant membrane structure and function for forming abundant vegetative mass. It contributes to maintenance of cell membrane stability and wall structure (Wissem HAMDI *et al.*, 2015). Foremother Ca deficiency has been linked to many disorders especially, such as brown center, hollow heart that was thought to be related to tuber Ca level. (Wissem HAMDI *et al.*, 2015; Ozgen *et al.*, 2003) Whereas (Arvin *et al.*,



2005) revealed that increasing plant Ca has been shown to enhance resistance to plant tissue macerating bacterial phytopathogens. It also enhances the structural integrity of cell walls and membranes. Calcium can be applied as calcium chloride, calcium nitrate, calcium sulphate and lime. Studies by (Ahmad *et al.*, 2009) showed that calcium nitrate was highly soluble and more effective in increasing Ca concentration in solution. (Wissem HAMDY *et al.*, 2015).

The effect of CaSO₄ increases the fruit yield and quality of strawberry in saline condition (M. Khayat *et al.*, 2007).

The effects of calcium and potassium level on the plant growth and severity of endive (*Cichorium endivia* L., cv. Green Curled) mainly affected the upper part of endive plants and reduced leaf area. However, when salinity combined with either K- or Ca-enrichment, the negative impact of salinity on plant growth was reversed. K- and Ca- enriched plants did not differ in plant biomass, leaf/root ratio, leaf fresh weight, leaf number, and root length. (Tzortzakis N.G. *et al.*, 2010).

Presence of calcium increases the life of flowers such as rose, and prevents cut flower rose from opening prematurely. With the use of calcium, such flowers may be an increase in their life cycle by preventing early blossoming of flower buds. Calcium is also beneficial in preventing the early withering of the leaves and would also reduce the atmospheric factors that can also cause withering of the plant leaves. Increasing the concentration of calcium in lily nutrition caused to increase all growth indices particularly plant height, stem and flower diameter, bud numbers, vase life of cut flowers (N. Seyedi *et al.*, 2012).

4. CONCLUSION

As condition of plant growing in soil is becoming difficult because the industry expect to grow intensely in future also. The hydroponic technique is the better option to increase the production of yield. By this technique food security of our country can be secured. Application in influence of K increasing in crop yield and quality at higher concentration show the better results. Added calcium in the nutrient solution may ameliorate and beneficial for crops because it improve growth and productivity of plants. The effective concentration of calcium and potassium as a source has positive response on morphological parameters of the plant.

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BIG DATA ANALYTICS IN BANKING AND FINANCIAL SERVICES SECTOR

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ABSTRACT

'He who holds the wealth of information, holds the solution to the toughest of the situations' this quote is very much apt for the recent ongoing scenario, where there is an invisible struggle going on among the organizations as well as nations in the search for more and more information. Now, when the Banking and Financial services sectors are put under the scanner, it becomes evident that they are sitting on top of a humungous heap of valuable data. This data can be used for the betterment and advancement of the industry as well as the people. While it is good to have large amount of data available, it will be termed a big pile of trash if it is not analyzed properly and the results obtained from it are not put to use. With the adoption of Big Data analytics into the banking and financial services, many obvious as well as concealed problems can be addressed to and even solved quickly. The main objective of this paper is to highlight the meaning of Big Data analysis, study the types of data analytics with respect to Banking and Financial services sector and to showcase the potential benefits of embracing Big Data analytics into the Banking & Financial services sector.

KEYWORDS: *Information, Banking and Financial services, Advancement, Big Data, Data Analytics*

INTRODUCTION

In today's technology driven world, one thing that has increased by leaps and bounds are the tons and tons of user data that is floating around in the cloud. Especially when we talk about the Banking and Financial services sector, they have a huge database of customers which they have accumulated over a period of time. It is like sitting on a mine of gold, where the important thing is not just mere possession of the mine but the extraction of gold from the mine. In order to

take complete advantage of the data that is collected by them, proper analysis is required. This analysis cannot happen with the usage of traditional methods and requires more sophisticated. Big Data Analytics when integrated with Banking and Financial Services sectors enables them to tap into the bulk load of data and use them for their competitive advantage all the while increasing the customers satisfaction levels.



OBJECTIVES

- To understand the meaning of Big Data Analysis.
- To identify various components of data analytics with respect to banking and financial services sector.
- To showcase the potential benefits of embracing Big Data Analytics into the Banking and Financial services sector.

METHODOLOGY

This study is done by referring theoretical data available from various online resources. This is purely a theoretical paper.

MEANING OF BIG DATA& BIG DATA ANALYTICS

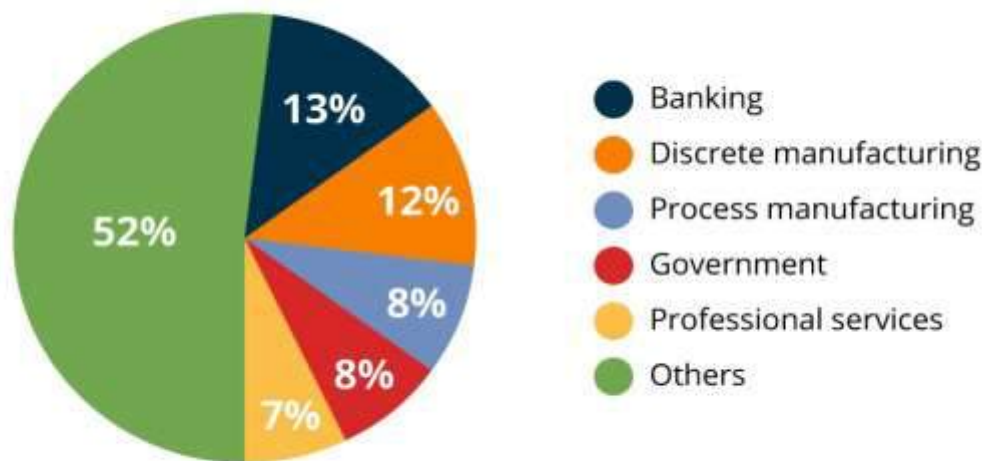
The meaning of the word ‘Big Data’ is exactly the same as it is read, i.e. collection of large number of data sets. The word ‘Big’ is attached with ‘Data’ because it is related to such large unprocessed data which is beyond the scope of traditional databases management tools to capture, process, analyze and store. One of the most important features of Big data is that it keeps on growing exponentially with time. In order to take complete advantage of the data it has to be analyzed critically, this process of analyzing the large data using various tools and techniques is known as Big Data Analytics. With the help of sophisticated software and tools predictive analysis, data mining, text mining and data optimization can be done. Many underlying

patterns and upcoming trends are identified using data analytics which helps in making important decisions.

HISTORY &EVOLUTION OF BIG DATA ANALYTICS

The concept of Big data is not a new one and it has been around for many years but it has become more popular and needed since the last decade or so. Organizations have started to realize the hidden value of large data sets and use them for their own benefit. But in the olden days when no one knew the existence of big data analytics it was still being used in a more traditional manner in the form of spreadsheets which were manually examined to identify trends and patterns to derive at a conclusion. One of the earliest forms of big data analysis which was used was statistical analytics. But it had a limitation by which it could not analyze huge data all together. This was in the early 1800s where statistical analysis revolved collection and interpretation of small to medium size of data sets. But in this era big data analysis has become like a necessity for medium to large organizations as they bring with them many advantages over traditional analysis such as they are highly efficient, accurate as well as quick in nature. This gives the organizations and ability to stay one step ahead of the competition.

Below presented pie chart shows the breakup of various industries or sectors which have adopted Big Data Analytics into their ecosystem (Source: IDC Semiannual Big Data & Analytics)



A pie chart showing the various services where Big Data Analytics is adopted at a global level

(Source: PWC Global Fintech Report)



TYPES OF DATA ANALYTICS

When we talk about banking and financial sector, they are highly data intensive industries. The amount of data collected by banking and financial industries is unimaginable as this is the most basic service which every individual avails. These industries have become more and more data intensive since the digitalization of banking sector as well as financial services sector. Now to utilize this data in a fruitful manner a lot of background analytics has to be done, so that the data collected does not go to waste and industry gets a good amount of profit out of it. When we talk about data analytics with respect to banking and financial services sector, they can be divided into 4 main classifications.

Descriptive Analytics

Diagnostic Analytics

Predictive Analytics

Prescriptive Analytics

Descriptive Analytics: Descriptive analytics can be termed as the most basic form of analytics. Here, the massive data or the large sum of data is basically crunched into such a form that it is understandable. This stage or type is often considered as the first stage of data analytics. Descriptive analytics involves the usage of descriptive statistics like arithmetic operations, mean, median, percentage etc. Now a day's what is called as business intelligence is basically the usage of descriptive analytics to make the raw data understandable to the investors, managers and the stakeholders. The main motive is to understand the underlying behavior or trend of the data rather than

making any final estimation or conclusions. Banking industry heavily relies on this kind of analytical method as this makes them easy to understand the potential customers' spending habit, the investment behavior as well as the savings nature.

Diagnostic Analytics: Diagnostic analytics uses historic data to determine or to get the answer for the question "Why has something happened?" It dives deep into the data and tries to identify the root cause of the problem. This has very much limited usage because this just answers the question of 'why?' and this is limited to only few sectors or industries. The relevance of this kind of analytical tool is very much limited to banking and financial services sectors because this is mainly used to identify the problems which have been occurred with the past performance or why the sales have gone down or why the company has performed poor while all the conditions were favorable instead of trying to analyze or trying to understand the underlying behavior or predict the future.

Predictive Analytics: Predictive analytics as the name itself suggests tries to predict the future occurrence of an event or an instance which is most likely going to affect the future performance of the organization. Predictive analytics basically tries to answer the question 'What is likely to happen in future because of some underlying trend in the past historical data'. This has a much wider scope when compared to Diagnostic Analytics as well as Descriptive Analytics because this uses the method as well as the finding of both of them to arrive at a conclusion. The financial services sector can benefit with the usage of this type of analytical method. One



thing is to be considered here is that it is not 100 percent accurate. The findings or the conclusion of this method is purely dependent on the data which is collected. The quality of the data is very much important when compared to the quantity of the data.

Prescriptive Analytics: Prescriptive analytics tries to provide answer to the question 'What action is to be taken when a certain situation is experienced?' This is the most sophisticated type of analytics when compared to the other three because it uses the findings, the nature and the method of those three combined together. The main purpose of this type of analytical method is to provide the answer to what is to be done when a particular ill situation or particular problem is encountered. This method is considered to be the smartest way of analytics because it used predictive analytics as its base and it has system of learning at every stage from the feedback provided. Prescriptive analytics uses machine learning, R programming, python etc. to do the analytical work. It has a lot of significance on banking and financial service sector because this is basically a customer oriented analytical method. It not only uses the internal but also the external data as well as the feedback provided by customers to keep on learning and provide best solution to the users.

BENEFITS OF BIG DATA ANALYTICS IN BANKING & FINANCIAL SERVICES SECTOR

When we talk about the potential benefits of associated with the usage of Big Data Analytics, there are many, but in this paper, we try to study only the benefits or advantages which are purely related to the Banking and Financial Services sectors. Some of the most prominent benefits are as follows:

- a) **Fraud detection & prevention:** Banking and Financial Services industries are both highly secure industries but still they are considered to be one of the most vulnerable ones. We have seen in the recent times that one of the greatest challenges banking industry face are fraudulent activities. These fraudulent activities can be detected and then prevented using Data Analytics, as the analytics runs in the background trying to identify and establish trends and then pin point any undulation in the smooth flow of normal activities, it identifies any strange behavior or irregular transactions and has the ability to stop the fraud before it happens.
- b) **Segmentation of Customers:** A bank or a financial institution has many customers from different group of income, occupation, net

worth etc. They can easily classify or segment their consumers or customers with the usage of data analytics considering various parameters like spending behavior, credit usage and repayment, net worth, services which are frequently used etc. this is possible only using Big Data Analytics because it is not easy task to segment the customer base which is in millions in numbers.

- c) **Personalization of services:** In order to take advantage of personalization of services using data analytics, segmentation of the customers is to be done and basing on the results obtained from various parameters like spending habit, repayment capacity and frequency etc. analysis is done to understand what kind of service is more suited to which category of customers. Here banks and financial institutions can directly target their prospective customers.
- d) **Customer Lifetime Value:** Organizations nowadays are not only focused on making a one-time profit from sale in fact they have become more future conscious and have adopted the method of customer retention. This was earlier practiced only by product-based companies but nowadays even service-based companies have adopted this. Analytics facilitate the use of customer lifetime value which means the value which a bank or a financial institution will gain after fostering a long-term relation with a customer or a group of prospective customers.
- e) **Feedback Management:** Big data analytics specially in service-based industries like banking and financial services industry mainly derives their external input from the feedback provided by the users, especially perspective analytics which works by using the feedbacks provided. Properly using the feedback helps to improve the quality of the service provided.
- f) **Increased Efficiency in Operations:** The services provided by banking as well as financial institutions may be monotonous in nature but the frequency is very high as there is a huge customer base. There is a necessity for their operations to be highly efficient in nature. Big Data Analytics helps in increasing the efficiency of the operations.

CONCLUSION

Banking and Financial Service sector which is already a data intensive industry will keep on getting more and more data oriented because the database of



the customers is increasing day by day especially after digitalization of banking activities as well as the financial activities in our country. Now using the data accumulated from various customers is in the hands of banks and financial industries because if this data is not utilized properly and just collected, it would be known as the fools' errand. Utilizing it properly would help the battle many unforeseen problems which are lurking around in the future. To battle such problems analytics have paved a path for all the industries, specially banking and financial industries because they directly deal with money and money matters. Wise usage of data and critical examination of data will provide banks and other financial companies a very much competitive advantage. While there are a wide range of advantages of using big data analytics in banking and finance service industry there are also few disadvantages like cost involved, the expertise, the dynamic nature of the operations, the complexity of the work involved but apart for these the advantages outweigh the disadvantages and it would always be advisable to adopt Big Data Analytics in a full pledged manner. To tell it in more simple word, the banking and financial industries are one of the most vulnerable sectors in any country. Big data analytics and various other analytics help to protect these vulnerable industries from other outside threats.

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PLAGIAT : A CODE PLAGIARISM DETECTION TOOL

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ABSTRACT

The plagiarism and its detection has become a major problem in today's Edu – tech world. The advantage of being unique is not less important than any other valuable property. Accordingly, the plagiarism itself is a key factor in terms of the development; as it contributes to the uniqueness and differentiation through experimentations between two python source codes or two java source codes. In this paper, we discussed about a new model for the source code detection which works on the concepts of Machine Learning. The machine learning algorithms are profound to get the most accurate results and thereby Naïve Bayes algorithm, K – Nearest Neighbor and ADA Boost Meta Learning Algorithm are deployed in a combined manner. The final source code can be compiled and tested using the designed model to get the desirable results. The conception, interpretation, experimentation and results are discussed elaborately.

KEYWORDS : *Plagiarism, Source Code, Machine Learning, Algorithms, Experimentation.*



INTRODUCTION

The plagiarism is meant to be the replicating activity of one's words or any other material. It is also termed as paraphrasing. It is generally an immense challenge and a tough task to familiarize the content with minimum values of plagiarism. Since the task of manually detecting plagiarism in a large document database is very tedious and time-consuming, efforts are continuously being made to automate the process. There are two main categories of techniques for source code plagiarism detection: attribute-counting-based and structure-based comparison. Attribute-counting-based techniques consider the number of occurrences of different attributes in a file following certain criteria and different similarity measures are used to obtain the similarity between files. Attribute-counting algorithms are simple to implement and execute faster. Structure-based methods, on the other hand, are more reliable since they gather details of program structure for comparison of programs. However, structure-based methods are computationally expensive. Hence, the aim of this research is to develop a new strategy which combines the advantages of both the categories.

LITERATURE SURVEY

Farhan Ullah., et al., worked on the solving of the plagiarism problem in terms of the academicians. A new technique was generated to detect the cloned or plagiarized content between the C++ and java source codes [1]. Yahya Ali., et al., worked on the frame work design to detect the plagiarism in Arabic language. The detection of the plagiarism is a difficult task due to the structure and principles of the Arabic language. The work is intended to the detection of the plagiarism of the Arabic documents by using the logical representation as paragraphs, words and sentences [2]. Saed Alrabee., et al., proposed a technique known as SIGMA to identify the reused functions in binary code in terms of matching traces of a binary code in its novel representation form named as the Semantic integrated Graph (SIG). The results exhibited that the opted approach has yielded promising results [3]. Upul Bandra., et al., worked on the new plagiarism detection method which is developed based on the attribute counting technique. The proposed method is unique from the other methods as it is made based on a meta – learning algorithm in order to enhance the accuracy rate of the plagiarism detection system [4]. Berry M W., et al., explained the content on understanding the search engines. The search engines are a way vague topics that we're unfamiliar about. The search engines are deployed in such a way that they supply the person with the information they want instead of what they asked for [5]. Xin Chen., et al., worked on a metric based Kolmogorov

complexity among the information shared between two sentences. The metric model designed is applied to calculate the amount of the shared information among the programs. A new practical system termed to be software integrity diagnosis system was implemented to work on the application effectively [6]. G Cosma., et al., extended the work on surveying over teaching of programming on computing courses by the UK academicians. The survey was intended to understand the context of source code plagiarism [7]. Sabestiaan de Klerk., et al., discussed about the status of MBPA at a point of time. It is used as an assessing method that incorporates the multimedia like video, audio, graphs etc.; to simulate the work environment of the student [8]. Muhammad Farhan., et al., presented a methodology of qualitative assessment along with an algorithm for measuring and the correlation. The results are interpreted using statics generated in terms of the descriptive and graphical methods [9]. Muhammad Farhan., et al., worked on the comparison of the computational performance of developed algorithms with different video bites along with their processed frames per second by analyzing it as per their corresponding bins. The mean, median and max values are also compared for the processed frames [10].

OBJECTIVE OF THE WORK

The goal of the presented work is to concept and design an new model of the plagiarism detection using the machine learning algorithms. The final detection tool is used to detect the plagiarized content between two python source codes or two java source codes.

DETAILED PROCEDURE

The detection of the plagiarized content between two source codes is the most difficult task to do manually. Thereby an integrated plagiarism detection tool was deployed using the machine learning algorithms. This tool can be deployed to find the cloned content between the source codes with much ease and less effort. The similarity in the source code is the crucial factor to be counted in terms of the academics and the software industry. The plagiarism in the source code, the similarity content can be suspicious. These types of codes share the similar type of code segments and are differentiated in the logic, functionality and method. This intent of similarity is availed as the substantial evidence in plagiarism of a source code. There is a specific feature for every language as they differ in their syntax and semantic structure. When a student clones the logic of a source code and converts it to a required format in the targeted language, that individual never gets the ability of thinking on his own. There are even some tools available for the direct conversion from one language to another



language.

The plagiarism detection tool was conceived using the ML algorithms rather than the old conventional methods which include the attribute counting, graph – based analysis and structural methods. So, thereby we used the algorithms like Naïve Bayes Algorithm, K – Nearest Algorithm, and ADA Boost Meta Learning Algorithm. These algorithms all together in a common model produce the best results when compared to the other existing models

- a. Naïve Bayes Algorithm : It is a classification algorithm intended to work on the Bayes theorem of probability. It is independent from the general conventional predictors. It is mainly used to build a model containing large sets of data.
- b. K – Nearest Neighbor Algorithm : the KNN – Algorithm is a non – parametric method intended for the classification and regression operations. An input when given will be combined with the K – closest training examples in the feature space. The property values which are counted as the output values will be an average one in the result.
- c. ADA Boosting : The adaptive boosting is a meta algorithm and also considered as a machine learning algorithm. The ADA algorithm is used to enhance the performance of the detection tool to get the desirable results. The group of outputs all together is said to be the final output of the file based on the classifier. Upon adjusting the configurations and parameters, they achieve the optimal performance over a data set. Thereby, the ADA meta boosting algorithm is termed as the best – out – of – the – box classifier.

EXPERIMENTATION

The conception and design are adhered to the machine learning algorithms. The aim to clear the higher phases of plagiarism. The entire detection tool was designed using the python programming language. The machine learning algorithms combined with the python programming language are termed as the best collaboration so as to get the desired results of detecting the plagiarized content. As a single algorithm alone cannot produce the final output in a desired way, the combination of the machine learning algorithms together are deployed in this. There are two main categories of techniques for source code plagiarism detection: attribute-counting-based and structure-based comparison. Attribute-counting-based techniques consider the number of occurrences of different attributes in a file following certain criteria and different similarity measures are used to obtain the similarity between files. Structure-based techniques derive information on program structure and obtain similarity scores based on this information. Attribute-counting algorithms are simple to implement and execute faster. Structure-based methods, on the other hand, are more reliable since they gather details of program structure for comparison of programs.

RESULTS AND DISCUSSIONS

The new plagiarism detection tool has been conceived and designed in a way that identifies the cloned content between two source codes related to the java and python programming languages i.e. either between two java source codes or two python source codes. The final model deployed using the Naïve Bayes Algorithm, K – Nearest Algorithm, and ADA Boost Meta Learning Algorithm all together contributed for the best results. The codes are compiled for the corpus demo, corpus demo example and the main code along with the paraphraser & view code.

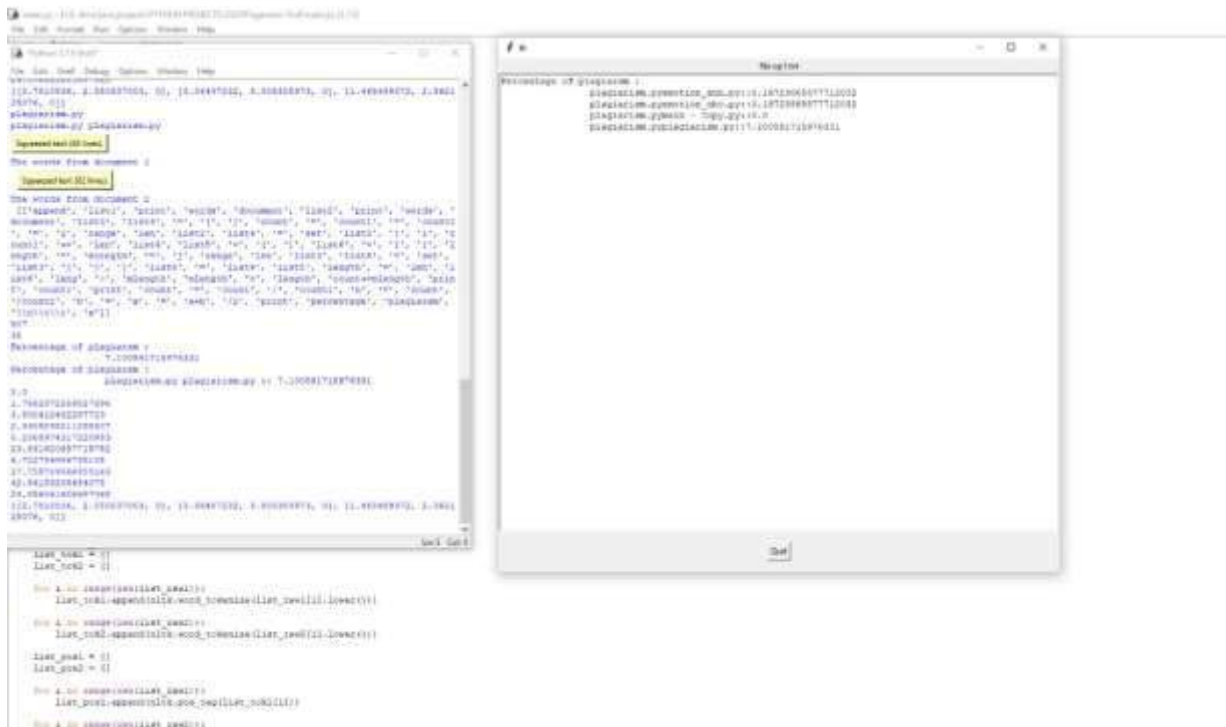


Fig 1 : The end result when compiled and tested

The result is generated as displayed in the picture. The output is appreciable and in the required form. When the inputs are given in the required format, the code analyses the inputs. The analyzed input is processed accordingly and then the output is generated in the percentage form of the plagiarism. The amount of content cloned or plagiarized is denoted in the result in terms of percentage. Thereby making it the optimum model of computing the plagiarism in a source code.

CONCLUSIONS

The detection of the plagiarism has been bigger challenge in the student’s assessment of the programming assignments to be submitted over the latent semantic analysis method. The source code which is plagiarized can be a modified version or the indirect modifier of the original code in different programming languages. The user gets the code copied to the source and then changes it accordingly to the targeted language. The new model for the source code plagiarism detection, which uses the concepts of machine learning in order to fight with the higher phases of plagiarism was designed. The main language for the conception and design is preferred to be python. Conventional methods like structural methods, attribute counting method and graph – based analysis don’t produce the results with accuracy. Machine learning algorithms produce most accurate results with continuous learning from the training modules. The three algorithms used are Naive Bayes Algorithm, K – Nearest Neighbor and

ADA Boost Meta Learning Algorithm. Since, no single algorithm can produce the result with accuracy, thus combining the algorithms help to produce results more accurately. The designed code has been compiled and tested accordingly to get the desirable results. The conception, interpretation, experimentation and results are discussed elaborately.

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MODERN UZBEK POETRY DURING THE YEARS OF INDEPENDENCE

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ABSTRACT

The article under discussion depicts stylistic trends in modern Uzbek poetry, their place and properties. The author of the article gives a brief overview of the transformations in modern poetic movements. During the years of independence modern Uzbek poetry is greatly enriched with new sounding, profound content. Reality, truthfulness is enhanced in the description of the lyrical hero, in the foreground his fate and the uniqueness of his spiritual world are put forward.

KEY WORDS: *Uzbek people, ancient, literature, poetry, spiritual perfection, the diversity of methods, independence, self-consciousness, multidimensional description, standard means of expression.*

DISCUSSION

Uzbek literature is an immortal creation of the creative genius of the Uzbek people, an artistic history of their life, the brightest embodiment of their freedom-loving aspirations and aspirations and love for their homeland. Under "Uzbek literature" we understand the literature of the Uzbek people, written primarily in the Uzbek language. However, for a long time the literature of Turkic peoples inhabiting Central Asia was unified and written in the so-called Turkic language, or, as it is commonly believed in the domestic science, in Chagatai (old Uzbek) language. Consequently, that ancient Turkic literature, starting from the first monuments of the ancient Turkic script, belongs to practically all Turkic peoples inhabiting this vast region, and is an integral part of the Uzbek literature, although it was not written in the Uzbek language proper [1].

Uzbek literature is a living monument to the nation's historical past. The spiritual development of society over the centuries, and the national character of the Uzbek people is embodied in its pages and images created by it.

Poetry, as an integral part of the Uzbek literature, has a rich tradition and history. As one of the ways of self-consciousness, aesthetic understanding of society, existence and reality as a whole, poetry at all times and spaces has remained an art, glorifying spiritual perfection through words.

The new modern national artistic way of thinking has its origins in the lyrics of Chulpan and

Fitrat of the early 20th century, and has been perfected through the creative practice of several generations. In particular, in the 1990s of the twentieth century, a new aesthetic reality emerged, which became known as the literature of independence. Literature of the period of independence, with its weighty component - poetry - was born as a result of newly formed national artistic consciousness and social and aesthetic thinking. Reality, truthfulness is enhanced in the description of the lyrical hero, in the foreground his fate and the uniqueness of his spiritual world are put forward. All this requires a rejection of standard means of expression, a striving for new methodological approaches and multidimensional description.

Modern Uzbek poetry is greatly enriched with new sounding, profound content. The methods of its expression, along with stimulating national artistic achievements, are improved through creative borrowing of advanced traditions of global aesthetic thinking. The potential of social and philosophical content, emotional means of expression, the diversity of methods, and the subtle interpretation of thought give Uzbek poetry a unique identity. Traditional means bravely harmonize with the principles of new approaches in reproducing the internal and external processes of the complex world of the poetic hero as the main object of description, in revealing his way of thinking and emotional disposition. The multifaceted nature of the material and spiritual principles of man is revealed through the



interpretation of his deep emotional experiences invisible to the eye and the integral description as a complex supreme link. Naturally, in this process there is a need for creative experimentation in the sphere of methodological approaches, application of unexpectedly new means of expression [3].

The palette of various forms and methods of poetic works as modern artistic thinking is vividly displayed. From this point of view, lyrical works such as "The Lost Soul", "Black Wall", "Plea", "Without You" by R. Parfiya, "In the Spaces of Motherland" by A. Suyun, "Dream" and "The Road" by A. Said, "Confession", "The Sky...", "Beloved..." by Fakhriyar, "Peace in My Eyes" and "Full Moon" by Matnazar Abdulkhakim and "For You" by Iqbol Mirza occupy a special place in Uzbek poetry of the period of independence. Poetry of this period is characterized by expanding the scope of new formal and methodological approaches. It clearly expresses the desire to explore productive experiments of Eastern and Western literature in close connection with national approaches. Rhyming and unrhyming types of verse began to be widely used. The desire for complete freedom of expression is the result of the need for such forms in Uzbek poetry.

Today, the national poetry is dominated by short verse forms of four, three, two or even one line. This poetry intends to get rid of traditional forms and templates by seeking new frontiers and new techniques. In the poetry of the new era, the age of independence, such independent poems as single-line forms were born: "Pomegranates burst like human suffering" by Fakhriyar («Гранаты лопаются как людские страдания»), "For the sake of you I lived without you", "I alone have a thousand and one fate" by Ulugbek Khamdam («Ради тебя жил без тебя», «У одного меня тысяча и одна судьба») and couplets: "Freedom is not a blanket, but a garment" and "I weave poems like a spider out of love threads" by Fakhriyar («Свобода не покрывало, а одежда», «Плету стихи, словно паук, из любовных нитей»). Created a variety of different types of triplets, creatively borrowed from Eastern literature.

The qualitative change of artistic creation, particularly poetry, was also promoted by such factors as new thinking, increased feelings of self-consciousness, national pride, which began to spread widely in the 1990s of the twentieth century. Poetry has greatly expanded and saturated in the field of themes, genres, increased mental and emotional depth, increased comprehensive understanding of the man, the revision of his inner world, in general, a new artistic reflection. And in the creative approaches of the poet, along with the appeal to traditional methods, began to show ample opportunities for creative borrowing from the avant-

garde experience of Eastern and Western literature. And this requires the improvement of methods and positions in the real description of life without excessive colors, in a broader and more objective study of the contradictions of human destiny, his inner world and reflections. Our modern poetry boldly takes this path, and such universal ideas as humanism, the desire to create the good, the love of freedom are praised in a variety of lyrical forms and ways of expression.

The above facts give us reason to indicate the following basic properties of artistic thinking in poetry:

- Symbolic imagery and philosophical judgment are among the fundamental properties of modern poetry. Symbolic consciousness and expression allow for increased emotionality, beauty, and methodical evenness of poetic form along with increased potential and originality of content along with philosophical generalizations. In this process, the harmony of thought and feeling, thought and experience is increasingly expressed.
- The process of synthesis of modern poetry with the advanced experience of world artistic thinking leads to the fact that our poetry adopts a different way of thinking, whose literary forms and ways of expression are not detached from their culture and are successfully synthesized with the national spirit and content. This is an important property of the nature of artistic thinking, particularly of poetic creativity, based on the principles of continuous renewal and exploration.
- Strengthening the interpretation of the poetic image formed in Uzbek poetry in the early twentieth century, the rejection of schematism, monotony and the tendency of its objective and truthful representation as a living flesh, combined with all the positive and negative aspects. All the above is based on the principle: "An artistic image emerges only when the facts of real life are reflected not in terms of its special qualities and properties, but considerably saturated with attributes of creator's aesthetic ideal, and to some extent transformed and redefined" [2].

In contemporary Uzbek poetry, the above principles and characters are becoming more and more refined, and their new facets are being revealed. Naturally, this phenomenon is directly related to the relationship between man and time, social and everyday life and aesthetic consciousness. In this process, both ideological, methodological and formal directions of poetic thinking and the way of artistic perception of reality are renewed.



In science, the modern state of the national lyric is declared as a new, higher stage, more widely analyzed the basis and modern factors of its qualitative indicators. The main thing is that in this process, along with socio-aesthetic factors, attention is paid to the personality of the poet, his creative image, activity, talent of perception of reality, the level of use of creative freedom. The results of the expression of these properties are manifested in an increase in the volume of themes of poetry, increasing ideological-content scale, a variety of formal searches, a bright expression of the individual method, improvement of the aesthetic-artistic function. A deeper study of the psychological world and the inner life of man, the different poles of his character, the artistic study of the various changes of personality and multi-layered reality, philosophical and psychological description, being the fruit of these transformations, became a striking indicator that defines the essence of poetry.

It should be emphasized that in the poetry of the period of independence, such themes as the expression of the spirit of modernity, the role of acquired independence in improving the very representative of the nation, free life, a sense of independence of the homeland and national pride are brought to the forefront. Creative features are noticeable in the approaches to the interpretation of these motifs. In particular, if in the poetic ideas of Iqbol Mirza, Khurshid Davron and Sirajiddin Sayyid the fruits of independence are recited in the publicistic spirit, in the poems of Halima Khudayberdiyeva, Matnazar Abdulkhakim and Khosiyat Rustamova they are recited in philosophical conclusions and lyrical digressions on various topics [4].

It should be noted that the improvement of modern poetry is not an easy process. In the first years of independence, authors in pursuit of various formal pursuits and forced artistry have completely forgotten about the social function of the content potential of literature. This flaw has been expunged in recent years. There is no doubt that poetic works are becoming the most effective means of influencing the minds and spirits of our contemporaries in building a sense of identity and national dignity. This, in turn, increases the social and aesthetic function of poetry as never before. A true work of art, coming into being as a result of reflecting the spiritual needs of the times, is considered unique not only from the formal and methodological side, but also because it is transformed, perfected in terms of content and social significance. As a result, such principles as moral, religious, Sufi, spiritual views that enrich the national and universal ideas, deepening the description of the spiritual landscape, the synthesis of genres and poetic forms, diversity in the interpretation of the lyrical hero comprehensively enrich and modify the poetic reproduction of reality.

This allows us to evaluate the currents as a natural, more improved continuation of the methodological techniques of the 1990s, because these changes became the basis for the following stylistic trends in social lyricism:

1. Publicistic. This widespread direction of contemporary lyrics concentrates the principles of the call to praise the homeland and man, temperamental pathos, realistic expression of national pride, dignity, analytical thinking in self-awareness and self-expression, humanism of life (E. Vahidov, A. Oripov, H. Davron, Sh. Rakhmon, I. Mirzo and others).

2. The social and philosophical. In art and aesthetic generalizations deep meaning, rich social content and intellectuality, spiritual purity and high sense of humanism, the expression of the problems of personal progress and relations of the essence of society based on universal ideas (A. Aripov, Sh. Rakhmon, M. Abdulkhakim, M. Yusuf, S. Sayyid, A. Suyun, O. Khajieva, T. Kakhar, A. Kutbiddin, and others).

3. Symbolic-allegorical. The culture of symbolic-allegorical thinking based on symbols and metaphors is one of the modern trends. In such examples of poetry are dominated by deep psychological experiences, thinking with the help of imagination, the revision of the inner world of the individual, the purification of the soul, the freedom of conscience, soul changes, the diversity of ethical content, and other distinctive features (Rauf Parfi, Fakhriyar, Bahram Ruzimhammad, Farida Afruz, Halima Ahmedova, Salim Ashur, Aziz Sayyid, Hasiyat Rustamova, Guzal Begim, and others).

4. Popular direction. This category includes lyrical works where folk spirit under the influence of folklore prevails (T. Sulaiman, "By Bakhshi" by U. Azim, "Mukhammas to folk songs", "Ancient Lullaby" by Z. Mirzaeva, as well as poems by A. Suyun, Kh. Khudoyberdiyeva, H. Askarova). Firstly, the principles of description peculiar to folklore works, folk methods, motifs, themes, and images are being introduced into the works of this school, and are becoming a determining factor in the style of some poets. Secondly, the creative approach to folklore, giving poetry a melodic and rhythmic feel, strengthens the lyricism of experience [4].

In conclusion, at the new historical stage of the development of society, both the history of the people and the problem of preserving the language, attitude to the cultural heritage and spiritual wealth accumulated by ancestors began to be comprehended in a new way. The analyticity of poetry has increased. In poetry, outdated ideas are being destroyed, new concepts, a new attitude towards social, economic, environmental, political, philosophical, interethnic and international problems is being formed.



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BASIC CONCEPTS OF RHETORIC AS THE SCIENCE OF EFFECTIVE SPEECH

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ABSTRACT

The article under discussion depicts basic concepts of rhetoric as the science of effective speech. As the author of the article considers rhetoric does not belong to any epoch or concept, but is a universal phenomenon of culture. Rhetoric teaches culture, communication, creativity and dialogue. Today, rhetoric as a theory and practice of thought-speech activity, being in demand and returned to the educational system, is primarily aimed at the formation of a value-oriented attitude toward the word.

KEY WORDS: Rhetoric, culture, communication, creativity, dialogue, the modern period, Aristotelian rhetoric, public, official, scientific, audience, construction of the text.

DISCUSSION

Rhetoric is the science of the Classical Antiquity, the cradle of humanistic knowledge; it was the foundation of poetics, literary theory, and stylistics, and has undergone a rapid development in the modern period. Classical rhetoric defined the rules of representation, thought formulation, construction of the text, and delivery of speeches in front of the audience (Aristotle, Cicero, M.V. Lomonosov, etc.).

Modern rhetoric is the successor of the ancient Aristotelian rhetoric. Its primary goal is to find the best means of persuasion, has additional goals. These include the search of the best variants of mutually constructive dialogue, ways to arrange and preserve the contact between the speaker and the audience; the study of the structure of communications and of texts of particular genres which are oriented to a concrete speech situation; questions connected with the rhetoric of radio, TV, advertising; the language taste of different spheres of activity; the trends appearing in the process of mass usage of various media. Rhetoric has expanded its sphere of influence, encompassing diverse areas of communication: from public, official, scientific and business to everyday life, both oral and written [1].

Modern rhetoric, reflecting the most urgent problem of constructive communication, is a new philosophy of speech communication, which aims to study the theory of building a communicatively

adequate text (depending on the target setting), which actually exists as a genre, and to form on this basis the speech mastery at each stage of classical canon (invention, arrangement, expression, memorization and pronunciation of public speech).

The French say, "silence is more distant than distance". A person who is not able to keep up a conversation, to participate in it, feels superfluous in society, and therefore tends to loneliness. The need to share one's thoughts and feelings, to hear someone else's opinion and to know the thoughts and feelings of others is inherent to him - as it is to all human beings. This need, left unfulfilled, creates mental discomfort, generates various complexes: a sense of inferiority, fear of people. And as a consequence, there are difficulties in all spheres of life - both in everyday life and in professional activities. Such people usually lead an isolated way of life, they do not have friends, it is difficult for them to create a family. In their career they are also bypassed by "sociable" and "talkative" - communicative colleagues. And in any work team, the most favorable impression is formed of those employees who can intelligently, interestingly express their opinion on professional issues (not to be confused with talkative people who like to put in a word here and there), explain and defend their opinion, convince them of their rightness.

Rhetorical (oratorical) skill is not only the ability to speak beautifully, it demonstrates different



aspects of a person's personality, his cultural and intellectual level, readiness to communicate, etc. Thus, for example, Marcus Tullius Cicero said, "eloquence is something that is even more difficult than it appears, and is born of so much knowledge and endeavor. In his treatise *On the Orator* (55 B.C.) on eloquence, Cicero wrote: "I have repeatedly looked out for people who are extraordinary and gifted with extraordinary abilities, and this led me to this question: why among all the sciences and arts has eloquence produced the least remarkable representatives? The history of Rome produced many great generals, politicians, philosophers, mathematicians, poets. But good orators have been scarce for a very long time, and there is hardly one in every generation". Cicero goes on to explain: "Was it not because little attention was paid to the science of eloquence? Not at all. Surely nothing has ever been studied in our country more arduously than eloquence. There was hardly a single ambitious young man who would not have tried to learn the art of oratory. It promised rewards, popularity, influence, and respect. Considering all these circumstances, are we not justified in wondering why, in all the history of the generations of these nations, we find so few orators?" [2]. The answer to this question probably lies in the difficulty of the subject of "Rhetoric," the task of which is to teach the skillful mastery of the word in speech, i.e., the art of eloquence.

This revival of rhetoric has begun in the mid-20th century in the West and in the East (Japan), where the theory of information, which requires generalized theory and logic of humanitarian knowledge, has been developing rapidly.

Modern times are marked by capitalization of society and the struggle of the masses for its democratization. These factors contribute to the revival of political and judicial redoubt. Political speech evolved primarily in the process of parliamentary debates. The development of judicial eloquence was conditioned by the processes of democratization of bourgeois society, which are objectively impossible without the formation of a legal basis.

Sociologists determined that modern man spends in oral communication more than 65 % of his working time. According to scientific data, it takes the average citizen of the Earth 2.5 years to hold a conversation. This means that *homo sapiens*, the intelligent human being, was and still is *homo eloquens* - a person who speaks. In many situations, a person speaks not only to inform his or her interlocutor, but also to influence him or her: to persuade, to dissuade, to disprove, to bring joy. Do we need rhetorical knowledge so that a speaker's speech will not leave the listener indifferent, but will call to agreement or action, change lifestyles, worldviews, etc. It is clear that the mastery of

rhetorical theory and the art of eloquence must be the goal of every orator.

Modern rhetoric, as a successor of ancient Aristotelian rhetoric - the objective of which is to find the best means of persuasion - has additional tasks: to find the best variants of mutually constructive dialogue, ways to establish and keep contact between a speaker and a listener; to study the structure of communication and texts of particular genres, oriented on a concrete speech situation; to study issues connected with radio, TV, advertising rhetoric, the linguistic tastes of different spheres, the trends which appeared in the mass media. As we can see, rhetoric has expanded its sphere of influence, covering various spheres of communication - from public, official, scientific and business to everyday life, both oral and written.

The definition of rhetoric, given in explanatory dictionaries as the science and art of eloquence, persuasion by word, cannot be unequivocally accepted today, since, according to contemporary scholars: "Rhetoric teaches the culture of speech and the creation of a reasonable statement" (A. A. Volkov); "Rhetoric is the science of effective communication" (T. A. Ladyzhenskaya); "Rhetoric is a theory and skill of expedient, affecting, harmonizing speech" (A.K. Mikhalskaya); "Rhetoric is not a scholastic science and not a dead art. Rhetoric is a living creative act, and comes into being at the moment when a person feels the need to express what he/she is thinking and feeling, to share it with other people, and to convince them of its rightness. Creativity which aims at making a part of our experience and consciousness become the experience and consciousness of another. In the same way, real poetry is never born of epithets, metaphors and comparisons. Living rhetoric is born out of the need to communicate with other people" (V. F. Rusetsky) [4].

Based on our definitions of rhetoric as a philological science, we can state that modern rhetoric is the theory of speechmaking and the practice of creating an appropriate, influential and effective statement, actually existing in the form of a genre.

The subjects of modern rhetoric include:

- 1) General rhetoric with its main sections: the rhetorical canon (speech system of special laws and rules), oratory (theory and practice of public speaking), the skill of argument (theory and art of argumentation), the art of conversation (speech behavior of a person in a conversation), strategy and tactics of communication;
- 2) Private rhetoric (speech laws of spheres of professional activity: rhetoric of court, academic, political, church-theological, social and everyday life, etc.).

The foundation of rhetorical education at the present stage consists in preserving the continuity of



classical and modern rhetoric, which is pedagogically and practically oriented, which aim is to provide an understanding of the primary elements of the process of speech communication and formation of abilities and skills necessary for creation of expression and effective communication in any speech situations.

In conclusion, rhetoric does not belong to any epoch or concept, but is a universal phenomenon of culture. Rhetoric teaches culture, communication, creativity, dialogue. Today, rhetoric as a theory and practice of thought-speech activity, being in demand and returned to the educational system, is primarily aimed at the formation of a value-oriented attitude toward the word.

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ORGANIZATION OF DEMO LESSONS IN RUSSIAN LANGUAGE IN TECHNICAL UNIVERSITIES

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ABSTRACT

This article is devoted to the issues of teaching Russian language in groups with the national language of instruction in non-philological universities. The article discusses the principles of approach to the assessment of pedagogical skills through demo lessons, which use various methods of innovative educational technologies, interactive tasks: "Pen on the table", "Domino", "Knew. Want to know. Have known", a Blitz survey, work in small groups (pairs), etc. Demo lessons, which are a source of innovative experience and pedagogical skills, provide a higher efficiency of the educational process.

KEYWORDS: *teaching of the Russian language, education, open class, methods, pedagogical skills, educational process, educational technologies.*

INTRODUCTION

New trends in development of the Uzbekistan Republican education system determine the processes of renewal in the political, economic and social life of society. New conditions of the labor market demanded a revision of such an important document as the Law of the Republic of Uzbekistan "On Education", which was adopted in a new edition on September 23, 2020 [1]. The document aims to regulate relations in the field of education, the formation of highly qualified, competitive specialists for all spheres of the republican economy and society. These tasks closely linked with the educational impact of teachers on the formation of a specialist's personality and the need for masterful teaching of academic disciplines at all stages of lifelong education.

The modern methodology of teaching the Russian language aimed at preparing students for the independent fulfillment of various communicative tasks arising in the process of human activity, the search for the necessary information. The implementation of innovative approaches to teaching the Russian language in national universities

promotes the activation of students' activities, allows diversifying the learning process, increases interest in the language, stimulates their creativity and thinking, contributes to broadening their horizons, speech culture, and the introduction of integration processes. Republican higher school today is actively introducing new teaching technologies, which based on the latest achievements of psychology and didactics. They embody the collective intelligence and experience of many generations of theoretical psychologists, academic educators and educational practitioners in communication.

Based on his own experience, the famous teacher V.N.Sorokin-Rossinsky noted: "The teacher influences the pupils not only by what he teaches, what he teaches and what he says, - the teacher educates, first of all, directly with the whole person, with all his spiritual appearance ... "[3].

The ability to influence others includes didactic, organizational, constructive and communicative skills, as well as methods of making demands, managing communication, organizing collective creative affairs, etc. All these skills, skills,



pedagogical experience are mandatory when conducting a modern lesson or class.

Pedagogical excellence implies a humanistic orientation of the teacher's personality, his professional knowledge, pedagogical abilities and pedagogical technique; it presupposes the teacher's mastery of the ability to control himself and the ability to influence others. As V. A. Sukhomlinsky noted, "every teacher must be a skillful educator of the student's mind; this is the law ... "[5, p. 8].

LITERATURE REVIEW

Fundamental provisions and general scientific methodological approaches of A.P. Avdeev, A.B.Barannikov, A.M. Matyushkin are devoted to the problems of education and self-education; development and self-development of personality - B.G. Ananyeva, L.S.Astafieva, A.S. Makarenko; organization and development of an integral pedagogical process - Y.K Babansky, P.L Galperin, M.A Danilov, V.V Kraevsky, B.T Likhachev, V.A Slastenin, etc .; the formation of cognitive interests and needs - B.C. Ilyin, V.A. Sukhomlinsky, G.I. Shchukina, K.D Ushinsky and others; development of creative activity and independence of students L. S. Vygotsky, P. I. Pidkasiy, T. I. Shamova, I. P. Podlasogo and others.

The works of the above authors were the theoretical basis for the study of this research topic. The authors took personal part in obtaining the results of the study, the general concept, and the methodology for carrying out work on this problem. The methods of educational technologies used in practical classes for teaching the Russian language at a technical university. Open classes held in the educational process have become a kind of testing ground for the introduction and testing of technologies and methods of education.

MATERIALS AND METHODS

The subject of our article is to consider the principles of an approach to assessing pedagogical excellence through the prism of open classes. Some experts argue that an open lesson should be conducted as usual, others - that students need to be prepared for such an activity. An open lesson is a form of advanced experience, the result of a teacher's methodological work, additional education and an effective element of the educational and educational process. Participation in an open lesson helps other teachers to critically evaluate the entire system of work and arouses a desire to improve it, makes it possible to objectively approach the assessment of the teacher's skill, since "the teacher prepares for a good lesson all his life" (V. A. Sukhomlinsky) [4, p. 2].

In educational practice, most often do not distinguish between open and ordinary classes, where the national contingent of students, as a rule, is

heterogeneous, and the base of knowledge of the Russian language leaves much to be desired. Even focusing on the majority, the teacher has no right to lower the level of the lesson. However, in contrast to the usual, open class is still a specially prepared form of organizing methodological work. It is in such classes that the real educational process takes place, where the teacher demonstrates to his colleagues his positive or innovative experience, the implementation of a methodological idea, the application of a particular teaching method.

Since it is recommended to conduct an open lesson under normal conditions and with a generally accepted duration, we propose, as an example, to consider the main stages of conducting two open lessons: one in a regular classroom, the other in a classroom equipped with modern technical teaching aids.

In order to design and conduct an open classroom lesson on the topic "Russia: history, literature, culture", we draw up a technological map, a model of educational technology or a scenario. We prepare a set of documents defining the methodological support of the lesson in advance: a technological map, a model of educational technology, a script, a teaching material for the Russian language, didactic materials; tables: in grammar, vocabulary, examples of forms of interactive learning used (diagrams, tables), photo collage. The most active students can be involved in the preparation of the lesson.

Since the lesson is held in a regular classroom, where there are no basic technical means (computers, video equipment), then we approach its preparation creatively, using additional reserves. An important part of this lesson is a photo collage. We prepare it without much effort and cost. We select illustrations that reflect the attributes of the state of Russia (flag, coat of arms, geographical map, portrait of the president, as well as the most famous monuments and museums of the country, portraits of famous writers and artists). We attach illustrations on the back, clean side of any table (there are plenty of them in any department) using scotch tape. After being used in an open lesson, the illustrations are placed in a folder and can later be used in regular lessons as visual material.

The grammar tables of the open lesson reflect the grammatical topic "The meaning of comparison in simple and complex sentences of the Russian language." New thematic vocabulary given with translation into the native language.

An open lesson, as a rule, begins with an organizational moment. We announce the goals and objectives of the lesson acquaint students with the order of work in the lesson. Using the "Pen on the table" method, we repeat parts of speech and members of a sentence of the Russian language with translation into the native language. We repeat and



generalize the previous topic ("Advertising genres. Official business style and its genres").

In order to attract the student audience to the discussion of a new topic and activate their thought process, the teacher, with the help of leading questions, clarifies the knowledge of students about Russia: where the country is located, what are the attributes of the state, who is the president, which of the writers, artists, and cultural figures they know. The presence of a collage helps students navigate the answers to questions. Only after that, the teacher expounds his information about Russia (no more than 10 minutes, since the national contingent of students is simply not able to assimilate much information in one lesson). Using a photo collage, the teacher focuses students' attention on basic information about Russia: the geographical position of the country, the size and composition of the population, inherent features: the presence of the deepest and largest lake (Baikal), the longest river in Europe (Volga). The cold pole of the Northern Hemisphere (Oymyakon) ; shows which states the country borders on, which seas it is washed by; shows on the map the length of borders and the total area, informs about the forms and subjects of government, minerals, memorable places: museums, monuments; names famous scientists, writers, artists, figures of history and culture of Russia. In order not to be carried away and save time, the abstract information can be prepared in advance.

RESULTS AND DISCUSSION

We outline the lexical-grammatical topic based on tables. Students read new words with Approximate filling of the table:

Knew	Want to know	Have known
1) The Tretyakov Gallery is located in Moscow. 2) There are paintings, sculptures, graphics.	1) Pictures of which artists of Uzbekistan are represented in the gallery? 2) Who is funding the museum? 3) Which museums in the world have paintings by Russian and Uzbek artists?	1) The first private collection was created by Pavel Mikhailovich Tretyakov. 2) The gallery owes its name to the Tretyakov brothers. 3) More than 2 million people visit the museum annually.

Then the students make a presentation of their work.

Another important point of the main stage is working with speech etiquette to create communication situations using comparison formulas. The teacher offers several situations to choose from: a conversation between a teacher and a student; the situation in the canteen, in the laboratory, in the stadium, students make up micro dialogues. The teacher marks the best.

After completing the main stage of the work, the teacher sums up the results, invites the students themselves to evaluate the successes of their

translation into their native language, make sentences with them. Consolidation of the grammatical topic "Expression of the meaning of comparison in a simple and complex sentence" performed orally and in writing with the help of exercises and relying on the second table with prepositional-case constructions and comparison unions. For the same purpose, we introduce the interactive technique "Domino": we collect proverbs and sayings with the meaning of comparison and juxtaposition in the form of dominoes. This method will relieve the tension of the audience, activate freethinking, replenish the student's vocabulary, and acquaint with folk vocabulary and, as a result, will make it possible to use new proverbs and sayings in their own speech.

Next, we divide all students into 4 groups. Two groups make up a Venn diagram for the comparative and distinctive features of the states of Uzbekistan and Russia. The other two - on the same basis - Tashkent and Moscow.

We use this method to compare, contrast or contrast two, three aspects, showing the common or distinctive features of two states. This form of consolidation of knowledge will contribute to systems thinking, the ability to compare, contrast, analyze and synthesize.

The next step is to work with the text "Tretyakov Gallery". We read and comment on the text, find new words, explain, translate into our native language, answer questions about the text. We invite students to fill out the "K.W.K.HK" table. One or two students work at the blackboard, the rest in the field. Who can fill in the table individually.

comrades. Writes down the homework assignment and evaluates the work done.

Upon completion of the work, students are informed of the points they have gained during the open lesson.

The second type of open lesson on the topic "Business World" (2nd lesson). As we have already noted, this type of lesson is conducted taking into account the urgent problems of methodological science. The lesson is conducted in a classroom with computer support. It reflects the solution to the methodological problem that the teacher is working



on and is designed to show the advantage (high efficiency) of innovation.

The lesson contains both theoretical and practical material, in the amount that students can learn.

The possibilities of the classroom equipped with technical teaching aids are certainly much wider and more effective, since almost all the material being studied is introduced into the program. It contains a complete set of documents that determine the methodological support of the lesson: teaching materials, teaching aids, technological map and model of educational technology, multimedia material, tables, diagrams, dictionaries, interactive tasks and other material.

The procedure for conducting an open lesson is the same. After acquainting students with the goals and objectives of the lesson, as well as with the order of its conduct, the teacher, while repeating the covered topic, can use such interactive forms of teaching as a blitz survey, "Pen on the table", presentation. Students conduct a presentation of their

homework: they present their samples of advertising, determine its forms and types (visual, auditory, visual-auditory; informative, exhorting, reminiscent).

In order to consolidate the topic, it is proposed to discuss the concept of "What is he, a business man?" through the game "Sunflower" and trace how a person grows and forms. We planted a seed. It grows, the first leaf is a kindergarten, the second is a school, the third is an academic lyceum or college, the fourth is an institute, and a flower "Sunflower" has formed. Its center is a businessperson. The teacher distributes "petals" to students; each of them has the character traits of a businessperson. They choose from a variety of petals exactly those character traits that should be inherent in a businessperson and complement the sunflower with petals. This game can be played on the computer, or on the board.

We carry out the fixing of the business papers topic using the "Business documents" categorical table.

Name of the document	Name of the document
Receipt Autobiography Statement Power of attorney Ad	

Since each student has a computer on his desk, this type of work is done individually. Having opened a certain file as instructed by the teacher, students fill out the table.

The next stage of work is a new topic "Commercial Correspondence". The teacher demonstrates slides that define all types of commercial correspondence, which are accompanied by sound: What is a letter? What are its features? What letters can be by subject, function, addressee? The slides highlight the typical language formulas used in the introductory, body, and concluding parts of a letter. Attention is also drawn to how a letter of offer (offer), a letter of complaint, a letter of response, an agreement (contract), an employment contract are drawn up. In the work on a new topic, not only visual information is involved, but also auditory information, what the students themselves see, listen to and read. This form contributes to a

better assimilation of the theoretical material of the new topic. After watching the slides, students ask questions, clarify, express their opinions and demonstrate their knowledge in this area.

On the next slide, students are asked to complete the task: using language formulas to complete sentences. For instance:

- 1) In support of our preliminary agreement ...
- 2) In response to your letter ...
- 3) We are forced to inform you that ...
- 4) As per your request ...
- 5) We express our hope for the continuation of our ...

Further, a new task - the method "Who is more". Students are invited to pick up more words with the letters of the word "document" within one minute (the use of words corresponding to the topic of the lesson is only encouraged):

- Д** – дело, дом, дипломат, деятельность, деление,
О – огромный, ответ, открытие, один, опыт...
К – компания, Карши, критерий, коммерция, который, казна, колледж ...
У – учёба, университет, убеждать, усилие, увеличение, учение, Узбекистан...
М – механизм, Москва, моральный, много, музыка, машина, можно...
Е – если, естественно, его, ель, ежедневно, ежегодно, ежемесячно, еженедельник, ...
Н – норма, новость, наш, независимость, надежда, нарушать, новый...
Т - транспорт, течение, Ташкент, традиция, территория, Тимур ...



This work is carried out in pairs, it can be done both orally and in writing. The result of this work is a homework assignment from a textbook on the Russian language - two exercises on drawing up commercial documents, as well as a poem by S. Ostrovoy "And let it be hard in life."

5 tests on a computer help to complete the stage of work on a new topic, which are immediately graded. The teacher summarizes the results of the work and announces to the students the points they have gained during the lesson.

As we can see, the computer support of an open lesson provides a higher efficiency of the educational process.

CONCLUSION AND FUTURE SCOPE

Both of the activities described above can be a source of innovative experience and teaching excellence.

Pedagogy claims that the personality of the teacher has a great influential force that cannot be replaced by textbooks, or technical teaching aids, or moral maxims, or a system of punishments and rewards. Specialists consider pedagogical skill "as a complex of personality traits, providing a high level of self-organization of professional pedagogical activity" [2]. The formation of certain components of the professional competence of teachers reflects the degree of their readiness for professional activity. The effectiveness of the professional activity of a university teacher depends on many factors. The constant development of the professional competence of a university teacher can help to increase the effectiveness of his professional activity.

The use of pedagogical technologies, undoubtedly, will ensure the high efficiency of the educational process. It is only important not to overdo it in the number of interactive tasks, take into account the degree of preparedness, the level of knowledge of the audience, be able to vary the types of work, make the necessary decisions in time in unexpected situations, give students the opportunity to show initiative and creativity. An open lesson should be relevant to the topic, be novel, conducted in normal conditions with a generally accepted duration. The teacher conducting it must have a high level of scientific and methodological training, and the pedagogical process must guarantee the achievement of the set goals.

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INVESTMENT IN THE FIELD OF TRANSPORT LOGISTICS

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ANNOTATION

Today, large-scale investments in the development of the market of transport and logistics services and the expansion of transport and transit opportunities of our country are involved.

KEY WORDS: *investment, transport, logistics, economy.*

DISCUSSION

However, the lack of a single policy related to the implementation of investment research and innovative works in the field of transport Logistics, as well as the development and improvement of the system of introduction into production, does not allow sufficient application of new techniques and technologies and advanced foreign experience on the account of investments in the market of transport services.

It is known that the volume of 90 percent of the period from the creation of products and services to the delivery to consumers coincides with the processes of transport and logistics, which include the management of purchases, the management of reserves, warehouse work, the management of product distribution, the processing of cargo, packaging, increase-drop, logistics information technology and integrated logistics systems. The provision of safe, high-quality and affordable cargo and passenger transportation and other transport and logistics services to the population and economic sectors is a direct link to the efficiency of the implementation of these processes in a flexible way.

This basically determines the direction of the investment activity of these enterprises and puts in them strategic tasks, for example, the effective combination of their own funds and borrowed capital, the assessment of the level of risk of various types of activities and the achievement of their balance sheet, as well as the involvement of professional management personnel for planning and implementation.

A strong competitive environment dictates the maximum use of all means and methods of production management in order for the vehicle operators to fully utilize the service potential. A positive solution to this issue can be achieved by maintaining the production policy at the required level at the enterprise. This policy is aimed at strengthening and expanding the position of the enterprise in the selected market segment, increasing the number of customers, ensuring the achievement of superiority in the competitive struggle and ultimately increasing the volume of profit by defining the Basic Rules at the stages up to the selection, creation, tariff designation and provision of transport and logistics services to customers. Such: achieve resource savings; increase in the volume of transportation and logistics services; at the same time, instead of reducing the cost of services and increasing its volume, the resultant provision is achieved.

It is known that the provision of transport services in the scientific literature on today's transport economy is studied into 3 basic processes: transportation, auxiliary services and supply processes.

The issues of the organization of the production management process are considered separately in the scope of each of the basic processes. Because management in the system of provision of transport services is a one-time or without some actions, but rather a complex combined process among themselves. Management of basic organizational processes is a relatively independent, but interrelated set of functions.



Therefore, the strategic need to create horizontal integrated and diversified structures in automotive transport Enterprises is based on the need to achieve the synergistic efficiency of economic activity. The term synergetic comes from the ancient Greek language, which means communion, United State, cooperation, assistance, participation or support, assistance.

In the first paragraphs of our work, various sources of financing of investment projects, in particular, equal partnership, strategic joint financing, various forms of lending (loans of our country and foreign banks, lending and export agencies, the market of bonds), as well as sources of financing through the cooperation of public and private sectors and infrastructure organizations were discussed.

According to the results of the study, through the organization of the corporate investment process, it is possible to ensure the strategic competitiveness of the enterprise in the market, the efficiency of investment resources, the overall corporate risk level is relatively low, and in the future the market value of the enterprise will increase.

It is worth noting that it is difficult for an enterprise to achieve the effectiveness of investment activity without applying such principles and approaches in the selection of investment projects and programs that allow it to invest limited capital in the most optimal areas of activity.

Effective investment decision making and selection of the most suitable projects require job visibility based on certain systematized criteria. In our opinion:

- Strategic compatibility of projects;
- Economic effective;
- Availability of real options for future development;
- Compliance with current and future regulatory laws and legislation;
- Compliance With creditors requirements;
- the availability of internal resources can be noted as the most basic of them.

This approach, which is proposed to determine the criteria for the selection of projects and the formation of investment portfolios, is considered relevant for today's economy, takes into account all the main factors of competition and is aimed at increasing the effectiveness of long-term investment activities.

It is difficult for modern enterprises to carry out their activities without the use of an effective and continuous risk management system. This allows not only to collect and process data on various parameters of the enterprise's activities in market conditions, but also to reduce losses and uncertainties in areas such as sales of finished products and purchase of raw materials, capital construction, borrowing in financial markets, production of technological equipment. At all stages of the

investment activity of the enterprise, the task of managing and controlling the risks of continuous use in the management of risks is laid down.

This can be achieved through the proper use of strategic analysis and modeling tools and principles for effective strategic and investment planning for automotive transport enterprises. The purpose of such modeling is an expression from a detailed calculation of the alternative variants of all investment projects, which can affect the development strategy of the enterprise, its position in the market, its capitalization or the sphere of economic activity.

The essence of strategic modeling, taking into account the analyzed alternative variants of strategic development, implies the creation of dynamic financial models with a wide range of activities of the enterprise in the future. In addition, various investment projects and initiatives are included in the main scenario of enterprise development, which also serve as an effective tool for analyzing the impact of enterprise-investor relations. This approach will help to better understand the prospects for the development of transport enterprises within the framework of planned investment programs, high-risk and large-scale investment projects.

There are several factors to consider when predicting the future activities of any transport enterprise. First, the automotive transport enterprise needs a large amount of investment in order to modernize its content in its existing movement and acquire new ones, which in turn leads to a decrease in profitability, an increase in the cost of transportation, as well as additional costs for the provision of services to bank loans. Secondly, the increase in the price of lubricants and other energy resources leads to a decrease in revenues, slowing the development of new projects and their resumption. Finally, the regulation of tariffs for socially significant transportation increases the risk of the transport services business due to the uncertainty of the future amount of profit.

With the use of project financing tokens, it is possible to accurately reproduce investment risks among various project participants, including its initiator, creditors, the state, suppliers of goods and consumers. Financing investment projects on the basis of multilateral agreements allows to minimize the uncertainty of future cash flows and increase the investment attractiveness of projects.

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THE ROLE OF ICT IN THE HIGHER EDUCATION SYSTEM

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ANNOTATION

In our time, the country has a strong system of education and upbringing, which harmoniously combines modern technologies. In the corners of the republic, the national program for training personnel, the state national program for the development education are consistently implemented, which give significant results of raising the training of qualified specialists to a qualitatively new level, cardinal reform of the education system, and training of the younger generation.

KEY WORDS: *ICT, education, quality of education, innovation, interactive methods, pedagogic technology, higher education.*

DISCUSSION

Teach the student to work, make him not only love work, but become so close to it that it becomes his second nature, teach him that it is unthinkable for him otherwise than by his own efforts to learn something; that he independently thinks, searches, manifests himself, develops his dormant forces, develops a persistent person. Pedagogical practice in computer science is a fundamental element in the preparation of a methodically competent computer science teacher. It helps to enrich and consolidate the knowledge gained at the university in pedagogy, psychology, private methods, social and special sciences, allows future teachers to get acquainted with the peculiarities of teaching computer science in this class (school), with the educational and methodological manuals used there, software, computer class. The main task of pedagogical practice: mastering the skills and practical skills of a computer science teacher in a modern school. The terms of the teaching practice are determined by the curriculum. The practice is based on the principle of constantly increasing independence of students in the preparation and conduct of lessons, extracurricular

and extracurricular activities. Preparing for practice, students should:

- get acquainted with the mandatory minimum content of education for the course of computer science and computer science programs;

- study the actual material of school textbooks on computer science for the relevant classes;

- get acquainted with the latest methodological literature on computer science, visual aids, software tools;

- get acquainted with the notes, visual aids and other materials of students-interns of previous years of study. The main content of pedagogical practice in computer science: The first week of pedagogical practice is observational. At this time, students should:

- get acquainted with the school, study the class in which the practice is conducted;

- study the programs, textbooks, educational and visual aids in computer science used by the teacher;

- get acquainted with the computer science classroom, computer class, software;

- visit and analyze the lessons of a computer science teacher both in the classroom where the



practice will take place, and in other classes where the teacher works;

- prepare calendar and thematic planning of educational work;

- start preparing lesson notes and extracurricular activities. The following weeks are an active student practice, during which students must:

- develop lesson notes and extracurricular activities, including the selection or creation of methodological and software;

- conduct computer science lessons of different types using a variety of methods and technical means of teaching, as well as analyze computer science lessons;

- conduct extracurricular activities on the subject (at least 2);

- attend and analyze computer science lessons conducted by other students and teachers;

- assist subject teachers who want to use computers in teaching, participate in the development of educational software necessary for the school;

- take part in the work of the methodological association of computer science teachers, other events;

- to draw up documentation on pedagogic practices;

- to participate in the preparation of reports on one of the methodological topics for the final conference on pedagogic practices at the faculty;

- to take part in the final conference at the faculty. Every computer science lesson is on the one hand a complete development system, and on the other-an integral element of the set of lessons on the educational topic and the educational subject. That is why the work of a subject teacher is based on a clear preliminary and direct planning of all his educational activities. The preliminary stage is associated with the construction of a system of lessons on the topic under study (thematic planning), and the immediate stage is associated with the development of the next lesson. During the pedagogical practice, students should get acquainted with the annual, thematic plans of the computer science teacher, with the plans of the notes of his lessons.

Then, with educational and methodological manuals, additional literature, and software used by the teacher. Next, together with the teacher and the methodologist, you should make your own thematic planning with the names of the topics indicated; the general didactic purpose of the system of lessons on each topic; the names of the lessons; their types; general teaching methods; equipment, software; the main sources of information for the teacher and student. Drawing up such thematic plans reveals to the trainees the prospects of their activities, creates an idea of the placement of semantic accents and the distribution of material in the lessons, helps to ensure the rhythm of the educational process, prevents unjustified time spent on studying some issues to the

detriment of others, contributes to the normalization of the load of students. As for the direct preparation of the student-trainee for the lesson, this activity is associated with the definition of:

- The goals of the lesson and focusing on the most significant results;

- The didactic apparatus - the content, methods and means of teaching necessary to achieve the set goals;

- The structure of the lesson. Preparation for a computer science lesson takes from 2 to 3 hours (if you have to learn new software, then the preparation can take much longer). The results of this work are made out in the form of a lesson summary, which is an important document when conducting it, since the ability to fix the structure of the lesson and detail each of its constituent elements ultimately affects the organization of the lesson. An important role in mastering pedagogical skills is played by attending the lessons of the teacher and other students.

At the same time, students observe both the activities of the teacher and the activities of the students. Such work contributes to the methodological literacy of the future teacher, develops the ability to analyze their own and other people's activities in the construction of the lesson. The analysis of a computer science lesson is a comparison of the proposed educational, educational, developmental and practical goals and the results achieved. Its purpose is to identify methods and techniques of organizing the activities of teachers and students in the classroom that lead or do not lead to positive results. With the help of the general scheme given below, it is possible to conduct both an analysis of the lesson during mutual visits, and self-analysis. Monitoring of students' activities in the classroom can be carried out both directly and indirectly. For this purpose, a plan can be drawn up and a program of observations can be developed. At the same time:

- the perception of the general background of students' employment is combined with simultaneous control over their group and individual actions;

- observations are made on the degree of student activity;

- the share of individual participation against the background of the general activity of the group is traced;

- the attitude of students to joint work, the attitude of students to tasks, to activities related to working on the computer is observed.

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APPLICATION FORMS IN UZBEK AND GERMAN LANGUAGES

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“The conversation begins with an appeal, and how it will continue is more connected with this first word” - said, author of the book “the criterion of communication” Siddiq Muminov.

Every word that comes out of the language testifies to the fact that our speech is exaggerated, our culture is higher, we do not forget about ourselves. Hence, forms of Appeal are one of the main factors determining the culture of circulation of each nation, in this way the speaker not only tells the listener his

attitude, but also demonstrates his level of culture and general level.

In German “Anredenominativ” and “Anredepronomen” there are forms of appeal, in the Uzbek language, Anredenominativ is a consonant in the nominative form, Anredepronomen is a consonant expressed by the pronoun – personality. Anredenominativ-a consonant in the nominative form the noun in the genitive case, expressed in a noun, does not have a grammatic connection with the parts of speech. The consonant can come in the beginning, in the middle and in the end of the sentence.

Uzoq vaqt qayerda edingiz,
Müller honim?
Buvi, yangi yilga menga nima
sovg'a qilasiz?

Wo waren Sie denn so lange,
Frau Müller?
Oma, was schenkst du mir
zu Weihnachten?

Anredepronomen-in the German language "du" in the sense of the decimal Sense, expressed by the pronoun personality, in the Uzbek language "sen"

is the pronoun personality, in the German language "Sie" in the sense of respect, in the Uzbek language "siz" is the pronoun personality.

Sen, uyga tez borib kel!
Siz, bunisini oling!

Bist du zufrieden?
Sind Sie zufrieden?

The first appeal to a person begins with the name put on him by his parents, of course. It's no secret to anyone that a good name is a beauty to a person.

A highly anticipated newborn child, whether he is a boy or a girl, lends both to parents who put on him suitable, content and beautiful name.

The fact that in the book of the Sh.Kadiri “command of the Kadiri“ parents put suitable and meaningful name on their children, the fact that the person is a sign of respect and esteem for himself, is evident in the following passages.

The father of the Uzbek novel Kadiri showed a lesson in naming his children. In particular, the older daughters were called Nazifa, that is, “immaculate“, to middle daughters Adiba, that is, “writer“, Masud for their younger sons, that is,

”happy“, and the younger daughters Anisa, that is, ”friend“.

Anisa aunt stated one incident:

– One day a doctor woman asked me for my name. I said. Woman: "The name is unique in character. I know three people named Anisa. One is the daughter of Abdulla Kadiri.“

Muzayyana Alavia also called her sons Anis.

Garden our neighbor Huri opoqi also admired us that they named their daughter Anisa“ "

In the appeal to people, nicknames along with name scarves are also of great importance. In the past , among the ordinary people in the Uzbeks, it was common to name a person by name and nickname, since until the beginning of the 40 – ies in Uzbeks there was no mass patronymic of surnames and patronymic. In later periods, Uzbeks were officially



transferred to the Russian surname and patronymic names. But appeals to people with their name and nickname did not disappear at once, but such appeals remained a picture even in later periods. Now the method of naming Uzbeks in such forms as Rahim chuloq, Nazar qovoq, Karim polvon, Davlat qora does not make up the majority, that is, adding a word that expresses his nickname to the name of a person did not rise to the level of tradition.

Proceeding from the above points, how to address someone depends on the aesthetic level of the

For example:

Honimlar va janoblar!

O'rtiq boshliq!

O'rtiq Professor!

Akmal Saidovich!

Nigora Po'latovna!

Sehr geehrte Damen und Herren!

Herr Direktor!

Herr Professor!

Herr Becker!

Frau Müller!

Informal appeals are used in everyday life in mutual communication. Informal appeals can be divided into:

1. Appeals to close people
2. Intimate appeals
3. Anonymous applications

Appeals to close people are observed mainly in the attitude of relatives, friends, colleagues. Reliability, friendliness and sincerity are the priorities in these appeals. For example, "Amaki/Onkel", "Xola/Tante", "Kelinoyi/mit Vorname", "Hamkasaba/Frau Kollegin oder Frau Kollegin+Zuname".

Intimate references are observed in the relationship of lovers, couples, sometimes close friends. In these references, words in the meaning of

For example:

– Kechirasiz, vokzalga qanday borsam bo'ladi?

– Kechirasiz, bu avtobus shahar hokimiyatiga boradimi?

– Ma'zur tutasiz, menga yordam berolmaysizmi?

– Entschuldigen Sie bitte. Wie komme ich zum Bahnhof?

– Entschuldigung, ist dies der richtige Bus zum Rathaus?

– Verzeihung, können Sie mir helfen?

These passages do not reflect the age, gender, social function of the listener vs. there is also no naming/nomination/ of the listener .

Also in the appeal against unfamiliar people who do not have relatives in the German language, the following is used.

Ayol kishiga nisbatan – Hallo! Junges Fräulein (bis ca. 20) (veraltet)

Hallo Sie! Junge Frau! (bis etwa 40) Gnädige Frau (veraltet)

Erkak kishiga nisbatan – Hallo! Hallo Sie! Junger Mann! (bis etwa 40)

Frau: Hallo, Sie haben Ihre Handschuhe verloren.

Mann: Oh – vielen Dank.

The social characterization of the application forms from a young point of view forms the basis of the Uzbek culture of communication. Unlike German nationalities, there are such categories of respect in the national mentality of the Uzbeks that clearly

person, on his intelligence. After all, the use of the official and unofficial appearance of the appeal is manifested in such a way that it depends on the intelligence of each person. In this respect, references in the relationship between people can be divided into formal and informal references.

Official appeals are applied to managers in the labor communities, leading specialists in manufacturing enterprises, teachers and professors who provide education in educational institutions, as well as other high-ranking officials.

pleasant, caress are used. For example, „Azizim“, „Mehribonim“, „Jonim“, „Begim“. Murojaatning bu shaklidan to'g'ri va o'z paytida foydalanish maqsadga muvofiqdir. Shuni unutmaslik ham zarurki, intim munosabatlarda ishlatiladigan murojaatlar tuyg'ular olamiga kirib borishi asosida yuzaga keladi.

Anonymous appeals are manifested in the attitude of unfamiliar people, and in this appeal it is not considered important that the listener is familiar or unfamiliar. Basically any information from unnamed references is sometimes used to express an opinion, in which using as words „Kechirasiz/Entschuldigen Sie“, „Ma'zur tutasiz, uzr/Verzeihung“. The application is made in the form of a question.

show the age of the communists. Such a condition can also be observed in the attitude of people who have no relatives. The fact that the speaker appeals to non-relatives through the terms of kinship is one of the habits of communication peculiar not only to the



Uzbek language, but also to all Turkic languages. When comparing the application forms in Uzbek and German languages, representatives of German nationalities applied to unfamiliar people with the terms of kinship.

In his book "Explanatory Dictionary of the Uzbek language", A.Madvaliyev explained that the terms of kinship are used in speech in relation to people who do not have relatives. If the little ones refer to adults in respect of honor – grandfather/grandmother, grandmother, uncle, uncle, aunt, daughter – in-law/kennel, brother, sister, the adult refers to the little ones-sister, daughter, son, brother. Uzbeks never refer to an alien as "sen".

In German, Günter Kempcke in his book "Wörterbuch Deutsch als Fremdsprache", Tante points out that the terms of kinship, such as Onkel, are used by young children in relation to people without kinship. Tante – meist von Kindern für eine unbekannte erwachsene weibliche Person (als Anrede) benutzt: die, eine Tante hat mir Schokolade, Bonbons geschenkt.

Onkel – von Kindern für eine unbekannte erwachsene männliche Person (als Anrede) benutzt: der, ein Onkel kannst du mir den Weg nach Hause zeigen?

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INTELLECTUALS IN ONLINE COMMUNITIES: A SOCIO-PHILOSOPHICAL ANALYSIS

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ANNOTATION

The article presents an assessment of the reasons and forms of participation of intellectuals in modern online communities, as well as an analysis of the potential involvement of professional producers of ideas in the communicative practices of users of social networks.

KEYWORDS: *intellectuals, network communities, social networks, cultural capital, interactive rituals, civic activity.*

DISCUSSION

The concept of a network society offers an interpretation of the morphology of a modern social organization, the key institutions and activities of the members of which are structured around electronic communications. However, the leading role in the network society is played not by computers or gadgets as products of scientific and technological progress, and not by information itself, but by the ways of its dissemination and the principles of self-organization of participants in virtual interaction. Such a society promotes the development of horizontal relations, in which there is no centralization and rigid hierarchy. Nevertheless, one of the authors of the concept of a network society, M. Castells notes in it the tendency to construct social action and even politics around primary identities, "either ascribed, rooted in history and geography, or constructed anew in an anxious search for meaning and spirituality". By identity, Castells understands the process "through which a social actor recognizes himself and constructs meanings, mainly on the basis of a cultural property or a set of properties". In his opinion, self-identification and self-presentation are the most important aspects of interaction in social networks.

In a networked society, the individual does not remain closed in the virtual space, on the contrary, he receives additional opportunities for the selective expansion of his social environment. Social networks today are virtual forums where the discussion of socially significant issues, the positioning of parties, the accumulation, articulation and aggregation of public interests, and sometimes the mobilization of supporters of civil movements take place. In the aspect of the identity of users of social networks, the rule applies: tell me which communities you are a member of, or whose personal pages you subscribe to, and I'll tell you who you are. The need to represent the virtual self forms the demand of users of social networks for samples of cultural capital-ideas, knowledge, works or texts, participation in which is achieved through involvement in the practice of commenting, reposting and placing "likes". Producers of cultural capital, in turn, also become participants in online communities.

Many popular politicians, journalists, public figures and, of course, intellectuals have their own pages on Facebook or LiveJournal. It was the intellectuals that the French sociologist P. Bourdieu defined as the carriers of this unique resource - cultural capital - imposing on them the obligation to act as the "collective consciousness" of the nation. A network scheme of cultural production, the key



participants of which are intellectuals, is also proposed by the modern American sociologist R. V. Shumakov. Collins, for whom the intellectual world is a grandiose conversation, a cultural capital that circulates both in periodic face-to-face rituals and in writing texts.

The Global theory of Intellectual Change "Collins introduces the concept of an intellectual network, meaning a community of intellectuals who are personally familiar with each other and are involved in the interpretation of the same texts. An intelligent network is strikingly different from other types of social network. First, it is characterized by a special type of self-identification of participants-through participation in the creation of a universal, sacred "truth". Secondly, it is supported by special interactive rituals - joint discussions, reports and lectures that are not aimed at socialization and do not have a practical nature. Various variants of such intellectual networks (intellectual groups, teacher - student chains, and lines of rivalry between contemporaries) create the field of forces in which intellectual activity takes place.

In the interpretation of Collins an intellectual person is his desire for this conversation: the desire to participate in a conversation about the most "hot", central problem, in which ideas have the greatest sacredness, and the desire to give them, if possible, the imprint of his own personality so that his ideas have a wide appeal in the conversation, and with them the personal reputation of the author. Thus, the intellectual network is a highly competitive environment, since the dialogue of intellectuals is always competitive, explicitly or implicitly includes the element of "elbowing", as well as clinging to each other in order to get into the area of focus, and as close as possible to its center. Success in the struggle for leadership is determined by the ability of a professional idea producer to prove that it is his ideas that meet the criteria of novelty and importance.

The logic of the development of the network society since the end of the XX century forms a new type of intellectual - a public intellectual, who is distinguished by a focus on practice, involvement in public discussion of topical issues. The concept of "public intellectual" in its meaning goes back to the definition of "engaged intellectual" used in the 19th century in France, which described intellectuals who criticized state policies and justified the reaction of civil society to the actions of the authorities. The genre specificity of public-intellectual work is determined by such areas as:

- self-popularization;
- development of new ideas in the field of their scientific interests;
- commenting on the current socio-political agenda;
- formulating forecasts;

- participation in the preparation of public reforms;

- literary criticism and political satire;

- expert activity. Due to the development of mass media and the spread of electronic communications, celebrity intellectuals (such as Marshal McLuhan, Stephen Hawking, or Slava Zizek) appear among the public intellectuals.

American sociologist L.Kozer believes that the audience of such intellectuals is not a circle of colleagues or experts, but an educated or semi-educated public as a whole. However, when leading popular blogs, celebrity intellectuals are forced to act according to the laws of the intellectual production market - that is, to offer ideas that matter not in themselves, outside of any time or locality, but that are interesting to their subscribers or members of virtual communities. And as a result, they become more celebrities than intellectuals. In social networks, cultural capital is distributed over the attention space, and the most valuable is the one that can be successfully used in the next round of competition for attention.

Nevertheless, the "network" authority of professional producers of ideas is undoubtedly one of the forms of social capital, the demand for which increases during periods of decline in public confidence in the political elite and institutions of power. In the conditions of socio-political instability, the author's blog or the user profile of an intellectual becomes a platform for direct interaction between professional producers of ideas and subjects of civic activity.

The situation of interaction in social networks is sometimes an interactive ritual of here-and-now communication of intellectuals, opinion leaders and civil society activists. As Collins notes, the micro-situation of interaction is not something individual, but "penetrates through the individual, and its consequences spread outward through social networks to a macro-arbitrarily large scale". The researcher also defines the elements of an interactive ritual, which includes: a group of at least two interacting participants; the focus of the participants' attention on the same object or action, while each is aware that the other is holding this focus of attention; the general mood or emotion of the participants.

The mechanism of interaction consists in the fact that circumstances that combine a high degree of concentration of attention on each other generate a sense of membership associated with cognitive symbols, and give emotional energy to individual participants, making them feel confident, enthusiastic, and willing to act as they consider morally correct. As a result, the emotional energy flows from the situation when users of social networks participate in interactive rituals, to the situation when they are in seclusion, and is stored



here. After some time, the emotional energy fades, and users can again turn to ritual participation to recharge themselves. Of course, the realization of the potential of involvement of intellectuals in the communicative practices of users of social networks depends on objective conditions - the degree of openness of society or the democratic nature of the political system, the availability of electronic communication channels, etc.

However, the integration of professional producers of ideas into civic practices through participation in virtual communication with activists and supporters of social movements today increasingly influences the formation of the repertoire of collective actions, the intensification of communication and the development of the activist environment, and in the future can determine such aspects of the activities of movements as the formation of the identity of movement participants and their supporters; the dynamics of attitudes of civil activists; aggregation and articulation of the requirements of participants of self-organizing groups and movements; methods of action, forms and ways of achieving goals.

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THE ROLE OF PEOPLE'S DIPLOMACY IN THE SYSTEM OF INTERNATIONAL RELATIONS

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ANNOTATION

The possibility of a quick and principled solution to the problem is the main reason for the intensive development of high-level and high-level diplomacy today, but there are other reasons. In particular, at such meetings, it is possible to quickly get the necessary information, exchange views and reach important agreements.

KEY WORDS: *people diplomacy, international relation, politics, meetings, information, development.*

DISCUSSION

The settlement of conflicts and crisis situations is one of the most urgent tasks of modern diplomacy. This was highlighted with particular sharpness by the Caribbean crisis of 1962, which threatened the destruction of all mankind. Finally, the next critical moment was the development of local conflicts after the end of the cold war, when many different conflicts proved difficult to manage. All this stimulated conceptual and practical developments, which in turn contributed to the identification of an independent field of research and diplomatic practice. We are talking about diplomacy to resolve conflicts and crises (manage them). However, in the scientific literature, "crisis management" is often described as a set of actions aimed at achieving the goals of the parties while preventing the conflict or crisis from getting out of control. In this regard, the Australian researcher J.R.Tolkien. Richardson suggests the use of another term - "crisis diplomacy", which implies activities aimed at reducing tension in the context of conflict and crisis. In recent years, more and more attention has been paid not just to reducing tension, but to preventing the development of conflict and crisis situations in the world. This is the so-called preventive diplomacy.

A new feature of modern diplomacy is, in particular, its diversity. If earlier the regulation of international relations by diplomatic means was actually reduced to issues of foreign policy and trade, then in the second half of the XX century the range of issues expanded dramatically. Such areas as disarmament, the environment, terrorism, social issues and many others, including the previously mentioned internal conflicts, have become the subject

of discussion and regulation. As a result, the content of the agenda, which can be the subject of diplomatic discussion, has become much more complicated, and the diplomats themselves have had to master new, previously unfamiliar areas. As a result, in the training of diplomatic personnel in the training programs, along with the traditional courses (regional studies, historical, legal, economic, language), completely new ones have appeared. For example, the Institute of Foreign Service (the leading center in the United States for the training of diplomatic personnel) has introduced courses on drug trafficking, refugees, environmental protection technologies, and possible expansion of markets for the United States.

The dynamism of the modern world, along with interdependence, has significantly changed the information and communication function of diplomacy, the essence of which is, on the one hand, to inform the opposite side about the official position, on the other-to receive similar information from it, as well as to exchange views.

The development of the means of communication in the XX century had a great impact on the information and communication function of diplomacy. Back in the 50s, Mr. Nicholson drew attention to this, noting that in the modern world, a foreign minister can pick up the phone and contact many ambassadors at once. The modern English researcher D. Dunn notes that the emergence of such means of technical communication as telephone, fax, e-mail, video communication and others, which were impossible in the past centuries, entails a significant intensification of interstate dialogue.



The possibility of rapid movement from different points of the globe also contributes to the rapid exchange of information at the interstate level. This is particularly important for high-level and high-level diplomacy. For example, trying to mediate in the conflict between Argentina and Great Britain over the Falkland Islands (Malvinas), US Secretary of State A. Hague covered a distance of a total of 34 thousand miles in five days.

However, the main thing is not in the technical innovations, but in the very essence of the change in the information and communication function. At the dawn of its formation, diplomacy largely assumed cunning, participation in conspiracies, deception, etc. It was not for nothing that the god Hermes, a symbol of "enchantment, trickery and cunning", was chosen as the patron saint of diplomats. This aspect of diplomatic activity drew the attention of the English diplomat G. Wotton, who lived in the late XVI-early XVII centuries. His jocular phrase later became an aphorism: "An ambassador is an honest man who is sent abroad to lie for the good of his country."

Later, outright deception, bribery and similar means left the diplomatic practice, which, according to G. Nicholson, meant the maturity of diplomacy and radically distinguished the classical French school of diplomacy, which began to take shape in the XVII - XVIII centuries. and then spread around the world, from what preceded it-the Italian embassy missions of the XV century. Of course, these and other tricks have not disappeared from diplomacy at all, but such means of influence are rather what the American researcher J. R. R. Tolkien said. Der Derian called it antidiplomacy.

In modern diplomacy, the emphasis has become not just on the rejection of outright deception. Such deception, as R. Axelrod's research has shown, is simply unprofitable in conditions of interdependence and constant interaction (and modern international relations are characterized by a very high intensity of interaction in different aspects and using different channels), because it immediately causes a response, and also leads to discredit of the one who uses such means. Today, the informative and communicative function of diplomacy is primarily to establish a dialogue between different countries.

The ideas of dialogue, dialogic communication, developed at the time by the Russian literary critic M. M. Bakhtin, at the end of the XX century began to develop in relation to diplomacy. Diplomatic dialogue involves, first of all, the recognition of the fact that the other side has its own interests and goals. The recognition of this is not only natural and natural, but also a productive moment in the development of international relations. Therefore, the main thing in the communication and information function is not the directive imposition of one's own

point of view, but the search for a mutually acceptable solution through dialogue.

The ideas of developing interstate dialogue are also reflected in the theoretical works on negotiations, where the concept of hard bargaining, when each participant cares only about their own interests and presents their position as extremely closed, has been replaced by the concept of joint analysis of the problem with a partner. The latter implies a focus on mutual satisfaction of interests and a fairly open nature of negotiations. And although both concepts are almost never implemented in practice in a "pure form", yet the trend towards joint analysis of problems with a partner is beginning to prevail today. The prevalence of joint analysis of international problems in modern diplomacy also contributes to its development at a high and high level.

The next feature of the development of the world, which has radically influenced diplomacy, is the democratization of International relations and the active entry of non-state actors into the world arena. This factor has been in effect for almost a century. One of the first "troublemakers" was the 28th US President W. Wilson (1856-1924), who came up with the idea of democratic diplomacy focused on disarmament, free trade, liberalism, and openness to the public (the need to register treaties and ratify them). Ideas In. Wilson found a different response from political and public figures of the time: some enthusiastically supported them, others met with skepticism. The latter included, for example, Mr. Nicholson. He believed that in order for diplomacy to be truly effective, it should not be carried out in full view of everyone. Subsequently, this idea was rather figuratively formulated by the American authors W. Zartman and M. Berman. They noticed that if the negotiations were held in public, their participants would be more likely to be drawn to the windows than to each other. In other words, openness encourages the parties to take public actions rather than actually solve the problem. In this regard, we should rather demand openness of the final documents, but not the process of their development and discussion.

Nevertheless, in the second half of the twentieth century, diplomacy increasingly falls under the control of the public, both because of the great opportunities of the mass media, and because of the need to ratify many documents, and, finally, because various movements – ethnic, religious, etc., as well as public organizations and academic circles that have engaged in traditional diplomatic problems - the search for agreement in conflict situations, the provision of mediation services, etc. - have increasingly entered the international arena. Similar phenomena, of course, were known before. However, in the second half of the XX century, their activities became quite large-scale. As a result, in the late 70s



and early 80s, the "second direction of diplomacy" (Tsask Two Diplomacy) began to form, in contrast to its "first direction", i.e., official diplomacy. Representatives of the second direction are mainly researchers, journalists, retired diplomats. It has received the greatest development in the United States, although in recent years many European countries, in particular Sweden, have paid great attention to its development.

The activities in the "second line of diplomacy" are mainly focused on the settlement of conflict situations. One of the most active representatives of the "second direction of diplomacy" is the American author J.Montville defined it as "informal, informal interaction between members of hostile communities or nations, the purpose of which is to develop strategies, influence public opinion, and organize human and material resources that could contribute to the resolution of the conflict." He, based on the works of his predecessors, formulated the tasks of this direction, namely:

- the formation of working relations between representatives of the warring parties on a personal level;
- improving the adequacy of perception; forming ideas about the conflict from the point of view of the opposite side,
- development of conflict resolution strategies, but to a limited extent, only as possible solutions

Representatives of the "second line of diplomacy" emphasize that, unlike official diplomacy, coercive and directive measures, including sanctions or other means of exerting pressure, are excluded here. The main task is to create favorable conditions for improving mutual understanding between the parties and finding their own solutions in a particular situation.

In conclusion, it should be emphasized that the importance of diplomacy at the end of the XX century is undoubtedly increasing. This is primarily due to the fact that forceful solutions to international problems, despite their continued use, are becoming increasingly dangerous. In addition, the restructuring of international relations associated with the processes of globalization, the entry into the world arena of non-State actors, poses the task of diplomacy to actively engage in the creation of a new image of the world.

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EFFECTIVE STRATEGIES FOR TEACHING EFL IN MULTI LEVEL CLASSES

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ANNOTATION

The analysis shows that the use of pedagogical methods related to the analytical strategy is a way to individualize learning, that is, the organization of the educational process taking into account the individual psychological characteristics of students. Learning strategies are learning models that define clear learning outcomes and aim to achieve them through specially designed learning activities.

KEYWORDS: *learning style, language learning strategy, strategy choice, foreign language learning, language acquisition.*

DISCUSSION

The definition of the term "strategy" emphasizes the fact that it refers to "specific actions used by the teacher and the student to implement specific actions to make the educational process easier, faster, more enjoyable, more effective, more suitable for their individuality". To begin with, you should define the concepts of "style" and "strategy". Learning styles are defined as the types of cognitive processes during the acquisition of new information by students. In general, thanks to experiments conducted by psychologists and methodologists, it was noted that each person acquires information and manages it in different ways. From a practical point of view, different learning styles are reflected in a particular classroom space, when applying different cognitive approaches and models to the study of a particular discipline. These approaches are called learning strategies. The individual learning style, together with other psychological characteristics of the student, influences the choice of learning strategies.

With the advent of the cognitive approach in the 1970s, there has been a growing interest in learning foreign languages and a great deal of attention has been paid to strategies for teaching them. In particular, in the second half of the 1970s, there were studies on the "good language learner", whose language acquisition is particularly effective due to the use of various learning strategies and a high level of independence in the management of the educational process.

The ultimate goal of these studies was to achieve maximum autonomy of the student, who, using various strategies, can manage their own learning process and choose the strategies that are most suitable for them personally [10]. It was noted that some students achieved success in mastering a foreign language regardless of the methods or technologies of teaching. "Some people seemed to be endowed with the ability to succeed; others lacked these abilities".

Classification of foreign language learning strategies

Linguists and methodologists have developed various classifications of foreign language teaching strategies. It seems appropriate to refer to the classification proposed by X.Sternom, as to the most capacious. The language learning strategies are divided into five groups:

1. Management and Planning Strategies;
2. Cognitive Strategies;
3. Communicative-Experiential Strategies;
4. Interpersonal Strategies;
5. Affective Strategies.

Within such areas, learning strategies can be identified, which provide guidance for learning activities. Learning strategies, which are based on a continuum of intralanguage and interlanguage aspects, are based on the role of the native language in teaching a foreign language. Intra- and interlanguage strategies are based on two opposite approaches to the role of the native language in the



study of a foreign language. A comparison of these approaches is as follows:

The intra-language pole includes teaching methods that require complete immersion in a foreign language and use it as the only linguistic means of communication in the classroom. On the other hand, the interlanguage pole includes those methods in which there is a constant reference to the native language.

To choose an intra-language or inter-language strategy, you need to know which direction the educational process is moving in - from native to foreign or from foreign to native. Both strategies can be pedagogically successful, especially if applied at different stages of the learning process. At the early stages of learning, it is more effective to use the native language and compare its linguistic structures with the linguistic structures of a foreign language, i.e. the most appropriate strategy is the intra-language strategy. In the future, when the student has already acquired sufficient knowledge of the foreign language system, it is optimal to dive into the language being studied, without referring to the native language.

Next, the experimental and analytical field of training. Based on the premise of some theories of linguistic pedagogy, which is that it is impossible to divide a language into "sections" without compromising its basic qualities and that the native language is learned by the child in a natural way, Stern concludes that natural and informal approaches to learning are the most effective.

Such approaches belong to the "experimental" sphere, since they focus not on code (language as such), but on communication and communication. On the contrary, analytical learning strategies rely on learning different types of foreign languages.

An experimental strategy involves a specific application of the language being studied. In addition, it implies the active involvement of the student in the use of the acquired knowledge for the assimilation of new ones. One of the main goals in the experimental strategy is the fluency of the student's speech.

On the contrary, at the analytical pole, the objective-structural aspects of the code (language) are distinguished and formal teaching methods are proposed that focus on the language as a tool. In this case, the student is not a participant in the communication, but rather an observer who is provided with the necessary knowledge through individual sentences devoid of context. The main goal in the analytical strategy is the accuracy, correctness of speech and a good knowledge of the formal grammatical rules of a foreign language.

In the past, there has been a greater use of pedagogical methods related to analytical strategy in language teaching. Since the 1970s, however, empirical and communicative approaches have

prevailed. In particular, in high school, preference was given to the communicative method, justified by E. I. Passov. It is based on the ideas of communicative linguistics, psychological theory of activity, the concept of personal development in the dialogue of cultures, which determine the ultimate goal of teaching a foreign language-mastering a foreign language culture in the process of intercultural communication. The peculiarity of the method is manifested in an attempt to bring the language learning process closer to the process of real communication. One of the main characteristics of the method is the speech orientation of the training, which means the active involvement of students in the process of communication and the use of exercises that maximally recreate real life situations. As the main condition, the representatives of the communicative method put forward problemativeness as a way of organizing and presenting educational material. The advantage of the communicative method is the transformation of learning a foreign language into the process of immersion in the culture of the countries of the language being studied. In the modern methodology, this thesis has been further developed within the framework of the linguo-cultural direction in teaching and substantiating the content of intercultural competence of students.

The third sphere, highlighted by Stern, is implicit - explicit. A frequently discussed question in the context of language teaching is whether the student should be taught to "consciously" deal with a foreign language system or, conversely, to teach him to act intuitively. Stern defines the first strategy as an explicit sphere, and the second as an implicit one.

The implicit strategy focuses on an intuitive and integrated approach to the language, rather than on conscious reflection and problem - solving. The explicit strategy is based on the position that learning a foreign language is a cognitive process that leads to an explicit knowledge of the language. At the same time, the student focuses on the characteristics of a foreign language and strives to learn them consciously and rationally. This approach requires planning and clear organization of learning activities based on the analysis of all aspects of the structure of the language being studied. The main criticism of excessive explicitness in teaching is that it can deprive the student of the intuitive part in using a typical native speaker.

As for the implicit aspect of learning, despite the undeniable fact that the acquisition of the native language occurs imperceptibly and intuitively in the process of social interaction, in the case of a foreign language, a small amount of spontaneous interaction is available to the learner in order to be able to rely solely on implicit strategies.

Speaking about learning strategies, it should be noted that they can be observed, described, and,



above all, they can be taught. While learning styles are difficult to change, they are associated with fundamental personality traits, learning strategies the teacher and student may choose to correct problematic or unproductive aspects of the educational process.

In recent years, the cognitive aspects of learning have become the subject of increasing attention. It is important, however, to find out what the real meaning of learning styles is in the classroom space, so that teachers and students can take full advantage of them. Studies have shown significant gender differences between men and women who learn a language: women use a wider range of strategies than men. In addition, learning styles play a crucial role in the choice of language learning strategies. It has been argued that the individual student's learning styles and strategies can work together with a specific teaching methodology. Studies in this area have shown that the propensity for a particular learning style affects the choice of the type of learning strategy.

From the teacher's point of view, learning styles have their counterpart in teaching styles or in the teacher's preferences in the selection and presentation of educational material. The teaching style can be based on one's own teaching style or on simulating the models observed.

in the past, but it is important that often in pedagogical practice there is a discrepancy between the style of teaching and the style of language learning by some students. As a result, the educational process may lose its effectiveness. For example, if you apply a teaching method that relies primarily on oral means of communication in a classroom with a large number of students, it can give modest results. Therefore, it is very important that the teacher has a clear idea not only about the different styles of studying the subject, but also about the individual characteristics of each student, his weaknesses and strengths, and uses the most effective methods for each of them. In this sense, the question of learning strategy becomes central: under the constant guidance of the teacher, the student must figure out not only which strategies are most appropriate for his cognitive style, but also how to train himself to use those that cause problems. The study of styles and strategies should be one of those aspects of pedagogical activity that puts the student at the center of the educational process and is aimed at developing his personal qualities.

It is also very important for the student to be aware of their own style and strategy of studying the subject. The process of achieving independence is an important step in understanding your own weaknesses and strengths, in choosing the most appropriate strategy for your cognitive style. The learner should develop a so-called "monitoring function" that will allow them to become aware of

their own learning style and strategy, learn how to adjust them or apply other strategies if necessary. Knowing your abilities and skills also has important implications for reducing the affective filter, which is a prerequisite for effective learning. For example, a student who has developed their own learning strategy is less discouraged in the event of failure, not interpreting it as an inability to learn a language, but relativizing it in the light of knowledge about their achievements. As a result, the student will participate in the learning process with less anxiety and more motivation.

It should be remembered that in any multi-level training, a combination of quantitative and qualitative methods of differentiation of tasks and assessment is used, the purpose of which is to ensure the progress of each student within their individual educational track and the effective work of the class as a whole. Therefore, it is necessary to organize the educational process in such a way that would allow to take into account the differences between students and create optimal conditions for the effective educational activities of all students, that is, to realize the need to restructure the methods and forms of teaching and assessment that take into account the individual characteristics of students as much as possible. Multi-level training, in turn, provides a chance for each child to organize their training in such a way as to maximize their opportunities and allows the teacher to focus on working with different categories of students.

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METHODS OF TEACHING A FOREIGN LANGUAGE AS A SCIENCE

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ANNOTATION

The methodology of teaching a foreign language is most closely related to the linguistics of the sentence, with the problems that are of primary importance for the methods, with the language and thinking of grammar and vocabulary, the relationship between grammar and vocabulary, and much more.

KEYWORDS: *methodology, problems, learning objectives, effective method, set, pedagogy, psychology, physiology, linguistics.*

DISCUSSION

The word "method" means, first of all, the way or manner of doing something. This word is international, borrowed in all European languages through the Latin "methodia" from the Greek "methodos".

The methodology of teaching a foreign language is understood here as a body of scientifically proven theory about the teaching of foreign languages in schools and other educational institutions. The English word "method" is also used to refer to a branch of research. Methods (methodology) as a science, it is the science of the ways or manners (methods) of teaching. Methods of teaching a foreign language is the science of methods of teaching foreign languages. It covers three (sometimes four) major issues:

1) The purpose of teaching a foreign language - why learn a foreign language.

2) The content of the training, i.e. what to teach to achieve the goal.

3) Teaching methods and techniques, i.e. how to learn a foreign language in order to achieve the goal in the most effective way and meet modern requirements.

4) Who to teach. It is necessary to distinguish between general research methods (general methodology) and special methods (private methodology).

By general methods, we mean methods that address the general problems of teaching a foreign language, regardless of the language of instruction (whether English, German, or French). By special methods, we mean methods of teaching a foreign language, i.e. teaching a particular foreign language. The English word "method" has, respectively, two meanings. It expresses a way of doing something and a branch of knowledge and research where ways of teaching are considered. In the first sense, in addition, denoting a more or less complex procedure consisting of a number of interrelated acts, the English word is more often used than its Russian equivalent to denote a single educational device or a single form of training procedure.

Its second meaning is the English word method, usually especially qualified, can mean a set of teaching methods (1) of any subject of learning, (2) of a foreign language in general, (3) of any foreign language, or (4) of any particular aspect of instruction in a foreign language, such as speech, reading, phonetics, grammar, etc.

In the pedagogical process, the term "methodology" is used in three meanings. Its first meaning is the subject of training, the second meaning is the totality of all methods (methodological) instructions, and the third meaning is the theory of teaching a special subject. The methodology of teaching a foreign language is closely related to other sciences such as pedagogy,



psychology, physiology, linguistics, and some others. Pedagogy is a science related to teaching and educating the younger generation. Since the methods of solving problems of teaching and upbringing are most closely related to pedagogy, to learn a foreign language, you need to know pedagogy. One branch of pedagogy is called didactics.

Didactics studies the general ways of teaching methods in schools compared to didactics, the study of specific ways of teaching a particular academic subject. Thus, it can be considered a special didactics. Pedagogy of science or general theory in the education and training of children and young people, in other words, the science of education in the narrow sense and instruction for teaching in the broadest sense. It consists, respectively, of two main divisions: education and educational pedagogy, of which the latter is called didactics, otherwise method or methods. In the teaching of a foreign language, as well as in the teaching of mathematics, history, and other subjects studied at school, the general principles of didactics, in turn, influence and enrich didactics. For example, the so-called "visibility principle" was first introduced in the teaching of foreign languages.

Now it has become one of the fundamental principles of didactics and is used in teaching all school subjects without exception. Programmed learning was first used to teach mathematics. Now, through didactics, it is used in teaching many subjects, including foreign languages. It is the task of a specialist in the field of foreign language teaching methods not only to look for the best methods of transferring knowledge and skills to students and teaching them good habits, but also to look for the best means of educating students on the topic with the teaching of which he is concerned. Pedagogy is an applied science. Both divisions in all their parts, in particular the methodology of a foreign language, are applied psychology. In teaching a foreign language, the teacher forms and develops students' pronunciation habits, lexical habits, and others. The development of "habits" is the result of repeated action, which can be acquired by constant, sustained learning. Therefore, the teacher must remember, when organizing students, that the teaching must be constant and accurate. This implies a correct copy, clearly presented and easy to follow, and reproductions that give motivating conditions that encourage repetition, which will lead to mastery.

Since a skill is the ability to do something well and in the language training of students the ability to use language for communication needs, the teacher must form and develop such language skills as listening, speaking, reading and writing. Through the method of communication with psychology, it is impossible to develop the language skills (listening, speaking, reading and writing) of our students effectively, if we do not know and do not take into

account the psychology of habits and skills, the ways of their formation, the influence of previously acquired skills on the formation of new ones, and many other necessary factors that psychology can provide us. Since the upbringing and education of children are special components of combined physical and mental activities, it is clear that psychological principles should largely contribute to the theoretical foundations of pedagogy in general and teaching methods in particular.

Pedagogy and psychology can be said to overlap in order to have common areas, which mainly bear the name "educational psychology". This relationship can be represented graphically as follows: pedagogy-educational pedagogy-psychology. Currently, we have a lot of material in the field of psychology that can be used in teaching a foreign language. Thus, if a teacher wants his students to speak English, he must use every opportunity and must make them speak or hear him. In addition, to master a second language, to acquire another way of receiving and transmitting information, to create this new code in the most effective way, it is necessary to take into account some psychological factors.

Effective learning of a foreign language depends largely on the memory of students. This is why the teacher needs to know how he can help his students successfully memorize and retain the language material they are learning. Therefore, in teaching a foreign language, we must create favorable conditions for involuntary memorization. Experiments conducted by outstanding scientists show that psychology helps methods to determine the role of the native language at different stages of learning; to determine the amount of material for students to learn at each stage of learning. Identify the sequence and ways that different habits and skills should develop; methods that are more suitable for the presentation of the material and for ensuring its retention by students, and so on. Psychology allows methodologists to determine the so-called psychological nature of the teaching content, i.e., what habits and skills should be developed in students for proficiency in the language.

Psychology also helps with the choice of teaching and learning methods, i.e., how to teach in the most effective way, under what conditions students can learn words, phrases, model sentences more effectively, or how to ensure that students memorize new words in an easier way. Since learning progress is made by the addition of new knowledge, can be carried out in the training of a certain group of students, psychology will help determine which psychological factors should be taken into account when teaching students. The relationship of methods of teaching a foreign language with the psychology of the higher nervous system is connected with the methods of psychology



of teaching foreign languages and the functions of the brain and the higher nervous system. This has a direct bearing on the teaching of a foreign language, and also explains and confirms the need to cultivate habits, frequent repetition and revision of material in the teaching of all subjects of study, in particular in the teaching of foreign languages, where these principles of art are of particular importance.

Therefore, the forms of human behavior are important, that is, the forms of human behavior. responsive speech in a variety of communicative situations, so in teaching a foreign language we need to keep in mind that students need to master language-like behavior, as something that helps people to communicate with each other in a variety of real-world communication situations. It follows that a foreign language should be taught in such situations. The relationship of methods of teaching a foreign language with linguistics Linguistics is a science, language, as a subject of teaching, is not a science, but an action. The methodology of teaching a foreign language is most closely related to the linguistics of the sentence, with the problems that are of primary importance for the methods, with the language and thinking of grammar and vocabulary, the relationship between grammar and vocabulary, and much more. There is no doubt that all branches of linguistics: phonetics, two divisions of grammar-morphology and syntax, and two sections - lexicology and semantics-can provide useful information for teaching a foreign language.

Many prominent linguists not only developed the theory of linguistics, but also tried to apply it to language teaching. Methods of teaching a foreign language, like any other science, have certain ways of investigating problems that may arise [4]. These are:

1) a critical study of the ways in which foreign languages were taught in our country and abroad;

2) based on the study and generalization of the experience of the best foreign language teachers in different types of schools;

3) experiments to confirm or refute the working hypothesis that may arise during the investigation. Experiments with methodologists are becoming more and more popular. When experimenting, methodologists have to deal with different data, so in organizing research work, they use mathematics, statistics, and probability theory to interpret experimental results.

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FORMATION OF STUDENTS' COMMUNICATIVE COMPETENCE IN ENGLISH CLASSES

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ANNOTATION

The article deals with some aspects of the formation of the communicative competence of students studying a foreign language in a non-linguistic university, using examples of the use of communicative methods of play, station learning, experience in the use of video materials and information technologies.

KEY WORDS: *communicative competence, English language, education, interactive methods, pedagogic skill.*

DISCUSSION

The objective need of a modern university is to find the best ways to organize the educational process. A modern specialist must be ready for full-fledged creative activity in the modern information society, which means that he must have not only a certain amount of knowledge, but also possess the skills and abilities that allow him to carry out work, as well as have experience in creative activity, be ready for interpersonal and intercultural cooperation both within his country and at the international level. Knowledge of a foreign language is a means by which a person gets the opportunity not only to enrich their general cultural level, their ability to think, create, but also the opportunity to evaluate someone else's thought and express their attitude to someone else's culture, someone else's creativity. That is why, among the various ways of teaching a foreign language in universities, currently preference is given to those methods that primarily have a developing potential.

In addition, it should be noted that in recent years there have been significant changes in the personal development of young people: modern students are more characterized by pragmatism of thoughts and actions, emancipation and independence. The modern university is experiencing the humanization of relations between students and teachers, which entails the need for the democratization of teaching activities. A dynamically developing society requires bright creative individuals who retain the ability to constantly self-knowledge and self-development.

It is the communicative approach in teaching a foreign language that makes it possible to reveal the

true cognitive capabilities of each student and, in accordance with this, make the educational process more diverse, interesting, and comfortable, which ultimately increases the effectiveness of teaching and the teacher's satisfaction with their own work. That is why the communicative-oriented approach in teaching a foreign language at a university is by far the most popular and priority.

There are various models and theories of communicative competence. However, most theories emphasize the need for personality-oriented developmental learning based on the conscious-communicative method. The set of components of the skills implemented in each specific case largely depends on the communicative situation. The conscious-communicative method involves not only a careful selection of communicative situations, but also their full awareness on the part of the trainees. Thus, the effect of learning is expressed not in the number of words learned, grammatical rules, but in professionally oriented personal development, and this is achieved only when the student realizes some of his life and professional experience, acquires something new for himself, moves to another higher level of understanding and evaluation of events.

It should be noted that the use of a conscious-communicative method of teaching inevitably entails a change in the role of the teacher, who becomes a consultant, adviser, organizing the course of events in the classroom and helping the student to find the way to master the necessary information. This is how a person-centered approach to learning is implemented, which helps to eliminate psychological barriers and create an environment that encourages creativity. Personal-oriented training helps the teacher to



activate the capabilities of each student, to create a psychological and pedagogical space that allows you to increase the success of teaching a gifted student, to build an individual development trajectory for a weak student, to help everyone adapt to the learning process.

The organization of a diverse learning environment in a foreign language class contributes not only to increasing the motivation of students, but also to creating an atmosphere of cooperation.

Among the modern pedagogical technologies used in the formation of the communicative competence of English language learners, the method of station learning deserves special attention. This method fully meets the main principles of personality-oriented learning and is, in our opinion, one of the most promising areas in the work of a modern university. The method of station training can be especially effective in the preparation and conduct of classes to consolidate the material passed, workshops, as well as classes to control the assimilation of new topics. At the preparatory stage, it is necessary to choose a topic that should correspond to the state programs. Depending on the purpose of the lesson, the teacher considers the complexity and volume of tasks - stations that students can perform both individually and in pairs or small groups.

Tasks at the stations can be very different: read an article and answer questions, insert the necessary v-time verb form into sentences, draw what is described in the proposed text, solve a crossword puzzle, etc. It is important to provide a station where students should demonstrate their speech skills, for example, to create a dialogue or speak on a specific topic. In this case, the teacher is at this station either as a listener or as a learning partner. In the process of preparing for such classes, the teacher usually prepares a list of answers-keys to tasks at the stations, which is necessary for self-control of students. During the lesson, students are given sheets of keys to the tasks that they performed at the stations. They check their answers with the correct ones and enter the points they have earned in the itinerary sheets.

The method of station training is almost universal in use, it can be used in teaching any subject, as well as used for conducting subject competitions, correspondence trips and other forms of creative activity of the teacher and students.

To implement the tasks of teaching communication in English, to increase motivation, interest in the subject, in our opinion, it is necessary to use a combination of various technologies, techniques and methods. The method of station training, along with other modern technologies, gives good practical results and deserves to be studied and applied.

Another practical way to form the communicative competence of English language

students at the university can be considered a well-known game method. The game at various stages of classes can be considered as a situational-variable exercise, where it is possible to repeat the speech pattern repeatedly in conditions as close as possible to real speech communication with its inherent characteristics-emotionality, spontaneity, purposefulness of speech influence. In addition to the communicative competence, the use of the game method in English classes helps to form the socio-cultural competence of students, as in the course of the game, students learn the culture, traditions and customs of another nation. As practice shows, the use of games in foreign language classes allows you to reveal more deeply the personal potential of each student, to influence the formation of certain personal qualities necessary for the successful socialization of future specialists.

The formation of the communicative competence of foreign language learners at the present stage is impossible without the use of multimedia tools, addressing the realities of the countries of the language being studied. With the help of film and video materials, it is necessary to draw the attention of language learners to gestures and facial expressions, which native speakers can sometimes supplement or replace speech actions. An interesting and useful practice in this area of the teacher's activity can be the development of classes using episodes from famous films, informational views, professionally oriented video stories.

Special attention, in our opinion, should be paid to the project activities of students, where students together with teachers could show their creative abilities in creating multimedia manuals "My family", "My hometown", "My future profession", etc. Student projects as a practical goal of teaching a foreign language at a specific stage provides the widest opportunities for the formation of students' communicative competence, as well as for the implementation of educational and educational tasks of the university.

Thus, as can be seen from the above, the most effective in the formation of the communicative competence of students of a foreign language at a university can be the use of the entire set of considered communicative methods and techniques. The formation of communicative competence allows students, in turn, to use the acquired knowledge in practice, which means to overcome another step on the way to self-realization and success.

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THE ROLE OF FOREIGN LANGUAGE IN THE WORLD AND WAYS OF STUDYING IT

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ANNOTATION

Today, English is one of the dominant languages of the world. However, English was not always considered a necessary knowledge. The problem of cross-cultural interaction is described. The types of intercultural communication, its main forms and tasks are studied. The English language is considered as one of the means of intercultural communication and interaction with people of other cultures.

KEY WORDS: *English language, knowledge, cultural interaction, language development, intercultural communication.*

DISCUSSION

The world status of the language is due to the fact that it has become native to many countries on all continents of the world. "Export" it began in the 17th century, and first of all, in the countries of North America. Therefore, its modern significance is due, first of all, to the unprecedented population growth in this region. Consider the features of the English language, thanks to which it can rightfully be considered the "language of the world":

1) In Old English, as in Greek, words had a whole system of endings that showed the grammatical categories of number, tense, person, case, etc. However, over time, the system of grammatical forms has become much simpler, and today verbs have only a few endings, and, for example, adjectives do not agree with nouns grammatically.

2) As a result of the loss of endings, over the past five centuries, the English language has become very universal. For example, quite often an English word can pass into another part of speech without visible changes.

3) This feature of the English language implies unlimited borrowing of vocabulary from other languages and the ease of formation of derived and complex words. At one time, many languages contributed to the creation of the lexical base of modern English. However, today this process is

already going in the opposite direction, although many supporters of the purity of such languages as French, Russian, Japanese, try to resist the penetration of English words into them.

4) The future of the language In terms of the coverage of the territories where native speakers live, English ranks first, and in terms of the number of speakers it is second, after the Mandarin version of Chinese. It is the language of business, technology, sports, and aviation. In general, the political, economic, scientific, and sporting life of the whole world "flows" in English. English is the official and working language of the United Nations. All kinds of summits and meetings of heads of state, the signing of laws and decrees, negotiations and debates — all this is conducted in English. International trade, the operation of the banking system, the operation of the transport system on land, at sea and in the air is carried out in English. This language is a living communication tool for academics, doctors of science, and scientists around the world.

After all, international conferences, the study of world experience and the exchange of information of scientific minds takes place only with the use of English. What can I say — the Olympic Games and all kinds of competitions between countries have chosen English as the official language. The modern language in the British Isles is not static at all. The language lives, neologisms constantly appear, some



words go into the past. However, the difference between English and many European languages is that there are no static norms in the UK.

On the contrary, it is the various dialects and dialects that are in great use. Not only do the pronunciation of words differ at the phonetic level, but there are also completely different words that denote the same concept. The media and members of the Government communicate in British English. But the most popular is American English. There are also Australian English, Canadian English, and many other dialects. On the territory of the UK itself, there are several dialects spoken by the inhabitants of a particular province. As you can see, the English language has preserved its traditions of "mixing languages" even today.

The popularity of the English language was greatly promoted by the colonial policy of Great Britain, the colonization of Australia and North America. After the Second World War, the importance of such a country as the United States increased, which also contributed to the popularization of the English language. In the modern world, the Internet community, people of science and culture mostly communicate in English. The exact number of people who speak English in our time is difficult to name. The results of various studies vary by tens of percent. The figures are called 600 million and 1.2 billion.

People who speak English can be divided into three groups: native speakers, for whom it is their native language; bilinguals, who know it as a second language; and those people who have to use it for practical purposes (during school or work). Every seventh inhabitant of the Earth belongs to one of these three categories. The importance of the English language in the modern world is so great that its knowledge is not a privilege and luxury. Once upon a time, computers, as well as mobile phones, could only afford people of a certain social stratum.

Now such things are essential items. The same can be said about English. It is taught everywhere: in schools, universities, and courses. There are many ways to learn foreign languages. For self-study, the Internet offers us a wide range of educational materials, online courses, smartphone applications, training channels on youtube, special social networks, etc. In addition, each city is now experiencing an increase in the number of language centers with qualified local as well as foreign teachers. It is assumed that any educated person is simply obliged to speak English, since it is the key to further self-education and self-improvement. That's why there are so many organizations offering to teach you English right now.

However, do not think that it is so easy to do this. Learning any language is a long process that requires certain costs, both mental and financial. Since the development of mental activity is an

integral part of the process of mastering both the native and foreign languages, training should not be based only on the mechanical memorization of structures, phrases, speech patterns and rules. The implementation of this task in practice is carried out through the introduction of the principle of cognitive learning. Leo Tolstoy was one of the first to formulate a prototype of the cognitive principle of learning: "It is impossible to force explanations, memorization and repetition to teach students against their will the language. It is almost always not the word itself that is incomprehensible, but the student does not have the concept that expresses the word at all. The word is almost always ready when the concept is ready. At the same time, the relation of word to thought and the formation of new concepts is such a mysterious, complex and tender process of the soul that any intervention is a rude, clumsy force that delays the process of development... But to consciously give a student a new concept and form of the word... is as impossible and futile as teaching a child to walk according to the laws of balance. Any such attempt does not bring the disciple closer, but removes him from the proposed goal, like a rough hand of a man who, wishing to help a flower to bloom, would begin to unfold the flower by the petals and crush everything around." Psychological research and learning practices show that learning is successful when the brain creates its own mental structures, and it slows down if ready-made structures are imposed on it. Therefore, it is necessary not to impose linguistic knowledge, but to help it to be born and develop it. It can be born out of the need for communication and self-expression.

In this case, learning foreign languages or improving them through watching movies, TV shows in the original language is one of the most effective, because it is learning through perception. First, a person passes through his head a lot of correct sentences, then he can reproduce them and build his own sentences. This method can be divided into several stages:

Stage 0-viewing with translation into the native language. This stage can be called an introductory one, since here there is a direct acquaintance with the plot. If you want and have a certain level of knowledge of the language being studied, you can skip this stage.

Stage 1-viewing with a translation in your native language and subtitles in the original language. At this stage, you can expand your vocabulary and improve your grammar.

Stage 2-viewing with translation in the original language and subtitles in the native language. Here is the habituation to the sound of foreign speech, the manner of conversation of the characters, the accent.

Stage 3-viewing with translation and subtitles in the original language. At this stage, not only the



language and individual words are perceived, but also there is an understanding of what exactly it is about, at the same time the spelling of the words is remembered.

Stage 4-viewing in the original language, without subtitles. It is often impossible to understand and translate even familiar words in the flow of speech, since they are not perceived by ear. After this stage, it will be much easier to understand the interlocutor in real life. Watching movies in the original language as a way to learn a foreign language will increase the level of knowledge of the student. Since most often the choice in favor of this method is made consciously, the benefits will be significant.

In addition, movies allow you to learn slang and informal words that are not yet in dictionaries, and improve your pronunciation. Clearly, English is the most important means of communication in the modern world.

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FORMATION OF COMMUNICATIVE COMPETENCE OF STUDENTS IN ENGLISH LESSONS

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ANNOTATION

The leading methodological principle of the foreign language discipline is the principle of communicative orientation in teaching. This principle defines all the components of the educational process in a foreign language.

In the article, the authors try to determine the most effective methods for the formation of communicative competence.

KEYWORDS: *communicative competence, English lessons, education process, ICT, innovation.*

DISCUSSION

The consideration of language as a social phenomenon (it provides communication of people) brings to the fore the training for the communicative purpose - to learn to communicate in it using both sound and graphic code, highlighting first of all reading. The principle of communicative orientation determines the content of training - the selection and organization of linguistic material, the specification of areas and situations of communication. And also, what communication skills are necessary to enter into communication to implement it in oral and written forms, and by what means it is possible to ensure the mastery of the communicative function of the language.

The principle of communicative orientation requires the appropriate organization of training, the use of various organizational forms for communication. The communicative goal of teaching English as a general learning strategy. The implementation of the main directions of the reform in the teaching of foreign languages involves ensuring the unity of teaching and educating students, their strong mastery of the basics of a foreign language, the ability to apply it in practice.

Thus, the practical and communicative orientation of the educational process in a foreign language is once again emphasized. The program on foreign languages says about increasing attention to the labor and moral education of students; The independent work of students in the classroom and

outside of school hours is highlighted, and the need to use the language lab is emphasized.

The age of informatization is making its own adjustments to the traditional teaching of foreign languages. The teacher must learn how to correctly and effectively use the possibilities of information technology in teaching. At the same time, it faces problems: the conditions for the formation of foreign language communicative competence using information technologies are not sufficiently developed, and there is an acute shortage of training time due to the saturation of the program.

The main task of a modern school is to reveal the abilities of each student, to educate a person who is ready for life in a high-tech and competitive world. Therefore, the main goal of teaching a foreign language is precisely the formation and development of the student's personality, which is able to achieve the necessary level of foreign language communicative competence, to participate in intercultural communication in the studied language, independently improving in mastering foreign language speech activity. The Concept of Modernization of Russian Education defines new priorities. The leading aspect is the preparation of the younger generation for life in a rapidly changing information society, in a world where there is a constant need for new professions, for continuous professional development. The penetration of computers into the educational process contributes to



the renewal of traditional methods and techniques in the organization of the educational process.

Global changes in the political and economic life of society in the XXI century put forward the need to learn a foreign language as a means of intercultural communication. Ideally, students should not only learn to understand what is read and heard, write different texts, but also speak and understand a foreign language. It is the language activity of students that contributes to the mastery of language material. The more intense the language activity of students, the stronger and deeper this mastery, so it needs to be fully developed and formed. All these changes are due to the need to create an active educational environment that would provide students with access to various sources of information, and help meet the interests of the modern student who communicates in the Internet community.

Therefore, the modern educational process should use not only new technical means, but also new forms and methods of teaching, a new approach to the learning process. In the normative documents, the goal of foreign language education is defined today as the formation and improvement of students' foreign language communicative competence in the totality of all its components, as well as the development of individuality in the dialogue of cultures. The competence of a student is a set of personal qualities of a student (value-semantic orientations, knowledge, skills, abilities), determined by the experience of his activity in a certain socially and personally significant sphere. Initially, this term was used in the methodology of teaching foreign languages, then it was borrowed by representatives of other branches of science. In the federal state educational standard of the second generation, communicative competence is defined as the ability to set and solve a certain type of communication tasks: to determine the goals of communication, to assess the situation, to take into account the intentions and methods of communication of the partner(s), to choose adequate communication strategies, to be ready for a meaningful change in one's own speech behavior.

The primary component of communication competence includes the ability to establish and maintain the necessary contacts with other people, a satisfactory command of certain norms of communication and behavior, and the "technique" of communication (rules of politeness, etc.). Thus, the analysis of the definitions of the concept of "communicative competence" and related concepts allows us to identify the following approaches to the definition of the concept of "communicative competence", interpreted as:

1) The ability of the individual to enter into social contacts, to regulate repetitive situations of interaction, as well as to achieve the desired communicative goals in interpersonal relations;

2) Interpersonal experience, the basis of which is the processes of socialization and individualization;

3) The ability to communicate; the ability to effectively interact with others at their level of training, education, development, on the basis of humanistic personal qualities and taking into account the communicative capabilities of the interlocutor;

4) Qualities that contribute to the success of the communication process (qualities are identified with the communicative abilities of a person);

5) Systems of communicative actions based on knowledge about communication and allowing for free orientation and action in the cognitive space. Despite different approaches to the definition of communicative competence, scientists are united in establishing its role in the development of personality.

At present, almost no one disputes the fact that a foreign language, along with teaching communication and improving the level of general and professional culture, also has a significant educational value. In modern conditions, this is the students' understanding of the role of learning international communication languages in the modern multicultural world, the value of the native language as an element of national culture; awareness of the importance of the English language as a means of cognition, self-realization and social adaptation; education of the qualities of a citizen, a patriot; education of tolerance towards other languages and cultures. Summing up, it should be said that the main strategy of teaching foreign languages is a personality-oriented approach, which puts the student's personality at the center of the educational process, taking into account his abilities, capabilities, inclinations and needs.

This is supposed to be implemented on the basis of differentiation and individualization of training, the use of new learning technologies, as well as the use of the opportunities of the national-regional and school components of the basic curriculum, due to which it is possible to increase the study time for learning a foreign language. The implementation of a personality-oriented approach to teaching and educating students places increased demands on the professional training of teachers who are able to work at different levels of education, taking into account their specifics.

Analyzing the experience of working in English lessons, we can conclude that good results (stable knowledge of the subject, practical skills and formed skills when working with a computer) justify the use of the project method. After all, during the design process, the type of relationship changes, the level of responsibility and competence of both the student and the teacher increases, and the integration of education and upbringing takes place. Project activity itself is characteristic of the field of ICT use.



Therefore, this method will make a significant contribution to the professional self-determination of the student. In addition, this type of activity is associated with working in a team and contributes to the development of the ability to interact with other people, take into account the positions and interests of partners, enter into communication, understand and be understood. So, based on all of the above, we can draw conclusions: - The project method is always focused on the independent activities of students — individual, pair, group, which they perform for a certain time. – The method is based on the development of students' cognitive skills, the ability to independently construct their knowledge, to navigate in the information space. – The results of the completed projects should be, as they say, "tangible". Work on the project method involves not only the presence and awareness of a problem, but also the interest of its disclosure, solution, which includes clear planning of actions, the presence of a plan or hypothesis for solving this problem, a clear distribution (if we mean group work) of roles and tasks for each participant, provided that they work closely. - The method is used when a research, creative task arises in the educational process, which requires integrated knowledge from various fields, as well as the use of research methods. – For the project method, the question of the theoretical, practical and cognitive significance of the expected results is very important (for example, a report at a conference, a joint publication of a newspaper, an almanac with reports from the scene of events, and so on, in our case, a speech at a conference, booklets and calendars.).

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STUDY ON THE NATIONAL-CULTURAL SEMANTICS OF PHRASEOLOGICAL UNITS AND THEIR ROLE IN THE DEVELOPMENT OF THE SPEECH CULTURE OF STUDENTS

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ABSTRACT

This article discusses the national-cultural semantics of phraseological units and their role in enhancing the speech culture of students.

KEYWORDS: *phraseology, linguistic local lore, national-cultural semantics, originality, national identity, realities, non-equivalent vocabulary.*

DISCUSSION

The improvement of a speech culture is rather impossible without the study of phraseology, the knowledge of which develops the ability to express one's thoughts most vividly and figuratively. A general specificity of phraseological units is, first of all, figurative meaning. Phraseological units contain an internal image, the identification of which is the main condition for understanding the figurative meaning of phraseological units.

According to E.M.Vereshchagin and V.G.Kostomarov "The national originality of the verbalization of extra-linguistic reality, or national-cultural semantics is inherent in absolutely all language units' revolutions" [1,59].

In the below, we are going to show that phraseological units are not devoid of national and cultural semantics, they play a large role in the development of the speech culture of students.

The radical shifts that have taken place in the socio-political, economic and cultural life have led to a serious renewal of the lexical system of the Uzbek language, including the phraseological one. This update of the modern vocabulary system is particularly striking:

- In the appearance in the active vocabulary of new phraseological phrases;

- In securing new meanings for a number of phraseological units;
- In the withdrawal of some obsolete phraseological units into a passive vocabulary;
- In the loss of certain phraseological units of some old meanings;
- In expanding the composition of the national and interstyle, i.e. common phraseology due to separate, previously stylistically limited phraseological turns.

In linguistic and cultural studies, the problems of selection and graduation of educational material are solved. Following this provision, we have also done a certain step-by-step research work. First, phraseological units endowed with national-cultural semantics are selected from the general lexical stock. In this case, the phonetic or grammatical structure is investigated in order to identify information about the culture of potential carriers. In the process of grading the selected material, of course, the general language capabilities of students, their age and psychological characteristics are taken into account.

The next stages of the description of phraseological units from the point of view of linguistic and regional studies are: discussion of the phraseological unit from the point of view of its connection with the national culture of the people,



i.e. as a bearer of culture. Further, the studied phraseological units are characterized as sources of national and cultural information. It is also necessary to show the linguistic and cultural orientation of phraseological units: identifying the national-cultural semantics of phraseological units and their features, analyzing background phraseological units as sources of national-cultural information. We believe that before considering phraseological units from a linguistic and cultural point of view, it is important to make a short historical excursion.

For the first time, the term “phraseology” was introduced by Charles Bally. However, this term has not yet acquired citizenship rights in the writings of Western European and American linguists. It is important to note that Ch. Bally included phraseology in the stylistics [2, 102].

The question on phraseology as a linguistic discipline was first put forward by the outstanding linguist Professor E.D. Polivanov. He argued that “vocabulary studies the individual lexical meanings of words, morphology - the formal meanings of words, syntax - the formal meanings of phrases. And now there is a need for a special department that would be commensurate with the syntax” [3,25]. At the same time, the scientist had in mind not general types, but “the individual meanings of these individual word combinations, just as vocabulary deals with the individual (lexical) meanings of individual words.” E.D. Polivanov believed that phraseology “will take an isolated and stable position in the linguistic literature of the future, when in the consistent formulation of various problems, our science will be devoid of random gaps” [3,73].

V.V. Vinogradov was of the same opinion. In his scientific works on phraseology, V.V. Vinogradov formulated his doctrine of phraseological units in the Russian language and distributed them into semantic groups. This was a step forward for this time and contributed to the emergence of many works on the synonymy of phraseology of different languages.

The accumulation of systematized facts is one of the prerequisites for the creation of phraseology as a linguistic discipline. It is important to emphasize here that even after the publication of V.V. Vinogradov's works, phraseology did not become a linguistic discipline and did not go beyond one of the sections of lexicology. Despite the great importance of V.V. Vinogradov's work, the basic concepts of phraseology as a linguistic discipline were not developed by him. These include: the method of studying the synonymy of phraseological units, their stability and systemic nature. However, according to the correct remark of N.N. Amosova, “The concept of Academician VV Vinogradov is a special stage in the development of the theory of “indecomposable combinations”, higher than what was done in Russian linguistics before him” [4,141].

Phraseology was included in lexicology as one of its sections. However, many linguists have come to believe that phraseology is an independent linguistic discipline. It must be emphasized that many linguists did not support this point of view. Even such an outstanding linguist as A.I.Smirnitsky did not unconditionally support phraseology as a linguistic unit. “And although the study of phraseological compatibility is a special science - phraseology, which is a section of lexicology, phraseological compatibility must be taken into account when studying the syntactic structure of the language” [5, 36].

Many interesting thoughts are contained in V.L. Arkhangelsky's book “Stable Phrases in Modern Russian Language”, in which he notes that the following properties are a manifestation of the systemic character of phraseology: the traditional character of the system, the plurality of phraseological units, an organized set of constant combinations of verbal laws, etc.

Indeed, phraseology is the most lively, vivid and original part of the vocabulary of any language. The overwhelming majority of phraseology (for example, Uzbek and Russian) belongs to different functional styles and has an expressive coloring. Even stylistically neutral phraseological units are distinguished by their national originality and can acquire expressive meaning in context.

But still, the turning point, as already mentioned above, in the study of the phraseology of various languages was the well-known works of Academician V.V.Vinogradov. As you know, stable expressions with national and cultural semantics are also observed, i.e. linguistic and cultural phraseology. It also studies the semantic, structural-grammatical, expressive-stylistic properties of phraseological phrases, the peculiarities of their use, their classification is carried out, the sources and ways of replenishing the phraseological fund of the language are considered. The tasks of historical phraseology include the study of their origin, as well as the study of various changes in semantics, structure, lexical composition, stylistic properties of phraseological phrases. All this allows us to say that a rich palette of phraseological units helps to improve the speech culture of students and is of an educational nature.

The term phraseology is used not only as a name for a scientific discipline. It also denotes:

A set (system) of phraseological turns of a language (compare: phraseology of the Russian language, phraseology of the Uzbek language);

A set (system) of phraseological turns of a work or all works of a writer (phraseology of the novel "War and Peace", phraseology of Muhammad Yusuf, etc.);

A set of meaningless phrases in colloquial everyday speech. In this regard, it can be argued that



phraseological units contain a national-cultural component in their semantics.

A review of scientific literature on the topic of research and a comparison of phraseological turns in the Uzbek and Russian languages showed: the variety of types of turns of speech, the phraseological status of which is still controversial and not fully resolved. When determining the composition of Russian phraseology, disputes often arise.

The names of realities are both single words, that is, one-word nominative units, and combinations of two or more words, that is, several-word nominative units, for example:

Oq oltin-white gold - cotton, pashshadan fil yasama - do not make an elephant out of a fly, oyoqqa turgizdi - put on his feet - "cure, relieve, from illness", "grow, educate, bring to independence, boshin yuqotdi - lost his head, boshi osmonga yetdi - in the meaning of the concept of "joy", etc. Phraseological units are generally accepted designations of realities, transmitted by native speakers from generation to generation, stored in memory in a finished form.

The phraseology and vocabulary captures the rich historical experience of the people, they reflect all of their life problems, ideas related to work, craft, everyday life and culture of people, joys and sorrows, victories and defeats, rituals and habits, dreams, hopes and much more.

Phraseology is a universal phenomenon inherent in all languages of the world. There are many works devoted to the study of not only national, but international general linguistic properties of phraseology, in which the qualities of phraseology of any language as its immanent composition are considered. Since the concept of "phraseological unit" is ambiguously defined in the modern theory of phraseology, we used for research only the linguistic material whose belonging to phraseological expressions is recognized by linguists of all schools and directions. The phraseological image most often retains the national specificity of phraseological units, since it very often relies on realities known only to one people. It is very difficult for a representative of another nation who does not have background knowledge to guess the meaning of a phraseological unit.

Of course, the national-cultural semantics should be sought mainly in words, phraseological units and aphorisms. In the Russian language, there are various types of turns of speech, the phraseological status of which is still controversial and not fully resolved. When determining the composition of Russian phraseology, disputes often arise.

This is the general system of questions that reveal the essence of the problem posed by us. Of course, certain aspects of the material presented may seem controversial, which, in our opinion, stimulates

further discussion. An attempt to resolve issues requires the involvement of all interested parties in the research orbit, including linguists, social scientists, teachers, scientists from various spheres of public life.

Not all issues related to background phraseology are reflected in it. In the practice of teaching the Russian language to students of professional colleges, lyceums and schools, different phraseological phrases are used. We believe that in the educational process it is important to follow a certain system of working with phraseological units and show their role in communication.

In this regard, we can draw the appropriate conclusions: the national-cultural semantics should be sought mainly in words, phraseological units and aphorisms. Thus, it is important, in our opinion, to widely use the phraseological fund of languages in the lessons (classes) of the Uzbek and Russian languages in order to develop the speech culture of students, as well as to familiarize students with the realities of the country of the language being studied.

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A SURVEY ON CLASSIFICATION OF LIVER TUMOUR FROM ABDOMINAL COMPUTED TOMOGRAPHY USING MACHINE LEARNING TECHNIQUES

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ABSTRACT

Pattern recognition is a significant area of research in medicine because many applications like diagnostic system benefit from it. The aim of this research is to analyze developments of liver cancer detection using machine learning techniques for liver disease. The study highlights how liver cancer diagnosis is assisted using machine learning with supervised, unsupervised and deep learning techniques. Several state of art techniques are compared based on performance measures such as accuracy, sensitivity, specificity. Finally, challenges are also highlighted for possible future work.

KEYWORDS: *Machine Learning, Liver, Liver disease, Computer Aided Diagnosis system, Liver Cancer, Computed Tomography*

1 INTRODUCTION

Liver disease is any trouble of liver function that causes sickness. There are many different types of liver disease. The benign tumors are not cancerous, and doctors can remove them. The benign tumors cells do not spread to tissues around them or to other parts of the body. There are several types of benign liver tumors; they are hemangioma, hepatic adenoma, cysts, lipoma, fibroma, leiomyoma, and focal nodular hyperplasia (FNH). The most common type of benign tumor is hemangioma. This type of benign tumor consists of masses of twisted congested blood vessels and they start in blood vessels. The second most common tumor of liver is FNH. This tumor is the result of congenital arteriovenous malformation hepatocyte response. Although FNH tumors are benign, it is very difficult to differentiate from liver cancer and doctors remove the tumor sometimes when the diagnosis is unclear.

Primary liver cancer is the sixth most frequent cancer globally. Liver cancer is the second leading cause of cancer death. Cancer cells can invade and damage nearby tissues and organs. Most frequent primary liver cancers begin in hepatocytes (liver cells). This type of cancer is called hepatocellular carcinoma (HCC) or hepatoma. Hepatocellular Carcinoma (HCC) is the most common kind of liver cancer, which causes up to 80% of victims (Stewart et al 2014) Some of the other malignant tumors include cholangiocarcinoma, sarcoma, and hepatoblastoma. According to GLOBOCAN report (Bray et al 2018) that liver cancer is the 6th and 7th causes of demises in men and females respectively

Advances in medical imaging and image processing techniques have greatly enhanced the interpretation of medical images. Radiographic imaging modalities like Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) help in liver



cancer diagnosis. Medical imaging based on CT is suitable for the detection of liver, kidney, and lung cancer diseases. In fact, a large number of Computer Aided Diagnostic System (CAD) systems have been employed for assisting physicians in the early detection of liver, kidney, breast, and lung cancers.

2 LITERATURE SURVEY

Different types of liver cancer classification using machine assistance have opened up a new research area for early detection of cancer. Many authors have surveyed techniques for liver disease diagnosis. (Fujita et al(2010), Rathore et al(2011), Gunasundari et al(2013), Anwar et al(2018), Brunetti et al (2019), Saba (2020), Nayantara et al (2020)). Chen et al (1998) developed system based on fractal geometry and modified probabilistic neural network for the CT liver image classification. Gletsos et al (2001) proposed a computer-aided diagnostic system for the classification of hepatic lesions from CT images. The use of texture features, the application of dimensionality reduction with sequential forward floating selection (SFFS), and the choice of a classifier consisting of three sequentially placed neural networks, have resulted in a total classification performance of 98%, for four classes of hepatic tissue.

Mougiakakou et al (2003) proposed a CAD system based on texture features and a multiple classification scheme for the characterization of four types of hepatic tissue from CT images has been presented. In Gletsos et al (2003), the classifier module consists of three sequentially placed feed-forward neural networks (NNs). The first NN classifies into normal or pathological liver regions. The pathological liver regions are characterized by the second NN as cyst or "other disease." The third NN classifies "other disease" into hemangioma or hepatocellular carcinoma. Three feature selection techniques have been applied to each individual NN: the sequential forward selection, the sequential floating forward selection, and a genetic algorithm for feature selection. Result shows that genetic algorithm yields lower dimension feature vectors and improved classification performance.

In Valavanis et al (2004), an ensemble of classifiers has been constructed by using neural network to discriminate four hepatic tissue types: normal liver, hepatic cyst, hemangioma and hepatocellular carcinoma from non-enhanced CT images. Mala et al (2005) extracted Wavelet based texture features and used it to train the Probability Neural Network (PNN) to classify the liver as fatty liver or cirrhotic liver. Mala et al (2006,2008) extracted Biorthogonal wavelet based texture features and used it to train the PNN to classify the liver tumor as hepatocellular carcinoma, cholangiocarcinoma, hepatocellular adenoma and hemangioma

A classifier based on the support vector machine (SVM) is proposed for automatic classification in liver disease (Huang et al (2006), Lee et al (2007 a)).

Lee et al (2007 b) introduced a kernel-based classifier for liver disease distinction of computer tomography (CT) images. In Stavroula et al (2007), for each CT liver ROI, five types of texture feature sets, based on first order statistics, spatial gray level dependence matrices, gray level difference matrices, Laws' texture energy measures, and fractal dimension measurements, are extracted resulting in a total of 89 features. A Genetic Algorithm based feature selection method was applied to feature sets, when dimensionality reduction was desired, while two alternative Ensemble of Classifiers were investigated consisting solely of NN classifiers, or of a combination of NN and statistical classifiers. A plurality and a weighted voting scheme are used to combine the outputs of the primary classifiers of the examined CAD systems

Bharathi et al (2008) observed that the Zernike moment features are to be efficient in distinguishing the soft liver tissues into normal and abnormal. In Wang et al. 2009, an experienced radiologist identified ROI with CT liver images. Texture features based on First Order Statistics (FOS), SGLDM, Gray Level Run Length Method (GLRLM), and Gray Level Difference Method (GLDM) are extracted for each ROI. Multi class SVM is used to classify liver diseases into primary hepatic carcinoma, hemangioma, and normal liver.

Kumar et al (2010) proposed a novel feature extraction scheme based on multiresolution fast discrete curvelet transform (FDCT) and employed ANN classifier using FDCT features for computer-aided diagnosis of liver disease. Kondo et al (2011) proposed the hybrid Group Method of Data Handling type neural network algorithm using the artificial intelligence for the medical image diagnosis of liver cancer. Stoean et al. 2011 developed automatic tool to differentiate five degrees of liver fibrosis. Hill climbing algorithm is used for selecting best features. Cooperative coevolutionary algorithm is used to evolve set of rules that is based on training samples and then rules are used for characterizing between different degrees of fibrosis for the test case.

Kumar et al (2012) concluded that contourlet based features performed better than the Gray Level textural features. A tandem feature selection mechanism and evolutionary trained neural network model is proposed for the classification of stages for liver fibrosis within chronic hepatitis C (Gorunescu, 2012). Kumar et al. (2013) proposed liver CAD system to classify HCC and hemangioma. Wavelet coefficients and Contourlet coefficients are reduced using Principal Component Analysis (PCA). The reduced features are fed into PNN for classification of benign tumor from malignant and the accuracy got using CCCM feature is 96.7, which is higher than other features

In Zhou 2014, data visualization and classification method is presented to distinguish between healthy and diseased livers for early-stage diagnosis of liver



disease. Glowworm swarm optimization is used for optimizing parameters width and penalty constant of Support Vector Data Description that is used to improve diagnostic accuracy. Gunasundari et al (2016) applied Velocity bounded Boolean PSO for feature selection problem to select elite features from liver cancer data. When applied in liver CAD system, proposed algorithm selects elite features, which is used to classify hepatoma and cholangiocarcinoma as malignant and hemangioma and FNH as benign.

Alahmer et al (2016) proposed CAD system which divides a segmented lesion into three areas, i.e. inside, outside and border areas. Features extracted from the three areas are used to build a new feature vector to feed a classifier for better differentiation between benign and malignant lesions. Sayed et al (2016) proposed a fully automatic CAD system for liver and lesion segmentation and for liver disease diagnosis. The liver segmentation approach is based on a hybrid approach of fuzzy clustering and grey wolf optimisation, while a fast fuzzy c-means technique is employed for lesion segmentation. Shape and texture features are extracted from lesions and employed in a classification stage using a support vector machine classifier.

Chang et al (2017) proposed a computer-aided diagnosis (CAD) system to diagnose liver cancer using the features of tumors obtained from multiphase CT image. Three kinds of features were obtained for each tumor, including texture, shape, and kinetic curve. The texture was quantified using 3-dimensional (3-D) texture data of the tumor based on the grey level co-occurrence matrix (GLCM). Backward elimination was used to select the best combination of features, and binary logistic regression analysis was used to classify the tumors with leave-one-out cross validation

Kuo (2018) proposed a computer-aided diagnosis system with texture analysis for liver tumors in CT images. Improved PSO algorithm and SVM are combined for reducing features to less than 20 by the proposed two-stage selection method. Meanwhile, fuzzy logic weight value is adopted to determine the final classification result.

Gunasundari et al (2018) proposed Multiswarm Heterogeneous Binary Particle Swarm Optimization algorithm and tested in the feature selection phase of intelligent liver and kidney cancer diagnostic systems to select elite features from the liver cancer data. MHBPSO is a cooperation algorithm, which includes BPSO and its three variants such as Boolean PSO (BoPSO), Self Adjusted Hierarchical Boolean PSO (SAHBoPSO), and CatfishSelf Adjusted Hierarchical Boolean PSO (CSAHBoPSO). The elite feature sets are extracted using SAHBoPSO, CSAHBoPSO, and MHBPSO1 and they are used to classify the liver disease as benign or malignant with minimum error rate. Results show that MHBPSO1 is superior in selecting elite features.

Gunasundari et al 2019 proposed adjusted BPSO (ABPSO) to improve the performance of feature selection and the convergence speed of BPSO. The algorithm is verified in the feature selection module of liver CAD system. Yamashita et al (2020) shows the feasibility of using Convolutional Neural Network (CNN) to assign LI-RADS categories (LR-1-5) to liver observations on multiphase CT and MRI from a relatively small sample of images. Li et al (2019) designed a liver cancer diagnosis system that is based on BP neural network after dimensionality reduction by PCA, which combines multiple features and multi-phase information. In Al-Shabi et al (2019), the performance of SVM, MLP and GRNN has been examined in classifying the liver tissues (affected or unaffected) dataset.

Das et al (2019) proposed a new system called as watershed Gaussian based deep learning (WGDL) technique for effective delineate the cancer lesion in CT images of the liver. The segmented textural features were fed to deep neural network (DNN) classifier for automated classification of three types of liver cancer i.e. hemangioma (HEM), hepatocellular carcinoma (HCC) and metastatic carcinoma (MET). Sadeque et al (2019) presents an automated method of detecting liver cancer in abdominal CT images and classifying them using the histogram of oriented gradient - support vector machine (HOG-SVM) algorithm. In Rajathi et al (2019), to classify Chronic liver disease (CLD), the hybrid whale optimization algorithm with simulated annealing (WOA-SA) is used in selecting an optimal set of features. A hybrid ensemble classifier with support vector machine, k-Nearest Neighbor (k-NN), and random forest (RF) classifiers are used to classify liver diseases.

Dong et al (2020) presented the Hybridized fully convolutional neural network (HFCNN) method for liver cancer and lesion identification and segmentation. In Li et al (2020), Liver and tumor segmentation are implemented by a fully convolutional networks using a weighted loss function. Then the output of FCN is combined with the original CT image to construct a 4- channel image data as the input of a 9- layers CNN classifier.

Shapira et al (2020) implemented a weakly-supervised convolutional neural network (CNN) that learns liver lesion localisation without pixel-level ground truth annotations. Regions-of-interest are selected automatically based on the localisation results and are used to train a second CNN for liver lesion classification (healthy, cyst, hypodense metastasis). Lee et al (2020) designed multiple prediction models for 5-year metachronous liver metastasis (5YLM) using combinations of clinical variables (age, sex, T stage, N stage) and top principal components (PCs), with logistic regression classification

Literature review reveals [Table 1] that only some diseases like HCC and hemangioma are considered by many authors. Diseases like cholangiocarcinoma,



FNH, Fatty liver, cirrhosis and other diseases are not focused by many authors. Therefore, there is a requirement for a liver CAD system to characterize the

benign tumor from the malignant tumor, which considers the rare diseases.

Table 1: Performance of existing liver CAD system

Author Name Year	Textural Features and Classifier	Classifier	Disease	Performance
Chen 1998	detect-before-extract (DBE) system fractal feature information and the gray-level co-occurrence matrix	Modified PNN	Hepatoma and Hemangioma	accuracy = 83%
Gletsos 2001	Angular second moment, contrast, correlation, sum of squares, inverse difference moment, entropy, homogeneity, cluster tendency Feature selection : SFFS	Feed-Forward NN	Normal liver, hepatic cysts, hemangioma, and HCC	accuracy= 98%
Gletsos 2003	48 texture characteristics from spatial gray-level co-occurrence matrices- Angular Second Moment, Contrast, correlation, sum of Square – Variance, Inverse Difference Moment, Entropy, Homogeneity, Cluster Tendency Feature Selection: SFS, SFFS, Genetic Algorithm (GA)	Feed-forward NN	Normal liver, hepatic cysts, hemangioma, and HCC	accuracy = 97%
Mougiakakou 2003	FOS, SGLDM, GLDM, TEM, and FDM Feature Selection : GA	4-class NN – Back propagation Algorithm	Normal liver, hepatic cyst, hemangioma, and HCC.	accuracy = 97%
Valavanis 2004	texture features Feature Selection: GA	Two Neural Network (NN) and three statistical classifiers	Normal, hepatic cyst, hemangioma, hepatocellular carcinom	accuracy = 90.63%
Mala 2005	Orthogonal wavelet based texture analysis	PNN	Fatty or cirrhosis	accuracy = 95%, sensitivity = 96% and specificity = 94%
Huang 2006	Auto-Covariance Texture Features	SVM	Malignancy and hemangioma	accuracy 81.7%, sensitivity 75.0% specificity 88.1% positive predictive value 85.7% negative predictive value 78.7%.



Lee 2007 a	gray level and co-occurrence matrix features and region-based shape descriptors	SVM	cysts, hepatoma, cavernous hemangioma, and normal tissue	Average AUC of distinction is 0.91
Lee 2007 b	gray level co-occurrence matrix, and shape descriptors sequential forward selection (SFS) algorithm	kernel-based classifier	cyst, hepatoma and cavernous hemangioma	Average AUC of distinction is 0.91
Mougiakakou 2007	FOS, SGLDM, GLDM, TEM, and FDM Feature Selection : GA	5 Multilayer Perceptron NN	Normal liver, Hepatic cyst, hemangioma, and HCC	accuracy =84.96%
Bharathi 2008	Zernike moments and Legendre moments SFS,SBS	Nearest mean classifier	normal and abnormal with HCC	Zernike feature vector normal 98.33% HCC 90.67%. Legendre feature vector normal 97.66% HCC 81.67%
Mala 2008	wavelet based texture features	PNN	hepatocellular carcinoma ,cholangio carcinoma, hemangioma and hepatadenoma	accuracy = 90.2%
Wang 2009	FOS, SGLDM, GLRLM and GLDM	Multi Class SVM	HCC, Hemangioma, Normal	97.78%
Kumar 2010	FDCT	Feed Forward NN	HCC and hemangioma	Curvelet - 93.3% Wavelet - 88.9%
Stoian 2011	24 indicators like Stiffness, Sex, BMI, Glycemia etc.	CCEA	Different degrees of fibrosis	accuracy =62.11%
Gorunescu 2012	25 indicators like Stiffness, Sex, BMI, Glycemia etc. GA: Feature Selector	MLP	Different degrees of fibrosis	accuracy =65.21%
Gun-asundari 2012	Co-occurrence matrix and Fast discrete Curvelet transform	BPN, PNN and CFBPN.	hemangioma, and HCC	BPN - 96% PNN - 96% CFBPN -96%
Kumar 2012	FOS, GLCM,CCFOS, CCCMs Feature Selection : PCA	PNN	HCC and hemangioma	FOS - 79% GLCM -86% CCFOS -93% CCCM - 94%
Kumar 2013	Gray Level, Co-occurrence features, wavelet co-efficient and contourlet coefficient statistics PCA as feature Selector	PNN	Benign from malignant HCC and hemangioma	CCCM -96.7%
Zhou 2014	13 features Age, Gender, ALT, AST etc. Glowworm swarm optimization	SVDD Support Vector Data Description	Healthy and Unhealthy	accuracy =84.28%
Gun-	Textural Features	PNN, SVM	Hepatoma,	accuracy



asundari 2016	Velocity Bounded Boolean PSO		cholangiocarcinoma, hemangioma and FNH	PNN = 82.86 % SVM= 82.86%
Sayed 2016	FOS, Texture (SGLDM) and shape	SVM	Benign from Malignant	accuracy =97%
Alahmer 2016	Difference of feature	SVM and NB	cyst, hemangioma, HCC, and metastasis	accuracy =97.5%
Chang 2017	SGLDM, Shape, Kinetic curve characteristic	logistic regression analysis	Benign from malignant	accuracy =81.69%
Kuo 2018	Statistical texture features particle swarm optimization (PSO) algorithm,	SVM	Benign and Malignant	Accuracy 84.53% Sensitivity 80% Specificity 88.09% positive predictive value (PPV) 88.77% negative predictive value (NPV) 84.01%
Gun-asundari 2018	Textural Features Multiswarm heterogeneous binary PSO	PNN, SVM	Hepatoma, cholangiocarcinoma, hemangioma and FNH	Accuracy PNN = 82.86 % SVM= 82.86%
Gun-asundari 2019	Textural Features Embedded Binary PSO	PNN, SVM	Hepatoma, cholangiocarcinoma, hemangioma and FNH	Accuracy PNN = 77.14 % SVM= 82.86%
Yamashita 2020		Deep CNN	HCC	Accuracy 60.4%
Li 2019	Statistical Features PCA	Back Propagation neural network	HCC	accuracy = 96.98%
Das 2019	Textural Features	deep neural network (DNN) classifier	Hemangioma, HCC, metastatic carcinoma	accuracy = 99.38%
Rajathi 2019	Textural Features Feature Selection: Hybrid Whale Optimization with Simulated Annealing	Ensemble Classifier (SVM, k-Nearest Neighbour, Random Forest)	Chronic Liver Disease	accuracy = 98%
Sadeque 2019	Histogram of oriented gradient	SVM	liver cancer	accuracy = 94%
Lee 2020	Clinical Variables	CNN	metachronous liver metastasis	AUC- 0.747
Dong 2020		Hybridized Fully Convolutional Neural Network (HFCNN)	Liver Cancer Detection	ROC=0.96
Li 2020		CNN	hepatocellular	Accuracy



			carcinoma	diffuse tumors 98.4% nodular tumors 99.7% massive tumors 98.7%
Shapira 2020		CNN	Healthy, cyst, hypodense me- tastasis	accuracy 89.9 %

3 CONCLUSION

In recent years, significant efforts have been made towards the development of the liver CAD system. Machine learning plays a vital role in liver CAD because organs may not be signified precisely by a simple equation or formulae. This study contributed an extensive literature review on the development of liver CAD systems from abdominal CT. The literature review reveals that performance of CNN in recent liver CAD system is good. Only some diseases like HCC, Cyst and hemangioma are considered by many authors. Diseases like cholangiocarcinoma, FNH, Fatty liver, cirrhosis and other diseases are not focused by many authors. Therefore, there is a requirement for a liver CAD system to characterize the benign tumor from the malignant tumor, which considers the rare diseases. In future deep learning will play a major role in liver CAD system. In this future work, we aim to find liver CAD system using deep learning model which characterize benign and malignant tumor from abdominal CT that consider rare liver diseases also.

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A REVIEW OF EFFICACY OF SWAMIJI VETHATHIRI MAHARISHI ACUPRESSURE 14 POINTS EXERCISE THERAPY TO ALLEVIATE INSOMNIA RELATED PROBLEMS

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ABSTRACT

Sleep is a physiological and psychological state of rest for the body, mind, sense organs, and motor organs. All the rejuvenation functions of the body cells take place during sound sleep. It is a very well-accepted fact that the body and mind are closely interconnected with each other. Physical health and mental health such as depression or insomnia problems erupt due to mental worries. The inherent reason for the physical and mental health problems is due to the depletion of biomagnetism flowing in every individual to a level below a certain minimum critical level in the body. The main reason for the depletion of biomagnetism to a level below a certain minimum level can be attributed to wantonly neglecting or overindulgence or improper usage of five factors such as food, rest, sleep, sexual gratification, and usage of thoughts. Further, the main objective of this review article is also to show that the decrease in biomagnetism of an individual can be enhanced or enriched or boosted to above minimum critical level by the regular and unintermittent practice of acupuncture 14 points exercise therapy. This unique acupressure 14 points exercise therapy was designed by Swamiji Vethathiri Maharishi, a South Indian born Saint and Savant (1911-2006) by his untiring and unintermittent strenuous hard work for 40 years passed on this concept as a gift to the welfare of mankind. Hence Swamiji Vethathiri Maharishi's concept to get rid of diseases and to lead a disease-free, happy, and peaceful life is called as Simplified Kundalini Yoga (SKY) principle.

KEY WORDS -Swamiji Vethathiri Maharishi, Physical and Mental health, five factors, Biomagnetism, insomnia Acupressure 14 point's exercise, SKY yoga

INTRODUCTION

Maintenance of health is essential. All kinds of sensory pleasures, mental satisfaction, development, and perfection can be achieved only with perfect physical health. Pain or illness disturbs one's activities and diverts the mind towards the sufferings. The human body is a divine treasure with sophisticated mechanisms and wonderful works of Nature, the

maintenance of the body is the worship of the divine. It is the law of Nature that as much as one respects and acts in unison with Nature, he gets the boon of success and satisfaction in life. By the same law, one gets pains, miseries, and problems in life when he neglects or conflicts with the force and working order of nature. Thus, in this light, maintenance of health is of paramount importance for everyone.^[1]



DEFINITION

Every human being is a rare gift of God. Good health is the cause of pleasure and achievement in life. According to K.L. Chopra, Sleep is defined as a distinct state of mind and body, in which the body is extremely at rest, the metabolism is getting lowered and the mind becomes unconscious of the outer world. Asleep concentration does not become lifeless completely. Though, it shifts the direction of consciousness from one level to the next. In fact, the brain has to work very hard during the dreaming period of sleep than during the day. Sleep type is usually measured by an electroencephalogram (EEG) and is described behaviorally as reversible loss of consciousness. The EEG configuration during deep sleep comprises prevailing delta waves when the most restoration takes place.

TYPES OF INSOMNIA

Primary insomnia
Secondary insomnia

PRIMARY INSOMNIA

Primary insomnia means that an individual is suffering from sleep problems Such as stress, depression, heartburn, cancer, asthma, arthritis, pain, medication, or alcohol consumption. Insomnia can be acute, lasting for the short- term, or chronic, which is long-lasting. Primary insomnia can also be intermittent in circumstances such as emotional instability, where insomnia may last from one night to a few weeks. These problems may lead to some internal trouble in the sleep-wakeup cycle.

They include the following

Dyssomnia --- A common type of Dyssomnia is the circadian rhythm sleep disorder involving resetting of the body's sleep clock. It is abnormalities in the extent, quality or timing of sleep.

Hypersomnia --- Sleeping too much and sleeping at the various times.

Narcolepsy --- a sudden, irresistible need to sleep at all times of the day

Primary insomnia --- having trouble falling to sleep or staying asleep

Sleep apnea ---During sleep normal breath may be stops

Parasomnia --- unusual behavior or body events associated with sleep, including nightmare disorders which involve frightening dreams, sleep terrors, abrupt awakening and intense fear.

Sleepwalking --- sleepwalking or somnambulism may also be part of a mental disorder such as anxiety or depression.^[2]

SECONDARY INSOMNIA

Secondary insomnia is the indication or side effect of another sleep problem. Secondary Insomnia is when there is a medical, psychiatric, or environmental cause. If there is any medical problem intricate including emotional, neurological, physical, or additional sleep disorder, is called Secondary Insomnia. It is also considered Secondary Insomnia if sleep quality is being affected by the medications taking to alleviate health issues.^[3]

SIGNS AND SYMPTOMS OF INSOMNIA

Insomnia is a symptom, not a disease. People who have insomnia have trouble falling asleep, staying asleep, anxiety, Phobia, or depression. In this situation, they may get too slight sleep or require only poor-quality sleep. People may not feel relaxed when they awaken up. Lie awake for a long time before fall asleep. Sleep for only short periods,

- Be awake for much of the night
- Wake up too early
- Sleepiness during the day.
- General tiredness.
- Irritability.
- Problems with concentration or memory.
- No satisfaction in night sleep

CAUSES OF ACUTE INSOMNIA

According to S.D. Dwivedi 2000 in nutshell, worry, thoughts, of sex, over-indulgence in smoking or drinking, late dinners, preoccupation with business or work even after working hours, airless bedrooms, playing of games like chessboard or Rummy cards before going to bed are some of the main reasons of insomnia. Unnecessary noise in the atmosphere is also bad for sleep.

- Significant life stress such as loss change of a job, death of a loved one, and environmental stress.
- Calamity in the family such as divorce, separation, and struggle.
- Major illness.
- Emotional or physical discomfort.
- Some medicines may interfere with sleep due to taking regular medicines for cold, allergies, depression, high blood pressure, and asthma.



- Such as jet lag or switching from a day to the night shift. [4]

CAUSES OF CHRONIC INSOMNIA

- Depression
- Anxiety.
- Chronic stress.
- Pain or discomfort at night
- Chronic pain
- Chronic ailments such as cancer and arthritis

DIAGNOSING INSOMNIA

A sleep disorder problem may be diagnosed by analysis of medical history, physical examination, and blood tests. A sleep study known as polysomnogram and it may be recommended for sleep analysis. This test measures the following body functions during sleep – air flow and recuperating effort, Blood oxygen levels, blood pressure and heart rate, electrical activity in the brain, eye movement, and muscle movement. A multiple sleep latency test measures the speed of asleep. To check the levels of carbon dioxide and oxygen, an arterial blood gas test may also be required.

THE LONG-TERM HAZARDS OF SLEEP DEPRIVATION

Sleep deficiency can lower an individual's quality of life and also increase the risk of accidents. Up to 50 percent of risk individuals with sleep apnea have high blood pressure. They are also at increased risk of arrhythmia or irregular heart rhythm which may be fatal; enlargement and weakening of the right side of the heart; cardiac problems, heart attack; pulmonary hypertension, or high blood pressure in the lungs; and paralysis. [5]

TREATMENT FOR INSOMNIA

Acute insomnia may not require treatment. Slight insomnia can often be prevented or cured by practicing good sleep behaviors. If insomnia makes it hard to function during the day because of sleepy and tired, the doctor may prescribe sleeping pills for a limited time. Rapid onset, short-acting medications can help in avoiding side - effects such as drowsiness the following day. Avoiding sleeping pills may overcome the side effects for long life. Medical response for chronic insomnia includes first treating any causal conditions or health problems that are affecting insomnia. If insomnia continues, a doctor may suggest behavioral therapy. Behavioral approaches aid in changing the behavior that may worsen insomnia and learning new behavior to promote sleep. Methods such

as relaxation exercises sleep restriction therapy and overhauling may be very useful.

PREVENTIVE MEASURES TO KEEP INSOMNIA AT BAY

Healthy sleep behaviors are essential for treating insomnia . The following approaches (in addition to the steps mentioned in the "Preventive Care" section) may help treat the sleeping disorder condition:

- Maintain a constant sleep and waking time regularly.
- Arrange the bedroom as a place for sleep and sexual activity only, not for reading, watching television, writing or working.
- Don't take unnecessary naps, especially in the evening.
- Before bedtime take a hot bath.
- Always keep the bedroom cool, well ventilated, quiet, and dark.
- Don't look at the clock -- this stimulates anxiety and obsession about time.
- Don't take any fluids just before bedtime
- Do not exercise just before bedtime
- Don't use television, cellphone ,unnecessary gadgets just before bedtime
- Don't drink caffeine in the later hours of the day
- Move to another room with dim lighting if sleep does not occur after spending 15 - 20 minutes in bed[6]

UNDERSTANDING THE CONCEPT OF SWAMIJI VETHATHIRI MAHARISHI'S TREASURE FOR REAL SLEEP

Every living being is a biomagnetic unit. The man is a refined laboratory and mechanism performing sophisticated and specific functions managed by the two divine principles of Nature: force and consciousness. The human being life is due to the collective activities of the Physical body, the astral body, Biomagnetism, Genetic Centre and the transformation process of biomagnetism into five elements that is pressure, sound, light/heat, taste, smell and the special process of mind. Biomagnetism is the fuel for all the physical and psychic functions

The charging capability of biomagnetism and its capacity to hold reserve in the standard is limited. So both physical and psychic functions cannot constantly and simultaneously run without break. The involuntary physical functions such as digestion, breath, and blood circulation are carried out by the autonomic nervous system; the psychic and sensory functions, which are voluntary actions, are carried out by the somatic



system. Both are wonderfully regulated and controlled by the central nervous system, for which the blueprint and directing power is the genetic Centre.

The physical body transforms into seven organic elements: Extract, food, flesh, fat, bone, marrow and sexual vital fluid. This sexual vital fluid is the necessary compound of the physical body. In the human body, the centripetal force of the magnetic and spiritual life force Centre is the major portion of the sexual vital fluid. Also is deposited at the same Centre. These three phenomena jointly comprise the “Genetic Centre”, which is the seat of all mental, physical and spiritual functions in the human body. [7]

Swamiji well explains that the main stock place for biomagnetism is the Genetic Centre. The omniscient consciousness has provided programmed aspects within the Genetic Centre to control the charge (production), flow and consumption of Biomagnetism to the body and mind. The Genetic Centre has provided the blueprint for charging Biomagnetism as required and shutting off the consumption when the minimum critical level is reached. We cannot measure or account for the charge and consumption of Biomagnetism by our limited capacity of mind. Nevertheless, let us have a conceptual grasp to understand the working systems of the biological switches for charging and shutting off excess consumption of our Biomagnetism.

The biomagnetic force is required minimum stock for both the autonomic and somatic functions. Minimum critical level of biomagnetism stock is programmed and provided in our body. The Quantity of biomagnetic force charged is not enough to carry out both the somatic and autonomic functions continuously and concurrently. So, after about 16 hours of conscious activity, the pressure force of biomagnetism is decreased: which shows that the stock is less than the minimum required. Then the balance pressure of biomagnetic force in stock, plus the hourly chargeable quantity is only enough to maintain automatic functions for the next several hours. So the central nervous system switches off the somatic functions automatically, Conscious sensory functions and movements of limbs stop and the man goes to sleep.

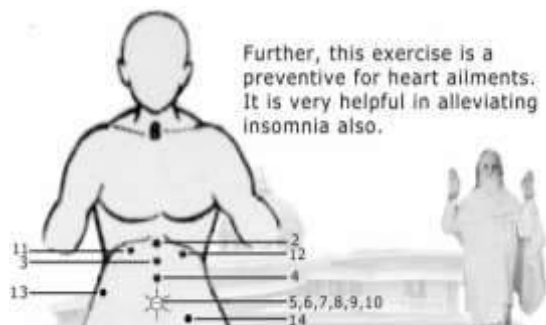
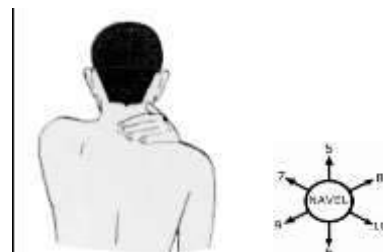
An individual sleeps for several hours the charged bio-magnetic force which is surplus after meeting the requirements for the autonomic functions is added to the stock. When the stock is replenished and comes back to the biomagnetic force that causes the central nervous system to again switch on the somatic functions. [8]

BIO-MAGNETISM - LIMIT AND METHOD FOR ENJOYING THE SOUND SLEEP

The theory of bio-magnetism is a new occurrence put forth by Swamiji Vethathiri Maharishi. According to him, bio-magnetism is a fundamental vital force that determines the physical health of a human being. Every human being is blessed with bio-magnetism. So, every individual’s should maintain the existing level of bio-magnetism for the routine metabolic activities of the body, then it is said to be a balanced sensation felt like peace. On the other hand, if bio-magnetism is depleted below critical level results in the development of various diseases. [9]

The essential reason for the reduction of bio-magnetism is due to negligence or over indulgence or improper use of five factors i.e. Overeating, Relaxation, Sleep, Sexual Gratification and Usage of thoughts. If these five factors are rigorously followed by a limit and method process, each can lead a disease-free life.

Acupressure 14 points exercise designed by Swamiji Vethathiri Maharishi - “To keep insomnia away”



PRACTICAL SESSION

Throughout this exercise, take the left hand towards of the right side of the neck and press the neck



bone with the three middle fingers. Using the thumb and index finger of the right thumb press the 13 points in the body concentrate on them for ½ a minute. Thus, the life force circulation is balanced. The body becomes active after relieving obstructions in the circulation. [10]

1. First lie down on the back and close your eyes.

Set your left arm at the elbow point diagonally and let the first three fingers of the left hand touch and press the top of the spine in the upper back. This position can be taken as positive point (point 1). From this positive point 1, the Biomagnetism energy is passed on to point 2.

(While pressing each point, we should concentrate every point for 30 seconds until the exercise complete)

2. Using the tip of right index finger press the point 2 which is one inch directly below the chest cavity. This point 2 is taken as positive point. Other fingers should not touch the body.

3. Shift the tip of the right index finger further downwards by one inch and this point is taken as point number 3

4. Shift the tip of the right index finger further downwards by another one inch and this point is taken as point number 4 which is one inch above the navel..

5. Place the tip of the right index finger in the Centre of the navel and this point is taken as point number 5 and pull upwards. Imagine the navel as a clock, this point number 5 is at 12 o'clock.

6. Place the tip of the right thumb in the Centre of the navel and press pull downwards. This point is taken as point number 6. This point corresponds to 6 o'clock.

7. Using the tip of the right index finger in the Centre of the navel and this point is point numbers is 7 and pull upwards towards the right shoulder which corresponds to 10.30 in the navel clock.

8. Place the tip of the right index finger in the Centre of the navel and this point is point number is 8 and pull upwards towards the left shoulder which corresponds to 1.30 on the navel clock.

9. Place the tip of the right index finger in the Centre of the navel and this point is point number is 9 and pull downwards towards the right thigh which corresponds to 7.30 on the navel clock.

10. Place the tip of the right thumb in the Centre of the navel and this point is point number is 10 and pull downwards towards the left thigh which corresponds to 4.30 on the navel clock.

11. Place the tip of the right index finger one inch below the centre of the lowest rib on the right chest and this point no is 11.

12. Place the tip of the right index finger one inch below the Centre of the lowest rib on the left chest and this point no is 12.

13. Using the tip of the right thumb one inch below the extreme right side of the lowest rib (Where gall bladder is accommodated) and this point no is 13.

14. Using the tip of the right index finger exactly midway the navel and the left groin that is thigh point and this point no is 14

CONCLUSION

This acupressure 14 points exercise can very well be practiced by those patients who suffer from heart trouble with insomnia problems. They can do this exercise twice a day and others can practice one time a day. They will definitely feel a peace of mind in the long run. The continuous practice of this exercise reduces not only Blood pressure but also removes the imbalance in the blood circulation in the whole body. This exercise is protective measure for heart disease. It reduces high blood pressure. The nervous system gets regulated and balanced. The stiffness of nerves gets rectified. It helps to have a sound sleep.

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EFFECTS OF TREASURY SINGLE ACCOUNT (TSA) POLICY ON CORRUPTION IN NIGERIA

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ABSTRACT

Corruption is one of the evil confronting the development of Nigeria. It is a cankerworm that has eaten deep into the fabrics of the Nigeria system. Various measures have been adopted by various governments and administration at all levels to combat the ugly menace. This paper assesses the effects of treasury single account (TSA) policy on corruption in Nigeria. The study found that the treasury single account (TSA) policy was introduced to block financial leakages, reduce corruption, promote transparency and prevent mismanagement of government's revenue in public sector organizations. The paper revealed that the major challenges hampering the effective and efficient implementation of the treasury single account (TSA) policy include: Inability of federal government to remit appropriately to the various agencies, uncertainties underlying federal government inactions and actions, bottlenecks/bureaucracy, internet platform delays, inefficient human capital development and time wasting in the banks and payment points. The policy will also enable the government at the centre to know its cash position at any given time without any hindrance. Therefore, it is recommended in the paper that the federal government must demonstrate the political will to ensure the sustainability of TSA policy and also tenaciously pursue its implementation by states and local governments in the country.

KEYWORDS: *Treasury Single Account (TSA), Corruption, Public Sector, Organizations, Nigeria*

INTRODUCTION

Treasury Single Account is a public accounting system under which all administration income, receipts and pay are gathered into one single record, usually maintained by the country's Central Bank and all payments done through this account as

well (Sailendra & Israel, 2011). The purpose is essentially to guarantee responsibility of government income, upgrade straightforwardness and keep away from misapplication of public assets. The maintenance of a Treasury Single Account will assist with guaranteeing legitimate money the board by disposing



of inactive funds usually left with various business banks and in a way to enhance reconciliation of revenue collection and payment (Adeolu, 2015).

According to International Monetary Fund, (2010), TSA is a bank account or a set of linked bank accounts through which the government carries out various business activities, and gets a statement of account of all transactions. This instrument helps the Ministry of Finance a lot as it ensures the proper management of funds available to the nation's treasury. Oyedele (2015) posited that a vital subject in the past was the delayed payment of income collected on behalf of government as some Ministries Departments and Agencies do business with those funds for their selfish gains at the detriment of infrastructural development and budget execution by the government.

The issue of corruption can be traced to the fall of man in the Garden of Eden. Corruption remains elusive and ever strives to thrive in most unlikely places. Corruption in Nigeria has become so disturbing that the former president, Chief Olusegun Obasanjo once said "the truth is that, it is much tougher to fight corruption in a developing society than it is in the developed world" (Obasanjo, 2003). Different nations have adopted different strategies to contend with corruption depending on its ramifications and depth. Whatever dimension may assume, it is certain that a nation with high incidence of corruption cannot grow or develop. This is because corruption is antithesis of growth and development, leaving in its trail negative socio-economic consequences. Corruption has brought instability, insecurity and failure of institutions (Fibadu, 2005) both the military and civilian administration so far have not fared any better than each other. Military interventions were always predicated to corruption against the civilian administration, but rather than remedy the situation, the military plundered the country resources to an unprecedented level. Thus, over the years, corruption became entrenched in government and the society. The status quo has become fashionable whereby politician and public servant see government as a means of becoming rich over night. The past administrations in Nigeria condemned and declare war against corruption; while the present administration has declared zero tolerance for corruption. Whether or not the trend is going to be reversed, is a question of time.

The approach of embracing a Single Account was accommodated in the constitution. Section 80 (1) of the 1999 Constitution as amended states "All incomes, or other cash raised or received by the Federation (not being incomes or other cash payable under this Constitution or any Act of National Assembly into some other public asset of the Federation established for a particular reason) shall be

paid into and form one Consolidated Revenue Fund of the Federation"; successive governments have continued to operate multiple accounts for the collection and spending of government revenue in deliberate disregard to the provision of the constitution, which requires all government revenues be remitted into a single account (Oguntodu, Alalade, Adekunle & Adegbie, 2016).

Organization is a social unit of people that is structured and managed to meet a need or to pursue collective goals. All organizations have an administration structure that determines relationship between the various activities and the members, and partitions and assigns jobs, obligations, and authority to do various tasks. Organizations are open systems that affect and are affected by their environment (Marshak, Thomas (2017).

The Nigerian society according to Okwoli (2004) is packed with stories of wrong practices such as ghost workers on pay roll of ministries, extra-ministerial department and parastatals, fraud and embezzlement of public funds. Corruption has been like a cankerworm eating deep into the fabrics of the Nigerian system, keeping the country in a terribly precarious situation, despite the huge human and natural resources it possesses. Bello (2001) also averred that there is a near total absence of the notion and ethics of accountability in the conduct of public affairs in Nigeria. This according to Bello (2001) has created a variety of loopholes that have facilitated and sustained corrupt practices which has been the bane of public sector financial mismanagement in Nigeria.

CONCEPT OF TSA

"Treasury Single Account (TSA)" has been defined from different perspective but nearly depicts the same idea. Adeolu (2015) defined Treasury Single Account as "a public accounting system under which all government revenue, receipts and income are collected into one single account, usually maintained by the country's Central Bank and all payments done through this account as well." Utilization of a Treasury Single Account will aid the management of funds and helps in of funds.

Oyedele (2015) viewed Treasury Single Account as "a unified structure of government bank accounts that gives a consolidated view of government cash resources. Based on the principle of unity of cash and the unity of treasury, a Treasury Single Account is a bank account or a set of linked accounts through which the government transacts all its receipts and payments. The principle of unity follows from the fusion of all of all money regardless of its end use. While it is important to recognize singular money



exchanges for control and detailing purposes, this intention is accomplished through the accounting system and not by holding or depositing cash in transaction specific bank accounts. This enables the treasury to delink management of cash from control at a transaction level.

Onyekpere (2015) defines Treasury Single Account as a unified structure of government bank accounts enabling consolidation and optimal utilization of government cash resources. It is a bank account or a set of linked bank accounts through which the public authority executes every one of its receipts and payments and gets a consolidated view of its cash position at any given time. This presidential directive would end the previous public accounting situation of several fragmented accounts for government revenues, incomes and receipts, which in the recent past has meant the loss or leakages of legitimate income for the federation account.

Nelson, Adeoye and Ogah (2015) are of the opinion that Treasury Single Account is an account that all ministries and government departments" account balances are collated by the Central Bank, whereas there is an intermediate account for every ministry and department that shows the total of all debt and credit transactions. Thus, the total amount will be reflected eventually on the treasury single account at the end of the day.

Chukwu (2015) define Treasury Single Account (TSA) as a network of subsidiary account linked to a main account such that, transactions are effected in the subsidiary accounts but closing balances on these subsidiary accounts are transferred to the main account, at the end of each business day. Therefore, Ministries, Departments and Agencies (MDAs) keep up their individual records with the money deposit banks, yet every day financing of their payment are made using the central or main account, which is resident with the Central Bank, just as their closing balances at the end of day are transferred to the main account.

The TSA is principally a cash management tool for efficient management of the cash position. Prior to the implementation of the TSA, government was incurring finance cost on debit balances in some MDA's accounts while it was earning close to nothing on the credit balances of other MDAs. With the TSA, the net balances on all the MDA accounts now reside with the Central Bank; hence, the government avoids incurring interest costs when it has positive net position (Eme et al, 2015).

TREASURY SINGLE ACCOUNT (TSA) IN NIGERIA

The Treasury Single Account (TSA) strategy was acquainted with block monetary leakages, promote transparency and forestall blunder of government's income, brings together all administration accounts, empowering it forestall income loss and mismanagement by revenue-generating agencies (Bashir, 2016). Firstly is a unified structure of government bank accounts enabling consolidation and optimal utilization of government cash resources? Through this bank account or set of linked bank accounts, the public authority executes every one of its receipts and payments and gets a consolidated view of its cash position at any given time. The expectation of executing this account was for the advantages of Federation ruled by democracy.

In 2012, it was on record that government ran a pilot scheme for a single account using 217 ministries, department and agencies as a test case. The exercise saved Nigeria about N500 billion in frivolous spending. The accomplishment of the pilot roused the public authority to actualize completely TSA, prompting the mandates to banks to give the innovation stage that will assist with obliging the TSA as it encourages ideal and more complete bookkeeping reports (Gwarzo, 2016).

Section 80 (1) of the 1999 Constitution as amended states that "all revenue or other money raised or received by the Federation (not being revenue or other money payable under this Constitution or any Act of the National Assembly into any other public fund of the Federation established for a specific purpose) shall be paid into and form one Consolidated Revenue Fund of the Federation". Successive governments have continued to operate multiple accounts for the collection and spending of revenue, thereby disregarding the provision of the constitution which require the remittance of all the revenue into a single account.

Effects of Treasury Single Account (TSA) in Combating Corruption

The adoption of TSA in Nigeria has helped the federal government has it pools and unifies all government accounts through a single treasury account. The advantages and benefits of the Treasury Single Account are numerous. The consolidation into a Treasury Single Account paves way for timely capture and payment of all due revenues into government coffers without the intermediation of multiple banking arrangements and this has contributed in no small measure in waging war against corruption . Establishing a unified structure of government bank



accounts via a treasury single account (TSA) will solve these problems, improving cash management and control. It should therefore, receive priority in any public financial management (PFM) reform agenda. A TSA also facilitates better fiscal and monetary policy coordination as well as better reconciliation of fiscal and banking data, which in turn improves the quality of fiscal information. Finally, the establishment of an effective TSA significantly reduces the debt servicing costs (International Monetary Fund, 2010).

According to Pattanayak and Fainboim (2010), the primary objective of a TSA is to ensure effective aggregate control over Government cash balances. Other objectives for setting up a TSA are as follows:

- Minimizing transaction costs during budget execution, notably by controlling the delay in the remittance of government revenues (both tax and nontax)
- Controlling the delay in the remittance of government revenues by collecting banks, in both tax and non-tax;
- Making rapid payments of government expenses;
- Facilitating reconciliation between banking and accounting data;
- Efficient control and monitoring of funds allocated to various government agencies; and
- Facilitating better coordination with the monetary policy implementation

Benefits of Treasury Single Account (TSA)

(Pattanayak, 2010) in a The International Consortium on Governmental Financial Management (ICGFM) seminar elaborated on TSA and its usefulness for any government. According to him TSA aids cash management, and facilitates other functions such as handling payment from all spending units separately, unlike the multiple bank account system. TSA a single account comprising of linked up accounts or can be seen as network of accounts operated as one, this account is usually operated by the country's central bank. It is also a unified structure of government bank accounts that gives a consolidated view of government cash resources. The emphasis is placed on the mode of operation as well as the cash control advantage and elimination of idle funds it has.

The Benefits of the Treasury Single Account (TSA) include:

- Ensures complete, real-time information on government cash resources
- Helps preparation of accurate and reliable cash flow forecasts
- Optimizes the cost of government operations
- Facilitates efficient payment mechanisms

- Improves operational and appropriation control during budget execution
- Enhances efficiency and timeliness of bank reconciliation

Advantages of Treasury Single Account (TSA)

According to Bashir, (2016) offers several advantages of TSA;

- Provides a safe haven for government cash deposits which minimizes credit risk exposure.
- Aids the efficient management of government liquidity, and facilitates the central bank's coordination of its monetary policy operations in managing liquidity in the economy with government's cash and debt management functions.
- Can facilitate cost effective banking arrangements and speedy settlements (it might be possible to negotiate with the central bank to act as the clearing house for government operations, which may speed settlement).
- Allows for clarity of banking arrangements and remuneration policies between the treasury and the central bank (a service level agreement is normally negotiated to clarify obligations and responsibilities when the central bank acts as the clearing house for government operations).

CONCEPT OF CORRUPTION

Corruption may not be easy to define. There is no universal agreement on what constitute corruption. Be that as it may, some researchers have differently defined corruption. According to Tanzi (2008), "corruption is by and large not hard to perceive when noticed." The most simplified and the famous definition is that embraced by the World Bank, which defines corruption as the abuse of public power for private benefits (Gray and Kaufman 2008)

Regardless, the alternate points of view through which corruption might be seen, a shared belief of assessment imagines it as the execution of a bad habit against the public prosperity. Lipset and Lenz (2000) defining corruption in the above line maintained that it is an effort to secure wealth or power through illegal means for private gains at public expense. In recent years, increasing attention has been devoted to understanding the reasons for and consequences of corruption. The existing literature can be divided into two broad strands.

Corruption like most concepts in social sciences is classified into the group of concept described by Gallie (2016) as highly contestable concepts. Thus, the definition that may be attached can



be dissected and restricted. Otite (2016) defined corruption as “the perversion of integrity or affairs through bribery, favour, or moral depravity... societal impurity” (cited in Okafor, 2009). Lipset and Lenz (2000) define corruption as an “effort to secure wealth or power through illegal means for private gain at public expense” (Fagbadebo, 2007).

Corruption, according to Nkom (2012) is the perversion of public affairs for private advantage. Nkom was also of the view that corruption includes bribery or the use of unauthorized rewards to influence people in position of authority either to act or refuse to act in ways beneficial to the private advantage of the giver and then that of the receiver. It includes the misappropriation of public funds and resources for private gains, nepotism etc. In a similar vein, Doig (2016) described corruption as, the use of official position, resources or facilities for personal advantage, or possible conflict of interest between public position and private benefit. This involves misconduct by public officials and usually covered by a variety of internal regulations (Public Service Rules and Extant Rules).

According to Andrig and Fjelstad (2001) viewed corruption as a "mind boggling and multifaceted wonder with numerous circumstances and end results, as it takes on different structures and settings". According to them, one of the significant troubles in conceptualizing debasement is that while it is hard to vanish it has an ability to take on new structures (Andrig and Fjelstad, 2001). In a similar fashion, Tanzi (2008) maintains that while it is difficult to define corruption, the crisis associated with corruption is not difficult to recognize.

THE CAUSES OF CORRUPTION IN NIGERIA

A number of factors have been identified as instrumental to enthrone corrupt practices especially in developing countries. Some evidence substantiate that they have the following link: political and cultural variables, social diversity, ethno-linguistic fractionalization, and the proportion of a country's population adhering to different religious traditions. Thus, the sociopolitical economy system and the culture of a society could make the citizens more prone to corrupt activities.

According to Epele, (2006), the fundamental factors that have engender and sustained corrupt practices in Nigeria include:

- The weak institutions of government;
- Political office as the primary means of gaining access to wealth;
- Conflict between changing moral codes;

- The weakness of social and governmental enforcement mechanism;
- The absence of a strong sense of national community;
- Dysfunctional legal system;
- Less effective government works with slow budget procedures;
- Lack of transparency;
- The great inequality in the distribution of wealth;
- Low salaries and poor working conditions, with few incentives and rewards for efficient and effective performance;
- Influence or pressure of 'polygamous household' and extended family system, and pressure to meet family obligations, which are more in Less Developed Countries;
- The culture and weird value systems of the Nigerian society. Becoming corrupt is almost unavoidable, because morality is relaxed in the society, and many people struggle for survival without assistance from the state;
- Widespread poverty.

EFFECT OF CORRUPTION ON PUBLIC SECTOR FINANCIAL PERFORMANCE

The outcomes of corruption on a country's socio-political and economic improvement are myriad. The foremost impact of corruption is that it prompts a decrease in economic development and improvement by bringing motivators down to invest, it likewise prompts a divestment in such economies. Genuine investors are consistently careful about contribution pay-offs prior to being permitted speculation rights or operational licenses. This is because of the way that there is no assurance that lubed authorities may keep their side of the understanding, and with no authority cover they address in the event of agreement penetrate, the fleeced financial investor is all alone (Epele, 2006). To the above is the fact that foreign investors are also prone to withdraw their capital from a country with high incidence of corruption because the risk involved in doing business in such nations sometimes outweighs the benefits. Granted that it has been argued that corruption provides both local and foreign investors the leverage to surmount bureaucratic impediments, yet the number of such successful deals is a far cry from the avalanche of investors that have stripped off their hard-earned money (Keeper, 2010).

Corruption also alters the pattern of government expenditure. Experience has shown that in highly corrupt countries, officials throw government funds more into large and hard-to manage projects, such as airports or highways than on social services like health and education. It has been a stumbling block



to people enjoying the social fruits of good governance (Ibrahim, 2003). Corruption contributes immensely to inhibition of economic performance; it negatively affects investment and economic growth, which is detrimental to national development. If corruption discourages investment, limits economic growth and alters the composition of government spending, it automatically hinders future economic growth and sustainable development.

Corruption undermines development by distorting the rule of law and weakening the institutional foundation on which economic growth depends. Corruption is not peculiar to developing nations alone. It is a plague that affects both developed and developing economy, although the occurrence in developing societies like Nigeria seems to be pervasive. Dada (2014) declared that corruption is by all accounts the most mainstream issue examined as a reason for underdevelopment in Nigeria today. Pretty much every segment of the nation is influenced by corruption going from education sector to the different organs of government. Corruption is the biggest single inhibitor of fair monetary improvement in numerous nations of the world including Nigeria.

Corruption tarnished the image of a country; maybe, Nigeria experiences more than most social orders a shocking global image made by its powerlessness to manage pay off and debasement. For example, the 1996 investigation of defilement by the Transparency International and Goettingen University positioned Nigeria as the most corrupt country among the 54 countries on the study, with Pakistan as the second highest (Moore, 2017). In the 1998 Transparency International Corruption Perception Index (CPI) survey of 85 countries, Nigeria was ranked 81 (Lipset and Lenz 2000). Worse still, in the 2001 Corruption Perception Index (CPI) survey of 85 countries, the image of Nigeria slipped further south, as The Transparency International Corruption Index, 2001 ranked Nigeria 90 out of the 91 countries studied (second most corrupt nation in the world) with Bangladesh coming first.

PUBLIC ORGANIZATIONS ADMINISTRATION

Public organizations are government Ministries, Departments and Agencies (MDAs). Some MDAs generate revenue while others does not. Funds are needed to carry out some huge and elementary administrative functions in MDAs. Probably, some MDAs hitherto sponsored these administrative functions from funds generated to meet up with deadline and ensure efficiency. However, the evolution of the TSA Policy in 2015 marked a new era.

Currently, MDAs apply for funds from the government for all administration expenditure. It is not unlikely that it might take some time before MDAs receives the requested funds. The MDAs will probably experience some administrative challenges and inefficient performance when funds requested are not provided or provided at a very late hour (Eme, Chukwurak & Iheanacho, 2015).

In the same vein, Utsu, Muhammed, and Obukeni (2016) noted that the Nigerian University System (ASSU) believed that their financial independence that TSA deprived them off is extremely central for the effective performance and administrative efficiency of university system in Nigeria. It has also been observed that the financial institutions but commercial banks specifically were not better off since the implementation of TSA. This is because public sector funds constitute a huge portion of commercial banks deposit.

CONCLUSION

The policy will greatly improve the management of government revenue. Corruption is a cankerworm that hinders development in any society. Introduction of a Treasury Single Account in Nigeria is a key element of an efficient and effective public financial management system and an essential tool for minimizing government and frivolous spending which was introduced by the federal government of Nigeria to fight against corruption. Besides, the system will likely reduce the mismanagement of public funds by revenue-generating agencies. It is also expected to help check excess liquidity, inflation, high interest rates, round-tripping of government deposits, and the sliding value of the naira.

Recommendations

The following recommendations were made:

- For the success of the treasury single account policy, government should engage in massive public enlightenment about the important of the policy. Government should overhaul the capacity of the Federal Ministry of Finance and the CBN to cope with challenges associated with enforcement of the provisions of the TSA.
- For the treasury single account (TSA) policy to be effective the Fiscal Sunshine Bill needs to be put in place, which if enacted will open up the financial activities of government in a manner that there will be no seriously concealing spot for the individuals who divert or loot government money. For example, with Fiscal Sunshine Act in place, budgeting process and implementation, including contract awards, ought to be in the open for



Nigerians to see both how incomes are generated and how open money is being spent by those in government, and why.

- The ineffectiveness in public sector administration resulting from TSA installation should be investigated and lasting solution administered by the government.
- There should be an incessant sensitization of relevant stakeholders on the necessities for TSA.
- In order ensure the success of the TSA policy, the federal government must demonstrate the political will to ensure the sustainability of the TSA policy and also tenaciously pursue the implementation of TSA by state and local governments in the country.

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ROLE OF INFORMATION AND PROMOTIONAL STRATEGIES FOR INDIAN PHARMACEUTICAL FIRMS IN THE AGE OF DIGITAL MARKETING

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ABSTRACT

“I think the biggest innovations of the 21st Century will be the intersection of ...biology and technology. A new era is beginning...” –Steve Jobs

According to WHO, Promotional materials for pharmaceutical products should be accurate, fair and objective and presented in such a way as to confirm not only fulfil legal requirements but also to high ethical standards. India has pharmaceutical marketing is reaches 55 billion US dollars by 2020.

The improper strategy of introducing of a product whether in form of the diet, nutraceutical, or medicinal products result in noteworthy, while occasionally dangerous, result in community¹ The objective of this paper is to synthesis the existing information on current status; explore the potential opportunities and constraints the Role of Information and Promotional Strategies India.²

BACKGROUND

Now a day's almost all big pharma giants will focus on well-established markets in developing countries or countries under the poverty line for their patented products central agencies, producers, presentation, promotion agencies, The most common issues in case of pharma marketing facing are

1. Patent versus generic one.
2. Outcome of research and development.
3. Spiraling health care budget across the world.

Nowadays India is the fastest growing market in all the sectors including pharma one.MNC's are made strategic shift towards India, India in 10 to 15 years will become the capital for non-communicable diseases. New agendas like Govt. open market policy and open insurance sector as well as privatization Make in India policies plays a vital role in this arena. In the

case of India now universal pharma giants realize that it is possible to produce significant outcome from India, were almost pharm products are either lifesaving drugs or anti-infective ones. Business attitude offers a break for startups operations to develop in rapid mode. The World Health Organization (WHO) addresses cardinal health as a global strategy in 2020-2024, and its digital health policy draft defines digital health as “the field of knowledge and practice associated with the development and use of digital technologies to improve health”³

It is not only necessary to develop a new molecule but it is also then to promote the already existing drug molecules. Indian pharma market constituted with ten thousand plus companies. These MNC's are not only concentrating on dietary supplements and nutraceuticals. But they also focus on



generic molecules. It is observed that these firms are throwing away outdated Marketing ideology. This new technology ranges from scientific listing to doctors from using newer systems for better insights focus on issues like patient compliance. Before Lockdown due to COVID -19, shows that India will be one of the fastest developing countries in the Asia Pacific region. Adding to it India should grow at a confounding 31% per annum in coming next five years.⁴

Now total Indian national position in the world is transformed. It gains the worlds third-largest manufacture zone steadily people giving more concentration towards their health, especially in preventive and maintenance aspect. But MNC's must know that the big pharmaceuticals grow here only when they adopt an India centric strategy which focuses on the operational management to take suitable decision to observe current and future trends periodically ^{5,6,7,8}. After 2014 the formation of the stable central government and policies like 'Make in India' and 'Swachh Bharat Abhiyaan' brings the Pharma market into to some extent right track.

Unfortunately, even after promising steady growth Indian pharmaceutical industry observes brisk pace for a sum of a large number of small-scale pharmaceutical setups were obliged to cut down as well as shut down their business from 2008. Whether it is a big or small business, the need for pharmacoeconomics and advance in business economics has been growing in the current years. The Business Intelligence allows Industry to squeeze statistics from different podiums and white colour people must take appropriate decisions yields tangible investments.

Pharmaceutical industries one more problem is life-saving medicines should be sold at a nominal price to the great segment of the population of the country, as per government norms. under the 'Essential Commodities Act'. The Business Intelligence systems analyses the forecast with latent decision of pharma marketing polices must trust because of the shift in pharma marketing. Various social media like Google, Facebook, Whatsapp and Others, which are the association for performing study projected to an understanding of Artificial intelligence skills for the wellbeing of society ⁹ The details of defendants, project team technology, evaluation of strategy, and ethics, which were captured in line with the WHO's building blocks for health systems ^{10,11,12,13}

DISCUSSION

According to an intelligence source, the progress rate in India is at 25% to 40% per annum. Pharma Business, Various pharmaceutical involved in a revolution and It need of to build a philosophy rather

than focusing too much on various new technology, build a patient-centric environment which helps the people start trusting in our pharma business, It is observed that US models won't work in India, Here demographic factors also play a vital role. So Integrated operations bring consistency and cost efficiencies It is observed tactics have got more consideration in the last two decades both domestic and international market. The growth and success of business firms are directly associated with the marketing strategies ¹⁴.

It is quite common rural area requires more medicines than urban due to the conditions like improper sanitization, cleanness, lack of improper drinking water leads to germ-infested conditions like various infections like Malaria, Kala-Azar, Cholera which needs the consumption of more medicine. Hence campaign using leaflets, newspaper, Ads on boards are not so influential one. As It is observed that the most of rural people are not well-educated so efficiently they would be communicated through a roadshow, proper usage of Celluloid Screen etc. ¹⁵ With promoting advanced Business intelligence and the progress in promotion approaches and skills at the universal level the last era, the pharma industry has also industrialized in a way similar to further profit-driven industries ¹⁶. To facilitate customers the business enterprise should also be enumerated in various search engines and entertain e-commerce ¹⁷. In simple online marketing has its issues and concerns,¹⁸ The strategies like Digital Marketing has meaningfully changed the healthcare and Pharma sector ¹⁹ while digitalization boost Pharma industry ²⁰.

CONCLUSION

Hereby I , conclude that Information and Promotional Strategies for Indian Pharmaceutical Firms in the age of Digital Marketing, it is still infancy in the age. However, especially due to the COVID-19 pandemic, there were inadequate lessons in this particular domain and hence this could be the very right time more appropriate now due to the COVID-19 pandemic.

Some Pharmaceutical Industries are still using outdated programming strategies that have been replaced throughout the world, improper the usage of state-of-the-art analytical and decision .This is the right time to use supportive systems like Python, R, Geospatial Technology and Artificial Intelligence, Marketing Intelligence and Business Intelligence. The strategies used by pharmaceutical firms are must be proactive in nature. Pharmaceutical Marketing is a purpose of feeling the pressure to generate and implement business organized strategies in an



organized form. “strategies and approaches used by the pharmaceutical industry can also focus on the research as their basic outline, through strategic Pharma Companies find out the sales power to win the support of their clients and at the same time hold their accountability by providing clinicians with the much-needed material and distributing the best products to the community.

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WHAT IS RIGHT AND WRONG IN MARKETING THE PHARMACEUTICAL PRODUCTS

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ABSTRACT

Pharmaceutical marketing is the ability to reach the right health care professionals with the right note and spell. According to the Cambridge English Dictionary the business activity that involves finding out what customers want, using that information to design products and services, and selling them effectively. But recent studies on pharmaceutical marketing is full of controversy like issues and concerns of ethical and unethical marketing.

INTRODUCTION

Marketing is an integral part of promoting the new and existing product in the community. Marketing is the study and management of exchange of relationship with consumers. According to American Association Marketing (AAM) is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large. While marketing research is the function that links the consumer, customer, and public to the marketer through information-information used to identify and define marketing opportunities and problems.

A study conducted by the Bristol-Myers company to predict medical advance reveals that during 1986 rate of Cancer cure was about 50% but it is around 65% during 2002. Streptokinase was the drug of choice in MI with the risk of thrombolysis. But now advancement in technology has increased the rate of survival. It has been found that we can produce the artificial genome and we can regenerate nerve cells by using genetic engineering¹. But at the same time, the Oxfam report says that the pharma industry is not

interested in delivering its services to the developing countries².

The amount spent on health care research has tripled since the last two decades (Data till 2010). Its large contribution from pharmaceutical industries, Health care research requires more funding also. Health is one among the basic need of a human being and transparency is required in the pharmaceutical industry and the promotion industry. As WHO clearly says the Promotional materials for pharmaceutical products should be accurate, fair and objective and presented in such a way as to confirm not only to legal requirements but also to high ethical standards. It is observed that, whether it is big or small need for Artificial Intelligence (AI) has been increasing in the recent times The AI allowed organizations to extract information from multiple platforms and applications to take better decisions which drive tangible returns on their investments.

At the same time, Cyert and March's Behavior theory of Firm says that a firm is a unit having multi-goal, multi-decision, and multi-product. If we just look towards the amount requires to invent a new drug molecule, it takes around seven years and costs



approximately \$282 million which can be reduced to more than 50% by conducting the same research in developing countries like India³ and main countries of Africa continent. i.e. what Rudolph Virchow said, "Medicine is a social science and politics is nothing but medicine on a large scale".

It is quite a common assumption that the Government is paying for basic research and corporate sector to applied research⁴. This can be altered slightly by imposing taxes on peoples those from developed countries like the US, Japan Consumers enjoys more Surplus, which should be used for applied research. And at the same time corporate sector, one who enjoys more Producers Surplus must involve in conducting Research in basic sciences like genetics, biochemistry etc and also gives more stress to the education. For instance: Bill and Melinda Gates funding \$100,000 each for 78 innovative projects which may help Society in future and Venus Remedies working along with Punjab University to develop Typhoid Detection kit, as Typhoid claims nearly 6,00,000 deaths annually around the world.

Dr Prathap Reddy of APOLLO Health Care Group, India says "Innovation and superior patient experience are the two aspects of our business model". While Experts says, countries must prepare for self-sufficiency in their health care system. Developed countries as well as WHO, they are giving more importance to the providing health care to those who are unable to afford, Rather than paying for research, education, and control over drug prices those which are much higher than production costs, Dr Mansfield said. Therefore tracking cost information enables the management to take appropriate decision while allocating resources as planned and observe their trends periodically.

DISCUSSION

Recently Muhammad Jami Husain et al mentions about the availability, accessibility and high costs of pharmaceuticals is an ongoing challenge to the countries under poverty and developing one. According to the World Health Organization (WHO), 2018, the world pharmaceutical market cost projected around \$ 1.4 trillion per annum across the world and trend suggests it increases globally. The study conducted on "Theory of planned behaviour" suggests that the effect of Physicians communication with pharma sales representatives on their behaviour prescription⁷. Apart from this pharmaceutical markets provide a rich work of innovative research opportunities for marketing academics. The marketing must be cognitively, affectively, and behaviorally oriented. Efforts have been put on an additional focus on pharma academics

for better output. This only gives a healthier result. The public-private partnership must be in equal contribution from the pharma sector, especially MNCs and Govt, this may bring a dramatic shift in pharmaceutical academics. Developing countries must have their framework so that they can deliver goods on time. In developing countries that both public and private partnerships must emerge and develop services for the development of science. Former US President Ronald Reagan once said "Each generation goes further than the generation presiding it because it stands on the shoulder of that generation you will have opportunities beyond anything we've ever known"

CONCLUSION

The need for business intelligence and artificial intelligence provides an opportunity for new and small businesses to run their business operations efficiently and helping companies to grow faster. There is no wrong if any corporate company conduct or sponsor a CME to advertise or to share their development in R & D but it is left to the medical community to decide what is wrong and right and also to decide what is their role and contribution to the society, Why because Medical fraternity is not an immature and unaware about ethics of practice as they aware about Hippocrates oath says "I will prescribe regimens for the good of my patients according to my ability and my judgment and never do harm to anyone" before starting their practice. The Artificial Intelligence systems also offer tools which help to get predictive analysis to forecast potential results of a decision. This kind of analysis can be seen in the cases of capital budgeting which greatly influence the future of an organization. Predictive analysis also helps organizations in building personalized marketing tactics keeping because of a shift in the market demand as well as designing a competitive price and deals to retain the customers. Ultimately it left to the doctor's community to encourage moral practice and pharmaceutical companies must decide how to use Producers Surplus as a bribe or to share with the scientific community for Humanitarian cause.

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AMLAPITTA (HYPER ACIDITY): A REVIEW ON PREVENTIVE TOOLS

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ABSTRACT

The clinical presentation of Amlapitta can be correlated to Hyper Acidity¹. The complications, economic burden of expenses, adverse effect of drugs and alarming increase in incidence and prevalence of acid peptic disorders among population create a need of prevention of etiology of this disorder. By having the knowledge regarding Aharaja (food related causes), Viharaja (regimen related causes), Manasika (psychological causes) and Upashaya (relieving factors)/ Anupashaya (aggravating factors) factors of Amlapitta, one can prevent and as well manage the clinical conditions. Hence in the current article an effort is done to review the concept of Amlapitta with respect to symptoms and etiology which act as the tools for Nidana parivarjana (Circumvent the causative aspects) in Amlapitta.

INTRODUCTION

Amlapitta is a disease mainly affecting *Annavaha Srotas* (gastrointestinal system)². Improper food habits, busy stressful lifestyle are the main factors which have led to the increased prevalence. The disease *Amlapitta* can be compared to a number of diseases according to modern science such as hyper acidity, Gastritis, GERD and in general acid peptic disorder. These diseases are commonly employed for any clinical conditions with upper abdominal discomfort like indigestion or dyspepsia in which the specific clinical signs and radiological abnormalities are absent.

For the treatment of this disease, antacids are usually used which are having certain adverse effects on long term usage. The most common adverse effect of aluminum containing antacids is constipation. Formation of insoluble aluminum salts appear to produce the constipating effect. This may progress into intestinal obstruction, fecal impaction, development of

hemorrhoids and anal fissures. In the patients with impaired renal function, aluminum can be retained in the brain and other tissues leading to Hyperaluminiumaemia³.

INCIDENCE & PREVALENCE

The survey studies of Acid peptic disorders conducted in India validated increasing incidence and prevalence of the disorder among various age groups.^{4,5,6,7} These studies emphasize that the prevalence of GERD in India is likely to be between 8% and 19%, which is comparable to GERD prevalence rates published in western countries.

CLASSICAL REFERENCE AND SYMPTOMS

Amlapitta is one of the diseases which is mentioned by many authors in the classics. *Kashyapa samhitha*⁸ and *Madhava Nidana*⁹ texts have emphasized



the *Amlapitta* disease in detail. *Haritha samhitha* entitles *Amlapitta* as *Amlahikka*¹⁰. *Pathya kalpanas* (therapeutic diet recipes) for *Amlapitta* are found in *Sharangadhara samhitha*^{11,12}. *Bhavaprakasha*^{13,14}, *Yogaratanakara* and *Vangasena* have also explained about *Amlapitta* similar to *Madhava Nidana*.

The symptoms¹⁵ of *Amlapitta* are *Avipaka* (indigestion), *Klama* (exhaustion without exercise), *Utklesha* (nausea), *Tiktha Amla Udgara* (bitter and sour belching), *Gaurava* (heaviness), *Hritdaha* (burning sensation in the chest), *Kantadaha* (burning sensation in the throat), *Aruchi* (anorexia). On the other hand, gastritis or hyperacidity are having symptoms such as bloating of abdomen, bloody/ black stools/ bloody vomiting, dysphagia, hiccups, nausea, weight loss, burning sensation in the chest usually after eating which might go worse at the night, Regurgitation of food/ sour liquid etc¹⁶.

NIDANA OF AMLAPITTA

Amlapitta is a disease caused by various *Nidanas* (causative factors), which can be divided as *Aharaja* (food related causes), *Viharaja* (regimen related causes) and *Manasika Nidanas* (psychological causes)

1. Aharaja Nidanas (food related causes)¹⁷

Aharaja nidanas of *Amlapitta* include *Adhyashana* (Eating before digestion of previously taken food), *Abhishyandi Bhojana* (Sliminess producing foods), *Ajirna* (Indigestion), *Ama* (Undigested food), *Apakvanna* (Uncooked), *Amla Sevana* (Sour foods), *Antharodaka Pana* (Taking water in between food), *Athi Ushna Ahara* (Excessive hot foods), *Athi Snigdha Ahara* (excessive unctuous foods), *Athi Ruksha Ahara* (excessive dry foods), *Athi Drava Ahara* (excessive liquid articles), *Bhuktwa Bhuktwa* (Repeated eating), *Bhrishta Dhanya* (Fried cereals), *Dushtanna* (Spoiled food), *Gorasa* (Milk products), *Guru Bhojana* (Heavy foods), *Ikshu Varika* (Preparations of Sugar-Cane), *Kulattha Sevana* (Excessive use of horse gram), *Madya* (Wines), *Parushithanna* (stale food), *Pittaprapkopi Annapana* (Food and drinks which stimulates Pitta Dosh), *Pruthuka Sevana* (Consumption of Flattened rice obtained from boiled paddy), *Pulaka Sevana* (Consumption of Wildly growing rice), *Viruddha Ashana* (Eating incompatible foods)

2. Viharaja Nidanas (regimen related causes)¹⁸

Viharaja Nidanas of *Amlapitta* includes *Akala Bhojana* (Untimely food), *Athi Snana* (Excessive bath), *Avagaha* (Tub bath), *Diwaswapna* (Day sleep), *Vegadharana* (Suppression of natural urges)

3. Manasika Nidanas (psychological factors)¹⁹

Manasika Nidanas of *Amlapitta* includes *Chinta* (Anxiety), *Shoka* (Grief), *Bhaya* (Fear), *Krodha* (Anger) and *Dukh-Shayya Prajagare* (Sleeps on an Uncomfortable Bed)

Certain studies proved that *Aharaja* (food related causes), *Viharaja* (regimen related causes), *Manasika* (psychological causes) related to *Amlapitta* have strong association in manifesting and aggravating/ relieving the condition of *Amlapitta*^{20,21}.

UPASHAYA (Relieving Factors) OF AMLAPITTA

Upashaya (relieving factors)²² of *Amlapitta* is explained in *Kashyapa Samhitha* while describing *Doshaja* types of *Amlapitta*.

In *Vataja* type of *Amlapitta Snigdha Dravyas* such as ghrta (ghee) will act as *Upashaya* and in *Pittaja* type of *Amlapitta Swadu* and *Sheeta dravyas* such as godhuma(wheat), mudga (green gram) will act as *Upashaya*. In *Kaphaja* type *Ruksha* and *Ushna dravyas* such as takra (buttermilk) will be acting as *Upashaya* will be acting as *Anupashaya*.

DISCUSSION

“*Prakshalanat hi Pankhasya, Doorat Aasparshnat Pram*” As per this reference, it is better to stay away from *Nidanas* (causative factors) rather than putting efforts to cure disease after its manifestation. *Amlapitta* has majority of *Nidanas* (causative factors) as *Aharaja* (food related causes), *Viharaja* (regimen related causes) & *Manasika Bhavas* (psychological causes). Hence one can adopt life style modification in order to control and prevent this disorder. The failure in this attempt will definitely lead to complications of the gut leading to plethora of problems. Hence ideal life style adoption becomes the cheaper and most ideal tool to overcome this disorder.

CONCLUSION

Preventive tools of *Amlapitta* are *Ashta Ahara Vidhi Vishesha Ayatana* (Eight rules regarding ideal method of food consumption), *Dwadasha Ashana Pravicharana* (Twelve rules of food consumption), *Viruddha Ahara Nishedha* (Avoiding Noncompatible foods), adoption of ideal *Dinacharya* (Adopting ideal daily regimen) and *Rutucharya* (Adopting ideal seasonal regimen), *Yoga & Rutu Anusara Shodhana* (Seasonal specific purificatory therapies). More emphasis should be laid to educate community at large about these most essential health etiquettes of *Ayurveda*. The following of these concepts not only help to prevent only *Amlapitta* but also other lifestyle disorders too. As per the quotation, ‘*Sarvam Anya*



Parityajya Shareeram Anupalayet²³, one should give prime importance to protect body from disease and to maintain good health status.

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