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VISION

The vision of the journals is to provide an academic platform to scholars all over the world to publish their novel, original, empirical and high quality research work. It propose to encourage research relating to latest trends and practices in international business, finance, banking, service marketing, human resource management, corporate governance, social responsibility and emerging paradigms in allied areas of management. It intends to reach the researcher's with plethora of knowledge to generate a pool of research content and propose problem solving models to address the current and emerging issues at the national and international level. Further, it aims to share and disseminate the empirical research findings with academia, industry, policy makers, and consultants with an approach to incorporate the research recommendations for the benefit of one and all.

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AN ANALYSIS ON VEGETABLES MARKETING OF ODISHA- A CASE STUDY IN ANGUL DISTRICT

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ABSTRACT

In India production of vegetables being highly seasonal with extreme perish ability causes several problems in production, as well as in marketing .India is the world's largest producer of many vegetables. Whereas Odisha ranked fourth in terms of production of vegetables. Angul district in Odisha, which plays an important role for the vegetable growers and also for the consumers that the farmers could be benefited and the consumers could fetch fresh vegetables in proper price. vegetables will play an important role by contributing adequate vitamins, carbohydrates, minerals, fibres etc but it is a known fact that horticulture sector in India is constrained by low crop productivity, limited irrigation facilities and underdeveloped infrastructure support like cold storages, markets, roads, transportation facilities etc. There are heavy post-harvest and handling losses, resulting in low productivity per unit area and high cost of production. Analysis shows, there is an inverse relation between the farm size of the respondents and their overall problems of marketing vegetables in farmers' market. This study was done in Angul district of Odisha, India. The total sample size of farmer 152, middlemen 35 and the consumer is 52 respondents have been selected from that region. Chi-square analysis was used to test the hypotheses. There was significant relationship ($p \leq 0.05$) among respondent's age, educational background, landholding for vegetable farming, social aspects, benefits, and awareness of vegetable farming. This research is mainly focuses on the village level data of Angul district of Odisha. It focuses on the problems of farmers relating to marketing of vegetables as well as distribution and warehousing issues of the village farmers. It also focuses on the middle men and customer satisfaction towards the vegetable marketing in-term of quality and price.

KEYWORDS: Vegetable Marketing, Vegetable Production, Farmers, Middlemen, Customer, Market Efficiency, Channel Performance,

INTRODUCTION

Agriculture sector plays an important role for the survival of the rural people. The importance of agriculture in the socio-economic fabric of India can be realised from the fact that the livelihood of majority of the country's population depends on agriculture. The agriculture sector contributes only about 18 per cent of the total Gross Domestic Product (GDP). The 2011 Census estimates that 83.3 crore people, about 69 percent of the country's total population of 125 crore, continue to live in rural India. Vegetables produced in India is marketed mostly either through regulated APMC (Agricultural produce market committee) markets or totally unregulated local and vegetable markets. Marketing through these traditional channels is characterized by very little attention to grading, sorting and storage with weak regulation, poor handling during loading, unloading and transport resulting in loss of 30-40 percent of the total production. Supply chains for vegetables tend to be multi layered, which has implications on the farmers' share in the final consumer price and the quality of produce due to multiple handling. In contrast to fragmented supply chains in traditional market, supply chains developed by organized retail chains are supposed to be well coordinated. Hence vegetable marketing is a measure to assured and remunerative marketing opportunities hold the key to agriculture, the backbone of the economy, dictates the livelihood system of farmers and millions of people. As discussing the distribution management we can't ignore the medium through which we transport the product producer to end-user. In vegetable distribution system transportation plays a very important role in the distribution management. Without proper transportation the goods can't be delivered to the customer in a right time and in a right quality. [1-26]

The present study "An Analysis on Vegetables Marketing of Odisha-A Case Study In Angul District" analyzes the dynamics of marketing practices of selected vegetables in the district of Angul. It is one of the vegetables producing districts of the state Odisha, fertile soil and irrigation facility. But still improper infrastructure, poor marketing practices, no storage facility are the hindrances for the vegetable growers to gain quality return of their investment. The analysis tries to identify the issues related to vegetable business and suggest measures to improve the system by optimizing the marketing efficiency of vegetables in the district of Angul, India. The Food Agricultural Organization of the United Nations (FAO) in its report has predicted that the India's population will overtake China's population by 2030. In that scenario, where millions of people are malnourished and below poverty line, there is need for improving quality of life through food and nutritional security. The challenge thus, demands for adjustment of the structure of the agricultural system to resonate with internal stipulation

The study area includes the district of Angul. The Angul district is purposively selected because of production of the different vegetables. In Angul district, farm economy is characterized by existence of large number of marginal and small categories farmers, sound agricultural productivity and extremely low level of investment in agriculture. On the other hand, soil fertility, good rainfall and suitable weather for producing vegetables are favorable for agricultural diversification in this region. Farmers' perceptions of accepting new innovations at farms are very encouraging. In the first stage four blocks of the district were selected having the maximum acreage under the vegetable namely Chendipada, Angul, Banarpal & Athamalik. At the next stage 8 villages were selected from each of the selected blocks where the potentiality of the selected vegetable production exists namely Bhagilakata and Brahmanibil of Chendipada block, Karatapata and Pokatanga of Angul block, Talmul and Tubey of Banarapal block, Nuaghar and Nuagaon of Athamalik block. The number of respondent vegetable growers was

152 Respondents selected from each of four blocks, specifically from the block having the maximum acreage under the vegetable. Eight villages from eight gram-panchayat. Six important vegetables commonly grown in the selected blocks have been opted for the present study. The vegetables selected are porbal, ladyfinger, brinjal, cauliflower, bittergourd, cucumber. In addition to vegetable growers, 35 middlemen including wholesalers cum commission agents and 52 customers were contacted from each of the blocks under the study. Total three set of questionnaire was designed name Farmer (sample-1), Consumer (sample2), Middlemen (sample-3). This questionnaire was designed to gather information on marketing cost, marketing margin, buying-selling pattern and issues in vegetable business. Another questionnaire was designed to find out customers satisfaction pattern in quality, availability and pricing of vegetables in different village heats, daily markets in the town and other market place.

OBJECTIVES OF THE STUDY

Research on vegetable marketing concerned with farmers and middle men with emphasis on the customer issue, pricing, channel management practice of vegetables in the villages of Angul. The following research questions are addressed in the research:

1. What are the channel management practices of vegetables of Angul district of Odisha?
2. What are the key issues faced by the farmers while selling their vegetables?
3. How do farmers set their price of vegetables?
4. What are the important factors responsible for holistic marketing of vegetables?
5. What are the roles of middle men for effective distribution of vegetables?

The overall objective of the study is to understand and analyze the dynamics of marketing practices of vegetables in Angul district. The specific objectives are:

1. To access the channel performance of vegetable market.
2. To find out difference issues like quality and pricing of vegetables.
3. To analyse the process of selling and effectiveness.
4. To study the status of vegetable production and marketing.

SIGNIFICANCE OF THE STUDY

The findings of the study are being expected to provide valuable information to the farmers, policy makers, Government, Development Organizations for making policies and development initiatives on Vegetable Marketing.

REVIEW OF LITERATURE

Druker, 1954 [6], the primary objective of all business is to fulfil and satisfy the needs and wants of the society. Marketing is, therefore, a basic function of all business enterprise. The marketing concept holds that the key to achieving organizational goals consists in determining the needs and wants of target markets and delivering the desired satisfactions more effectively and efficiently than competitors.

Kotler, 1999 [11], under marketing concept, the emphasis is on selling satisfaction and not merely on the selling a product. The objective of marketing is not the maximization of profitable sales volume, but profits through the satisfaction of customers.

Aparna & Hanumanthaiah, 2013[1], found in their research that the net price received by the farmer in supermarket channel was more compared to traditional channel. The total marketing cost incurred by growers was more in traditional channels than super market channel. The producers' share in consumers' rupee is higher for supermarket channel than traditional market channel. Again, another author stated same thing as above that the organized retailer usually gives higher price and make faster payment to farmer than traditional retailer.

Rajkumar & Jacob, 2010 [20], organized retailers buying centre are closer to the firm-location which reduce the transportation charge for farmer and also in organized retail loading and unloading charge also bear by retailer. This shows that organized retailing is more beneficial for farmer and more efficient than the traditional market channel

Karim & Biswas, 2016 [8], there is problem in traditional marketing channel, by considering the study of the market intermediaries are categorized in to three groups 1) value added, 2) non value added, 3) necessarily value added activity. About 64% of activities are non-value activity because of redundant in nature of non-value added activity which leads to price rises up to double of producer margin.

Pramanik & Prakash, 2010 [16], producer and consumer are not getting proper justice due to the inadequate access of the market information and underdeveloped infrastructure. Another author got the similar result that the farmers share on consumer's rupees is low due to unreasonably high price fixed by middlemen which discourage farmers to increasing their marketable surplus.

Ruben, R., Boselie, D. & Lu, H., 2007 [21], beside direct market channel and the organised market channel the farmers can get more beneficial by making co-operation among the farmer. As they sale the product in bulk amount the transaction cost will minimize and farmers will be more beneficial which reflect on the study. Here they found that that Trade-offs between higher production cum-investment costs (i.e. fixed investments, variable production costs and economies of scale) with expected savings in transaction costs (governance and opportunistic behaviour) are registered that could hinder contractual delivery.

Pokhrel, 2010[19], as vegetable is highly perishable in nature market infrastructure and the information regarding the marketing of vegetable most important factors to know the efficiency of the vegetable marketing. Here an author stated that due to perishability nature of firms' product and lack of proper storage, firms have weaker price negotiation as compare to trader & High profit margin taken by the Trader due to the poor information of price margin as compare to the trader

Njaya, 2014[15], another author also stated the similar thing that farmers are facing losses due to the poor infrastructure for storage, transportation and marketing facilities for fruits and vegetables of farmers and Presence of informal middlemen are main cause of reduction of profit margin of farmers).

Kumar, 2012[10], in this case Kumar says that there is moderate level problems of marketing vegetables and fruits in farmers' market with reference to freight charges, lack of proper grading, high carriage and other handling charges, exploitation of growers by market force, lack of proper quality control, long distance of market access, seasonal production, long marketing channel, delay payment, lack of cold storage place, advance sales agreement, inadequate post-harvest care, monopoly of middleman, bulkiness of products and low exports and there is low level problems of marketing vegetables and fruits in farmers' market with reference to irregular supply, primitive method of selling and price fixation, packing and loading problems, quality

variation in production, packing of products. But they found that high level problems of marketing vegetables and fruits in farmers' market with reference to damage cost, intermediaries' exploitative practices, perishability of product, transportation cost and high storage cost. As stated above major problem are intermediaries' exploitative practices but still more than half of the fresh fruits and vegetables produced flows through the wholesalers.

Wongprawmas, R., Canavari, M., & Waisarayutt, C. 2015[26] Policy making is not only the main issue in the Indian context but main issue is to implementing the policy. Properly implementation of the policy can make the vegetable marketing more efficient. They conducted a study on "A multi stakeholder perspective on the adoption of good agricultural practices in the Thai fresh produce industry".

Kahlon and Tyagi, 1983,[9] Agriculture means activities aimed at the use of natural resources for human welfare, that means it includes all the primary activities of production. But, generally, it is used to mean production crops and livestock. Marketing refers to a series of activities involved in moving the goods or services from the producer to consumer. It includes all the activities involved in the creation of time, place, form and possession utility. According to Thomsen, the study of agricultural marketing comprises all the operations, and the agencies conducting them, involved in the movement of farm-produced foods, raw materials and their derivatives

Maoria and joshi, 1995, [14] In the marketing of agricultural commodities, the following market functionary's/marketing agencies are involved:

I-Producers: Most farmers or producers, perform one or more marketing functions. They sell the surplus either in the village or in the market. Some farmers, especially the large ones, assemble the produce of small farmers, transport it to the nearby market, sell it there and make a profit. This activity helps these farmers to supplement their incomes.

II-Middlemen: Middlemen are those individuals or business concerns which specialize in performing the various marketing functions and rendering such services as are involved in the marketing of goods.

III-Wholesalers: Wholesalers are those merchant middlemen who buy and sell food grains in large quantities. They may buy either directly from farmers or from other wholesalers.

IV-Retailers: Retailers buy goods from wholesalers and sell them to the consumers in small quantities. They are producers' personal representatives to consumers. Retailers are the closest to consumers in the marketing channel.

V-Itinerant Traders: Itinerant traders are petty merchants who move from village to village, and directly purchase the produce from the cultivators. They transport it to the nearby primary or secondary market and sell it there.

VI-Village Merchants: Village merchants have their small establishments in villages. They purchase the produce of those farmers who have either taken finance from them or those who are not able to go to the market. Village merchants also supply essential consumption goods to the farmers. They act as financiers of poor farmers. They often visit nearby markets and keep in touch with the prevailing prices.

Acharya and Agrawal, 2006, [3], philosophy of the establishment regulated markets is the elimination of malpractices in the system). The specific objectives of regulated markets:

I- To prevent the exploitation of farmers by overcoming the handicaps in the marketing of their products;

II- To make the marketing system most effective and efficient so that farmers may get better prices for their produce and the goods are made available to consumers at reasonable prices;

III-To provide incentive prices to farmers for inducing them to increase the production both in quantitative and qualitative terms.

IV-To promote an orderly marketing of agricultural produce by improving the infrastructural facilities;

RESEARCH METHODOLOGY-

Study Area

Sampling Procedure- A multi-stage convenient sampling was used for this study. The total sample size of farmer 152, middlemen 35 and the consumer is 52 respondents have been selected from that region.

Research Type-The type of research design followed for the study will be exploratory research design.

Data Collection- This research is mainly based on quantitative pattern; hence the data was obtained by means of structured questionnaires. The data will be collected from farmers by doing field visit. Total three set of questionnaire was designed name Farmer (sample-1), Consumer (sample2), Middlemen (sample-3). Farmers' perceptions of accepting new innovations at farms are very encouraging. In the first stage four blocks of the district were selected having the maximum acreage under the vegetable namely Chendipada, Angul, Banarpal & Athamalik. At the next stage 8 villages were selected from each of the selected blocks where the potentiality of the selected vegetable production exists namely Bhagilakata and Brahmanibil of Chendipada block, Karatapata and Pokatanga of Angul block, Talmul and Tubey of Banarapal block, Nuaghar and Nuagaon of Athamalik block.

DISTRICT	BLOCK	VILLAGES	FARMER RESPONDENTS	CONSUMER RESPONDANTS (BLOCKS)	MIDDLEMEN RESPONDENTS (BLOCKS)
ANGUL	CHENDIPADA	BHAGILAKATA	23	16	6
		BRAHMANIBIL	18		
	ANGUL	KARATAPATA	13		
		POKATANGA	17		
BANARPAL	TALMUL	16	10	9	
	TUBEY	26			
ATHAMALIK	NUAGHAR	NUAGAON	14	12	10
		NUAGAON	25		
TOTAL	4 BLOCKS	8 VILLAGES	152	52	35

SOURCE: DATA COLLECTION THROUGH FIELD SURVEY

Data Analysis Tools- Percentage analysis and Chi-square test has been performed to get the findings. With the help of Microsoft Excel all the data has been analysed.

Hypotheses-

Based on objectives and different variables, the following null hypothesis were formulated and tested for significance."

H1: Age of the respondent does not affect his/her performance towards of farmer in vegetable marketing.

H2: Gender of the respondent does not affect his/her performance towards of farmer in vegetable marketing.

H3: Education of the respondent does not affect his/her performance towards of farmer in vegetable marketing.

H4: Landholding for vegetable farming of the respondent does not affect his/her her performance towards of farmer in vegetable marketing.

H5: Total asset of the respondent does not affect his/her performance towards of farmer in vegetable marketing.

H6: Difference issues like quality and pricing of vegetables do not affect respondent's performance towards of farmer in vegetable marketing.

H7: Benefits aspects do not affect respondent's performance towards of farmer in vegetable marketing.

H8: Production of vegetables according to customer demand does not performance towards of farmer in vegetable marketing.

Analysis and Discussion-

Descriptive analysis and factor analysis were done to present the findings. Chi-square analysis was used to test the hypotheses.

Demographic Characteristics-

Age

SL No.	Categories	Percentage
1	Young Age (18-35 yrs)	25
2	Middle Age (36-50 yrs)	54
3	Old Age (above 50 yrs)	21

Gender

SL NO.	Categories	Percentage
1	MALE	73
2	FEMALE	27

Landholding for vegetable farming

SL No.	Categories	Percentage
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1	Small Farm Size(up to 2 hectare)	28
2	Medium Farm Size(up to 5 hectare)	55
3	Large Farm Size(Above 5 hectare)	17

Education

SL No.	Categories	Percentage
1	Illiterate	35
2	Up to primary	43
3	High school and above	22

Chi Square Test-

Chi square tests were run for 8 factors against the performance towards of farmer in vegetable marketing. Each of the respondents given a score based on his/her performance towards of farmer in vegetable marketing. Five-point Likert Scale has been used here (5- Completely agree, 4- Agree to a greater extend, 3- moderately agree, 2- little agree, 1- very little agree). In this way chi square tests were run for performance towards of farmer in vegetable marketing.

Chi-Square Test Result-

SL No	Variables	No of cases	Chi-square value	P value
1	Age	152	14.88	0.267
2	Gender	152	12.58	0.258
3	Education	152	16.65	0.040
4	Land Holding for Vegetable Farming	152	17.21	0.039
5	Total Asset	152	9.65	0.008
6	Quality and Price of vegetables	152	8.23	0.566
7	Benefits	152	9.65	0.008
8	Production	152	19.95	0.180

In the above table shows results of the test indicated that there was a significant relationship ($p < 0.05$) between respondents' educational background, landholding for vegetable farming, total asset, and benefits aspects performance towards of farmer in vegetable marketing. On the other hand, 4 variables i.e. age, gender, quality and price of vegetables, and production have no significant relationship ($p > 0.05$) with performance towards of the respondents. Thus, out of 8 variables 4 shows significant variance for the performance towards of farmer in vegetable marketing and 4 variables remain insignificant.

Null Hypotheses	Result level of probability (0.05)
H1: Age of the respondent does not affect his/her performance towards of farmer in vegetable marketing.	Accepted

H2: Gender of the respondent does not affect his/her performance towards of farmer in vegetable marketing.	Accepted
H3: Education of the respondent does not affect his/her performance towards of farmer in vegetable marketing.	Rejected
H4: Landholding for vegetable farming of the respondent does not affect his/her her performance towards of farmer in vegetable marketing.	Rejected
H5: Total asset of the respondent does not affect his/her performance towards of farmer in vegetable marketing	Rejected
H6: Difference issues like quality and pricing of vegetables do not affect respondent's performance towards of farmer in vegetable marketing.	Accepted
H7: Benefits aspects do not affect respondent's performance towards of farmer in vegetable marketing.	Rejected
H8: Production of vegetables according to customer demand does not performance towards of farmer in vegetable marketing.	Accepted

Findings-

The results of the present study revealed that most of the age and gender of person playing an important role in vegetable marketing. Male farmers are more efficient than female farmers in vegetable marketing. Most of the farmers belonged to middle age group. As regard the education, the farmers were found to have attained up to primary schooling. The investigation indicated that farmers possessed medium size farm. The findings of this study revealed positive perception of vegetable marketing with significant relationships between educational background, landholding for vegetable farming, total asset, and benefits. Other factors like age, gender, issues like quality and pricing of vegetables and production of vegetables have no explanatory significance in vegetable marketing.

CONCLUSION

It may be observed from the study that marketing of vegetables in Angul districts of odisha involves different marketing channels consisting of growers, assemblers, commission agent, wholesalers and retailers .The vegetable grower sell their product immediately after harvest due to the perishability of the product, lack of cold storage, poor economic condition of the farmers and other factors The findings of this study revealed positive perception of vegetable marketing with significant relationships educational background, landholding for vegetable farming, total asset, and benefits. This shows that the farmer of Angul district will have aware about performance towards in vegetable marketing. The concern, however, is that recent studies in the same geopolitical zone describe vegetable marketing. This gap between knowledge can be bridged by understanding the system and government provisions like provision of credit facilities, training on technicalities to farmers. There is a need to restructure primary co-operative marketing societies particularly from the point of view of betterment of economic standards of growers which solely depends upon remunerative farm production. The institutional approach to create adequate market access to the farmers can be best realized by strengthening co-operative societies. There has been greater emphasis on large centralized whole sale markets leading to the neglect of grass root market institutions and functionaries. In the case of local marketing

conditions, the producer share in consumers' rupees is comparable to the local vegetable marketing channels of Angul district of Odisha. The addition of the middleman in the Angul vegetable marketing channel leads to the reduction of the marketing efficiency of the channels. The concept of the vegetable marketing can be developed with a view of the benefit of both farmers as well as ultimate consumers, and it also plays an essential role in increasing farmers income, generate employment opportunities for the local peoples, and improve the livelihood of the farmers which leads to the development of Indian economy as a whole.

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TRADITIONS AND INNOVATIONS IN THE MODERN INTERIOR OF UZBEKISTAN

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ABSTRACT

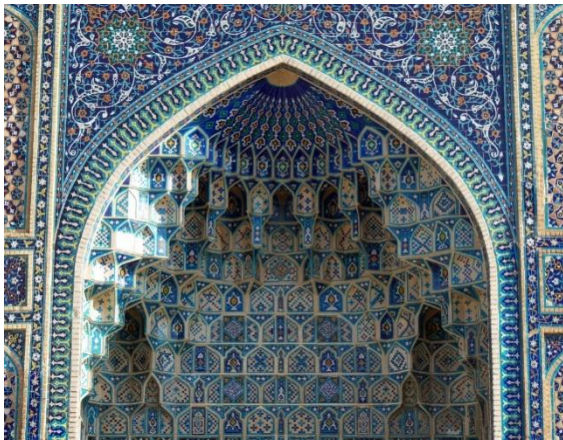
The article provides information about the architectural decor and traditional ornaments of Uzbekistan, including their significance for modern interiors. Also the illustrations depicting fragments of interiors are presented.

KEYWORDS: *Uzbekistan, architectural decor, interior design, ornaments, fabrics, ikat, abr, functionalism, comfort.*

INTRODUCTION

Uzbekistan is a country with a rich and ancient cultural heritage, where from ancient times various types of art developed over the centuries: architecture, wood carving, ceramics, pottery, carpet weaving, artistic textiles, and embroidery [8].

The decorative development of architectural monuments strikes the imagination with an endless variety of options, virtuosity of performance, ingenious solutions for the transition of ornamental ideas into architectural and constructive ones [2]. For many centuries, two main types of ornament have been used in decor: geometric (giri) and floral (islami) [7].



1-picture Gur - Emir (Samarkand)



2-picture Fragment of the Khiva column

A lot of work is being done in Uzbekistan to multiply national values, preserve them for future generations, develop and popularize traditional crafts that have a long history. This trend contributes to the process of creating ethnic style interior design, where it becomes possible to use and introduce ethnic motifs or traditional crafts into the architectural environment and, at the same time, organically combine and synthesize tradition and modernity.

In this regard, when the tasks of national cultural revival came to the fore, the designers of the republic are increasingly turning to the origins and traditions of the past. The process of development and flourishing of the culture of the nation is closely connected with the study of the historical and cultural heritage of the people. Interest in traditions is determined not only by considerations of a cognitive plan, it allows you to study the cultural heritage in order to identify the best creative principles with their further use in modern life. This, today, is one of the main problems facing modern designers.



3-picture Interiors: Museum of the History of Temurids. Tashkent. 1996, State Museum of Applied Arts of Uzbekistan, con. 19th century.

And she was constantly in the center of attention of architects, designers, artists, who in various socio-historical periods tried to comprehend it in their own way and find different approaches. Historical styles in the interior are still of interest to many people. In each country, a separate period of history has its own distinctive features. Choosing a national style in interior design, we create in our own apartment or house a small island of a strange, unusual world, which is so unlike everything we are used to.

Why are ethnic styles in the interior attractive? The fact is that people are fed up with the cold laconicism of modern trends in design, and the luxury of "palace" premises is also not to everyone's taste. Therefore, ethno styles in the interior are experiencing a surge in their popularity. Their brightness and dynamism bring a joyful holiday atmosphere into our daily life. The selection of the most successful geometric and floral motifs from millions of patterns that existed in the world has been going on for centuries. With the help of patterns, you can radically transform the interior, and the competent use of textures will make it more expressive and sensual.

The modern interior is rarely replete with a variety of ornaments and patterns. Variegated wallpaper with symmetrical patterns, oriental carpets with real knitting from a small pattern somehow imperceptibly go out of fashion, giving way to plain painted walls, decorative plaster and plastic panels. Perhaps such an ascetic finish, lack of ornaments, bright patterns and meet the requirements of modernity, but sometimes it gets boring. Some variety in a monochromatic finish will not interfere with any room. The main principle of these directions is that there should be few things, but they are all necessary. You can safely place accents with the help of bright "color spots", lighting effects, unexpected details. The result is a stylish, expressive, comfortable home.

Ornaments that are actively used in the decoration of modern interiors and pieces of furniture are not limited to simple stripes or squares. Many of them have not only an intricate shape, but also a rich history, while still remaining attractive in terms of design [16]. The ornament is not in vain compared by many with poetry - it is based on the same rhythm, orderliness and aesthetic appeal.

The significance of the ornament in the interior has long been felt by both designers and connoisseurs of the "live" atmosphere in the house - it saves any room from dullness, lifelessness and interior "silence". Ornaments are a very powerful tool in design, so they must be used carefully, as their unwise use can greatly harm your interior.

Traditional fabrics, being one of the ancient types of crafts in Uzbekistan, having undergone a number of changes, have survived to this day [8]. The traditions of obtaining abr fabrics (the word "abr" is translated as "cloud") have evolved over the centuries.



4-picture National ornaments

So, according to Makhkamova, "abr fabrics were known in the first centuries AD. e. and, widely produced until the twentieth century. in many cities and villages of Central Asia, turned out to be the most persistent, and we observe their intensive development in our days" [5]. Silk, made in Margilan, is one of the most famous along with khan-atlas and adras - national Uzbek fabrics. Artistic textiles are the oldest type of decorative and applied art in Uzbekistan. Its traditions, having undergone a number of changes, have survived to this day. Uzbek fabrics have a peculiar, unique pattern, consisting of iridescent colored stains (khan-atlas) or alternating colored stripes (bekasam).

Old Uzbek masters say that for the first time this pattern was made in imitation of floating clouds reflected in the water of the lake. The process of making such fabrics is very complicated.

Ikat is a pattern with a special technology of fabric dyeing and weaving, as a result of which a characteristic pattern with uneven edges is born. According to the coloring technology, it is a distant relative of batik. In Russia and sometimes in the West, ikats are considered an invention of Central Asia. But experts know that such an ornament was known in different parts of the world - in India and Indonesia, the Philippines and Bali, as well as in pre-Columbian America - in Mexico, Brazil and Bolivia.

Magical significance was attributed to its intricate design, and given the complexity of its manufacture, ikat has always been considered a sign of wealth and prestige.

Although the ikat technique is also used by other peoples, the situation is different here: the fabrics of the Uzbek masters turn out to be especially bright. According to G.A. Pugachenkov,

“love for intense color, for sonorous color, for pure, joyful colors lies in the blood of the peoples of the East” [10]. Therefore, fabrics made using this technique amaze with their bright colors and magnificent patterns, which include floral, geometric, zoomorphic and cosmological ornaments and represent a high level of stylization of ornamental motifs. As Fakhretdinova noted, the interpretation of the motifs of abr fabrics was extremely arbitrary, and the tones of colors were deep and soft, the pattern as a whole was picturesque and was perceived as a cheerful play of colored and sun spots [18].

Since the end of the 20th century, fashion designers with world-famous names have paid close attention to ikat: Gucci, Oscar de la Renta, Dries van Noten. At that moment, the ornament from the category of national passed into the elite and became a fashion trend for clothing and interior. By the way, ikat does not necessarily cause direct associations with the exotic. Modern drawings, stylized as ikat, are very worthily combined with both classic and laconic furniture. Such an ornament already looks like blurry spots or rhombuses, it is more restrained and, as a rule, includes 2 colors - main + light neutral.

The ikat ornament is not only the upholstery of upholstered furniture, carpets and curtains, it can be found anywhere: on the upholstery of sofas, armchairs and chairs, on decorative pillows, on pastel linen, on lampshades, panels, tablecloths, dishes, decorate a serving tray or make a spectacular American-style dresser cover, insert it into a small frame like a picture or create a large-scale panel - such a trifle, but what an effect![8]

The artistic design of fabrics occupies a special place among the remarkable traditions of Uzbek art, which originated in ancient times and today occupies one of the leading places in the modern national art of Uzbekistan and is gaining wide popularity abroad.

To create the interior of a modern home: it is important to correctly and functionally plan the space. No matter how beautiful the interior is, the space must be functional? Then, be sure - the "nodes" and details must be worked out in detail, because it is at the joints that the level of professionalism of the designer performing the interior is visible. And it is desirable to use high-quality, preferably natural material.



5-pictur Alexandra Rakhimova – designer Cafe interior

Ethnics in interiors should be relevant and appropriate. All kinds of creativity are the spirit of the times. At certain intervals, the style is the same in all directions. “Therefore, it doesn’t matter what a person does. Everything that will be implemented is in tune with the spirit of this time. A person should be comfortable in his space, which means that the interior from a simple environment becomes a “place of power”, a resource space for replenishing energy” [1].

Traditional ornaments and décor are also often featured in trendy restaurants and youth clubs. In the exterior and interior decoration of restaurants, materials and elements typical of the cultural heritage of Uzbekistan are also often used. These are ganch carving, majolica mosaic, paintings on walls and ceilings, wood carving, decorative carved wooden columns-ustun, painting on natural leather, silk and suzani, graphic national ornaments from different regions of Uzbekistan, folklore antiques and household items, mosaic on glass, forging and along with - all this gives a unique flavor to the interior.

For many centuries, crafts have been developing in Uzbekistan, thus leaving priceless and unique products of unknown masters as a legacy, which amaze with the richness of artistic imagination and the irresistibility and perfection of forms. Respect for the heritage and cultural values of Uzbekistan, the revival of the traditions of handicraft production, is a natural process, due to the desire to preserve the national culture.

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SOME INFORMATION AND CONSIDERATIONS ON THE MAP OF DEVELOPMENT OF THE EARTHQUAKE OF BUKHARA BY RUSSIAN SCIENTISTS IN THE VIII-XIV CENTURIES

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ABSTRACT

The article focuses on the topographic condition of Bukhara in the VIII-XIV centuries, and later on the various views and schematic maps of the city as a result of scientific and geographical research conducted by Arab and Russian scientists in the XIX-XX centuries.

KEYWORDS: "Scheme", "Map", Rabot, Shahristan., gate, Mongols.

INTRODUCTION

Scientists, historians and archeologists have not been able to study Bukhara for a long time. Sources recorded by Narshahi did not provide complete information about the area due to the lack of topography.

In 1901, before the Mongol invasion, the Russian scientist VV Bartolz could not find any monuments in the area.

It was only after the fall of the emirate that he was able to enter the city of Bukhara, and immediately managed to determine the approximate boundaries of the city. An "expedition" in 1940 made a significant contribution to the study of Bukhara.

It turned out that the ancient name of Bukhara was "Numidjikas".

.... Древнее название Бухары, сообщаемое рядом авторов, – Нумиджет. У ат – Табари и аль – Балазури Бухарой чаще всего называется оазис в целом. Например: «Он [Кутейба] вошел в Бухару и остановился в Нижней Харкане южнее Варданы» (Табари, II, с. 1198). У ал – Балазури дважды упоминается «медина Бухары», но не как город Бухара, а как столица Бухары (с. 410, 411); в том же смысле говорит ал – Балазур об Ахсикете: - «А это ее (Ферганы) древняя столица»¹

By the 8th century, Bukhara was smaller than Samarkand in terms of land area. The participant of the expedition va Shishkin managed to determine the western border of the county.

O.I. Sukhareva defined the vague eastern border of Shahristan.

As a result of all the research at that time, the general, exact size and scheme of the city of Bukhara were determined. The schematic view of the city in the VIII century was an area of 575-600 m with an area of about 30-35 hectares. There was one gate in the middle of each of the four sides. The streets, which ran perpendicular to each other, divided the Shahristan into four sections.

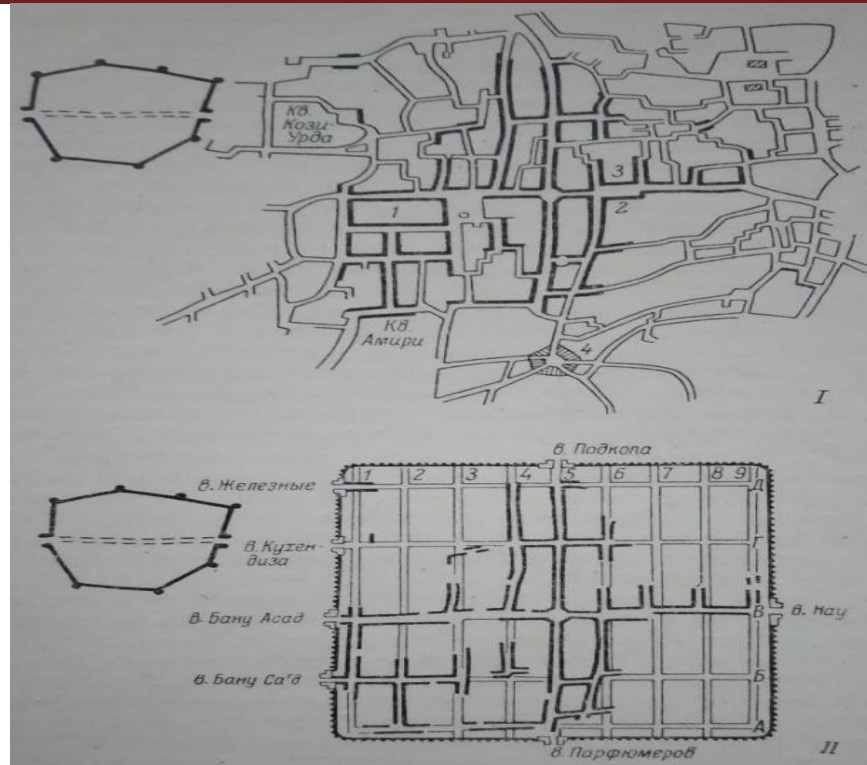


Figure 1 Reconstructed 1st date of Bukhara city (plan)

According to Narshahi, the city of Bukhara dates back to the 8th century, when its gates, the southern gate, followed the clockwise direction of the city and described the condition of the part of the city closest to each gate.

...Наршахи сначала вводит читателя в южные ворота: «Ближайшая улица слева, как войдешь в шахристан, называется улицей Риндов, а за ней была церковь христиан, и есть там мечеть, которая называется „мечеть Бану Ханзала"» (Наршахи, III, с. 52; пер., с. 70). Первая улица от Ворот Парфюмеров, с которых начинается Наршахи, - западная половина нашей улицы А, проходящей очень близко от городской стены; такое место считалось неудобным для проживания, поэтому около стены жили люди победнее.²

The rest of Shahrستان is dedicated to Abu Hafsa, one of the Companions. From this we know that in the north-eastern part of the city there is a mosque of the Quraysh.

The city of Bukhara, the capital of the Samanid dynasty, grew and developed. By the end of the 10th century, Bukhara had become one of the largest cities in Central Asia. The description of this golden age corresponds to al-Istahri ibn Hawkal and al-Muqaddas. According to Ibn Hawkal, the name of Bukhara was Numujikas.

...Бухары, то она называется Нумиджас. Это город, расположенный на равнине; постройки его из дерева, примыкающие друг к другу». Далее упоминается внешняя стена Бухары, поперечник которой примерно фарсах на фарсах.⁴⁸ «Внутри этой стены у нее [Бухары] есть медина, окруженная крепкой стеной, и есть у нее кухендиз,⁴⁹ примыкающий снаружи к медине... а в нем - другое укрепление [каль roziqberdiyevmurtazo@gmail.com

a].50 Местопребывание правителей Хорасана из рода Самана - в этом кухендизе. В ней [Бухаре] есть рабад. Соборная же мечеть находится в медине у Ворот Кухендиза. Ее тюрьма в кал'а,51 а ее базары в рабаде. И нет в Хорасане и Мавераннахре города, более плотно застроенного, чем Бухара, и более населенного, чем она.³

After crossing the robot outside the city, the Sugd River flows through the cattle market (this is the end of the Sugd River), the declining part of which flows into the Samdjan Reservoir. As for Shahristan, it has seven gates, according to Nartaki's research: (clockwise)

- 1) “Perfume-powder shop” (or “Market” gate),
- 2) “Gebrov (blue) gate,
- 3) “The Gate of Haqq” (“Know”), but there were seven gates.

AA Sukhareva believes that the missing gate is between the gates of Kokandiz and Khaqrag. L.I. Rempel considers them to be between the gates of Atir-upa and Banu Sa'd.

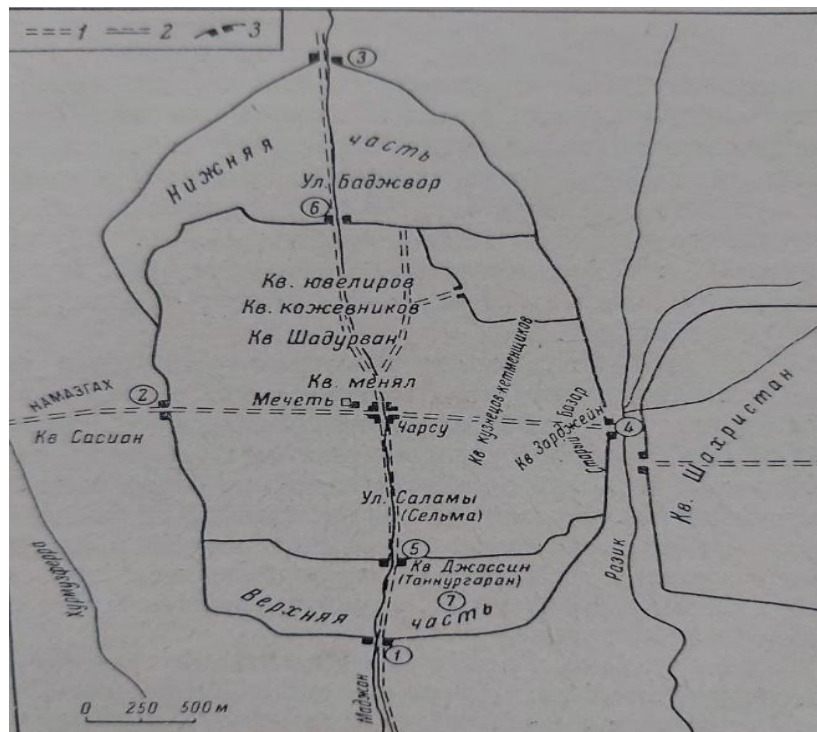


Figure 2 Mayor XI – XII centuries. According to Samani and Tartusians

The results of VA Shishkin's research turned out to be completely different. According to him, the wall of the Samanid Bukhara on the border with the robot, (according to V.V. Bartol'd) was built in 849-850. The boundaries of the city are calculated according to the location of the tombs outside it. That is, at that time, the tombs were definitely outside the city.

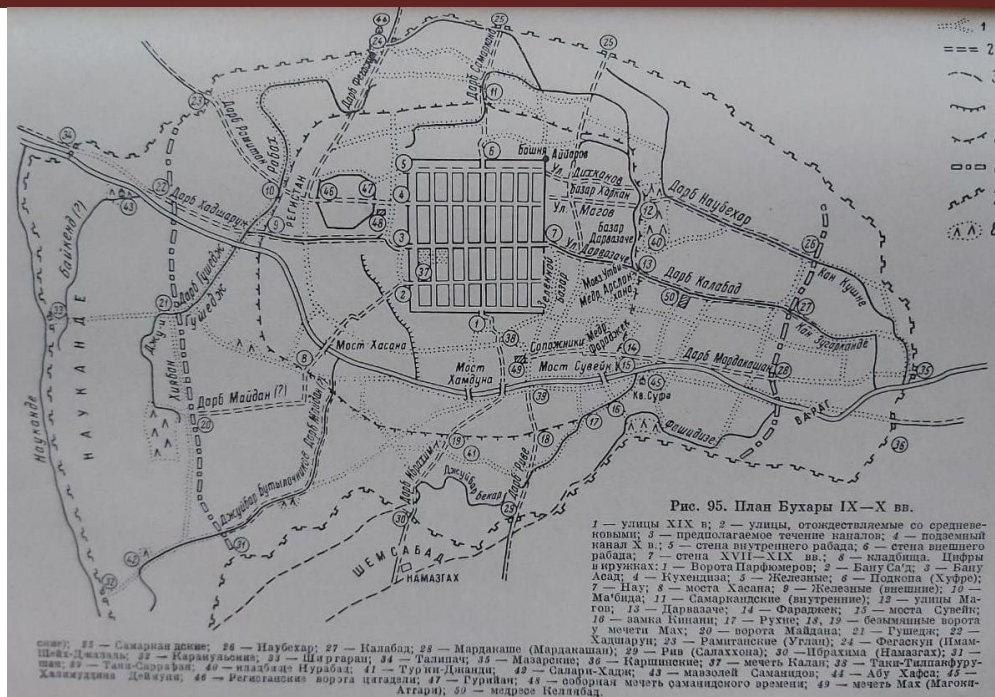


Figure 3 History of Bukhara IX - X centuries

The first monumental constructions after the Samanid period began during the reign of Arislan Khan (1102-1130). During his time, the inner walls of the rabot were overhauled, a large new mosque was built in Shahrستان, with the famous minaret. Two towers were built in his name and two baths were also built.

After the fall of the Samanid dynasty, the area did not expand.

So, if we look at the unique history of Bukhara, we can see that the events that took place in it have developed over the centuries and become a city rich in beautiful, unique historical and modern buildings. We feel we are lying.

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LIGHT AUTOMOBILE STEEL WHEEL MANUFACTURING TECHNOLOGY

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ABSTRACT

It is known that welding is an important technological process in the manufacture of automotive parts, and many types of welding are used. Contact triangular welding is the most effective, and in some cases the only, method for the production of steel wheels for cars. Because this type of welding is fast, without any filling electrodes, shielding gases, does not require special training, suitable for serial production. In the line of preparation of air conditioning based on modern technology, from 0.01% to 0.05% of air conditioning can be defective. The quality of the material does not meet the requirements and the welding technology is not sufficiently improved, which leads to an increase in the level of defects up to 20%. This leads to excessive material consumption, an increase in the cost of production, and a decrease in economic efficiency.

KEYWORDS: *The Wheel Is Made Of Pneumatic Tires, The Connecting Part Is Disc And The Housing.*

INTRODUCTION

Objective:

To study the impact of product defects on the welding of steel wheels by three-point welding and to develop recommendations for their elimination.

The wheel is one of the components of the carriageway. The function of the wheel is to connect the car to the road and ensure its movement, while at the same time slightly softening the impulses transmitted from the roughness of the road to the body, and the load from the body in the vertical direction to the road. [1]

The wheel consists of a pneumatic tire, a connecting part of a disc and housing. It should be noted that according to the catalog of spare parts, the connecting part and the joint are called wheels. Stamped - a ring-shaped part made of tires; the disc is the part that acts as a base for the trunk and connects to the car hood. The wheel is necessary to perform the function of the support of the car as a result of the placement of the tires and their joint fastening to the wheel. [2]

Depending on whether the wheel is attached to the axle shaft, it can be disc or disc-free. Trucks use a diskless type of wheel, which is fixed to the hub. Cars use disc wheels. [3]

The following requirements apply to car wheels:

- The selected wheel on the tire must be fully compatible with its structure, stiffness, size;
- Well balanced, the value of the imbalance should be small;
- The wheel must be easy to put on and take off during operation;
- It is desirable that the mass of the wheel is sufficiently small and the moment of inertia is small;
- The wheel should fit the tires with and without tires;
- When using tires without a camera, even when the pressure is low, their joints can not move from each other.

Car wheels are often made integral and differ in design, tire size, material and production technology. There are three types of car wheels according to the technology of production: stamped steel wheels, cast wheels and volumetric stamped wheels. [4]

Stamped steel wheels are the most common and the world's largest in terms of production (Figure 1). Its components - a disk and a sheet of steel sheet are stamped, rolled and welded together. This type of car is produced on the assembly line equipped with wheels. Due to the rapid corrosion of steel, steel wheels are covered with a protective layer (primer, enamel or varnish). The advantage of these wheels is their low cost and the fact that they are made of sufficient plastic material, so that the plastic does not break under impact. This not only makes it completely useless, but also allows it to be easily restored. [5,6]



Figure 1 Stamped steel wheels

Wheels made of light alloys. Many manufacturers have been researching alloys and materials for making wheels. By 1960, the first aluminum alloy wheels were produced. Later, magnesium alloys began to be used. Wheels made of light alloys are divided into two types depending on the type of production: burnt and hammered wheels. [7,8]

Cast Alloy Wheels (Step 2). These wheels are made of liquid alloy using a mold. They have a big advantage over steel wheels. Aluminum wheels are about 25% lighter than steel wheels. The lighter the wheel, the smoother the movement. The reduction of the moment of inertia improved the acceleration and braking properties of the car. In addition, the wear resistance of transmission parts is increased and fuel consumption is significantly reduced. The preparation accuracy of cast and hammered discs is High, so the balancing accuracy is High. The technology of making cast discs can give them any shape. This is why cast discs look better than stamped ones. The disadvantage of cast discs is that when they fall into potholes, they do not bend like stamped discs, but crack. This means that such a drive cannot be recovered. Cast light alloy wheels are installed in expensive cars. [9,10]



Figure 2 Cast aluminum wheels

Hammered wheels (Fig. 3). They are made of aluminum and magnesium alloys by hot stamping. It is then mechanically and thermally treated. This ensures the strength, rigidity and high corrosion resistance of the structure. Unlike cast wheels, hammered wheels do not require additional refilling. The impact wheel does not crack, but is crushed. At first glance, it looks like a steel wheel, but is twice as light. Another advantage of this advantage is the lack of hammered wheels. The hammer wheels, which are easily driven from the depths, transfer all the impact energy to the suspension, which has a negative effect on the condition of the car. The second disadvantage of hammered wheels is the limited design technology. The hammered wheels are popular among motorists and tuning enthusiasts. Such wheels are widely used in sports and charged cars. [11,12]



Figure 3 Hammered wheels

Marking of wheels (Fig. 4). This information will help us understand how to mark the wheels and what the basic parameters of the wheels are. Whether it is light alloy (cast and hammered) or steel (stamped) wheels, all wheel parameters have a standard setting. [13,14]



Figure 4 Basic dimensions of the wheel

For example: 6.5Jx15 H2 5x100 ET45 d54.1 15 - wheel diameter

(D) In inches; 6.5 - wheel width (B); J and H2 are the characters that professionals need. J - Provides information about the edges of the settlements. H2 is also the code of the structure, which gives information about the seat of the wheel. Hump (English hump (height, dumbness)) is a ring on the tire designed for a tire without a camera (Fig. 5). The main function of the hump is to securely fasten the tires on turns, ensuring that the tightness of the wheels is not compromised. [15,16] If there is only one hump in the designation of many wheels, the letter N is written one on the outside. However, most wheel models have hump along the inner edge of the wheel, and the H2 index indicates this. Two-wheel drive increases the reliability of tire installation, but causes problems during installation. For this reason, on many wheels, the height of the second hammock is made with a hammer. Such humps are called flat humps and are denoted by the letter X. [17,18].

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SCRUTINIZING MATERIALS IN ORGANIZING CLASS FOR HIGH SCHOOL STUDENTS

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ABSTRACT

This article covers with information on analysis materials above designating effective classes for high school students. Sifting valuable information among the data storage and implementing into classes are the part of research aims. It will be presented that some steps to take into account in picking valid data, especially high school students, which appropriate their level.

KEYWORDS: *Judgment, Material, Curriculum, Analyze, Textbook.*

INTRODUCTION

One of the most essential professional decisions that educators make is deciding which curricular materials to employ. Textbook adoption committees make recommendations that will impact instruction for years to come, and the everyday decisions instructors make about which teaching units or chapters to use and how to use them heavily affect what and how students will be expected to learn. [1]

Such crucial judgments necessitate the use of a solid and dependable approach for assessing the quality of instructional materials. Even a thorough examination of the subjects covered by a textbook or a teaching unit may not be enough to establish if the information will truly assist students in learning that knowledge. What is required is a reasonable procedure for reviewing curricular materials that delves under the surface by concentrating intently on topic suitability and instructional design usefulness. [2,3]

MAIN PART

In the process of designating effective classes, mainly for high school students, many researchers have investigated a great many ways and approaches so that supporting the class much more well-organized. One of them, received as a standard way to sift out valuable materials for teaching, is presented below with some more justifications. [4,5]

Until recently, there was nothing to compare the appropriateness of material and the usefulness of instructional design. As a result of the standards-based reform movement in education, these judgments may now be made with more certainty.

- Identify specific learning goals to serve as the intellectual basis for the analysis.

This is done before diving into any curricular materials. National standards or benchmark papers, such as those described above, as well as state or local standards and curricular frameworks, or sources similar to them, can be used to identify relevant goals. To be meaningful, the goals must

be specific in identifying the information or abilities that students are expected to have. If the number of goals is considerable, a representative sample of them should be chosen for study. [6,7]

- Make a preliminary inspection of the curriculum materials to see whether they are likely to address the targeted learning goals.

If it appears that there is little or no correlation, the materials might be dismissed without further investigation. If the prognosis improves, go on to a content analysis.

- Analyze the curriculum materials for alignment between content and the selected learning goals.

The aim here is to establish whether the substance in the material meets certain learning goals by presenting evidence from the resources, not only whether the topic titles are comparable. Alignment is never problematic at the topic level since most topic heredity, weather, magnetism, and so on lack specificity, making them easy to match. If the findings of this analysis are favorable, reviewers can proceed to the next phase. [8,9]

- Analyze the curriculum materials for alignment between instruction and the selected learning goals.

This entails estimating the extent to which the materials (including their accompanying teacher's guides) reflect what is generally known about student learning and effective teaching, as well as, more importantly, the extent to which they support student learning of the specific knowledge and skills for which a content match has been found. Evidence from the materials must be demonstrated once more. [10,11]

- Summarize the relationship between the curriculum materials being evaluated and the selected learning goals.

The summary can take the form of a profile of the selected objectives in terms of the content and instruction criteria, or it can take the form of a profile of the criteria in terms of the selected goals. A description of strengths and shortcomings should be presented in any scenario. With this information, reviewers may make more informed adoption judgments and offer methods to improve the items under consideration. [12,13]

CONCLUSION

Teachers carefully analyze the resources on the shorter list to discover and note locations where each specified benchmark appears to be targeted (e.g., particular readings, experiments, discussion questions). If many sightings for some or all of the sample benchmarks in the material are discovered, these sightings will be examined more closely in later rounds of the research. If, on the other hand, sightings for a sufficient number of the sample benchmarks cannot be discovered, the item is removed from the list. [14]

Analysis is a more thorough assessment of the relationship between the subject material and the chosen learning objectives, and it entails paying close attention to both ends of the match: the particular meaning of the benchmark on one end and the precise aim of the content on the other.

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INTRODUCTION OF INNOVATIVE MANAGEMENT IN THE SYSTEM OF PASSENGER TRANSPORTATION AND AUTOMATED SYSTEM OF PASSENGER TRANSPORTATION IN PASSENGER TRANSPORTATION

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ABSTRACT

The transport system is an important part of the country's production infrastructure, and its development, increasing the performance of the road transport system is of great importance today. Although the city's passenger transport system is undergoing regular changes, it does not fully meet the transport needs of passengers. Therefore, the issue of regulating, optimizing and studying the flow of passengers in all existing routes in the city remains relevant today.

KEYWORDS: *Infrastructure, Passenger Transport, Innovation Management Innovation, Innovator.*

INTRODUCTION

The strategy of actions on five priority directions of development of the Republic of Uzbekistan, adopted in our country on the direct initiative and under the leadership of President Shavkat Mirziyoyev, has started a new stage of development. The practical results, signs and features of this process are clearly visible today in all spheres of our lives, and most importantly, in the consciousness, aspirations and actions of our people. [1]

In particular, the fourth point of the Action Strategy, "Priorities for the development of the social sphere" is to radically improve transport services to the population, increase passenger safety and reduce emissions, purchase new buses, build and reconstruct bus stations and bus stations. Continuation of construction and reconstruction of road infrastructure, in particular, the development of regional highways, capital and current repairs of inter-farm rural roads, streets of settlements. [2]

We all know that transport is not only an active part of the material and technical base of the future great state of Uzbekistan, but also plays an important role in creating this base, continuing the production process of the country's economy and bringing it to consumption. is a system that integrates industry, agriculture and transport. [3]

Today, transport as a component of the country's productive forces has become a huge dynamic system that implements a wide range of scientific and technical achievements. In improving this system, the following:

- The peculiarities of transport in relation to other sectors of the economy, its role and functions in the economy, as well as the basic principles and rules of transport activities; [4]
- Specific technical and technical-operational characteristics of some types of transport, achievements in the construction of roads, transport, scientific and technical problems specific to each type of transport and need to be addressed in the future; [5]
- Interaction of different modes of transport and problems of their joint development, ie comprehensive consideration of practical issues of use of different modes of transport and increase of their efficiency, including purposeful distribution of transport between modes of transport and correct definition of development of separate types of transport the study of problems is of particular importance. [6]

One of the important factors that determines the good performance of transport is its regularity of passengers and freight. The importance of transport in transporting the population from one place to another is growing from year to year. This work is mainly carried out using passenger transport. [7]

The main task of passenger transport is the timely delivery of workers to their places of work and after work, the transportation of workers and employees between enterprises and organizations in the course of work. In addition, passenger transport also plays an important role in meeting the personal needs of the population that are not directly related to production. Passenger transport also serves to expand the interaction of people, exchange experiences, and raise their cultural level. [8]

In the passenger transport system, as in other modes of transport, to fully meet the needs of the population in all types of services, reduce transportation times, increase the speed of passenger traffic, maintain regularity throughout the year, day and night, weather whims and various other reasons. to create as much convenience as possible, to ensure traffic safety, to protect the environment and other requirements. [9]

- ✓ Comprehensive implementation of these requirements is more technically and economically complex. Therefore, one of the ways to solve the problems in the system of passenger transport is to use innovative management in the improvement of the transport network, ie new opportunities in the fundamental, technical and technological, economic, organizational and managerial work in all practical areas. In order to manage the innovative activities of transport enterprises, it is necessary to create a department of "innovators" in enterprises and effectively use the potential of innovative personnel. Requirements for innovative personnel; [10]
- ✓ Good knowledge of the company's prospects and current problems;
- ✓ Have certain creative abilities;
- ✓ Identification and use of internal capacity of enterprises;
- ✓ Increase their engineering potential;
- ✓ Pay special attention to technological rearmament;

- ✓ Shaping the spirit of constant change;
 - ✓ A sense of responsibility for promising results and time and resources;
- creation and development of creative environment in the enterprise.

So, the most important factor in ensuring the success of innovation activities in the enterprise is the human factor. Innovative management of road transport requires the creation of innovative creative teams that seek and disseminate innovations. [11]

The main tasks of studying the flow of passengers:

- ✚ Determination of the optimal number, type and length of traffic on the routes;
- ✚ Determining the optimal interval time between each vehicle;
- ✚ Reduction of parallelism of passenger transport routes;

increase revenue, reduce the number of unprofitable routes by reducing costs.

At the same time, the introduction of an automated fare payment system in urban passenger transport will allow optimizing the number of vehicles and routes by obtaining accurate information about the flow of passengers on the routes at any time. [12]

Introduction of an automated fare payment system in passenger transport.

Currently, the Toshshahartranshizmat Association is considering the introduction of an automated fare payment system (ATT) through the rapid payment of fares in urban passenger transport, the introduction of electronic tickets based on long-term contactless smart cards (KSK). The introduction of YTAT allows you to make cashless payments on various vehicles (subway, bus, and tram) using special plastic cards, turnstiles and validators. [13]

Advantages Of The Introduction Of An Automated Fare Payment System In Urban Passenger Transport:

- ✓ - Use of transport services and payment of travel by cashless special plastic cards;
 - ✓ -Electronic control of traffic on city routes;
 - ✓ Increase revenue by 5-10% due to the full collection of tolls and the growing interest of the population in the use of public transport;
 - ✓ -Optimization of the number of vehicles and routes on the routes by obtaining accurate information about the flow of passengers;
 - ✓ -Automation of visual control of passengers with the right of free travel and other benefits;
 - ✓ - Prompt collection of information on ticket sales and passenger flow;
- Creation of conditions for the introduction of various tariffs for urban passenger transport. [14]

Problematic Aspects Of The Introduction Of An Automated Fare Payment System In Passenger Transport

- 1.The installation of turnstiles on land vehicles will increase the time passengers have to get on and off buses and trams and can cause various inconveniences. (Situation in Moscow).
- 2.The introduction of a system without turnstiles requires the involvement of conductors in each vehicle, which in turn increases production costs. [15]

Toshshahartranshizmat has held talks with several foreign and local companies on the introduction of this system in urban passenger transport. These include South Korea's EB

Corporation and LG CNS, Turkey's Kentkart, the United States' Sercotec Select LLC, local Uzbek companies - Multisoft Solution, Vades group, NPO Akadempribor, Ukraine's LOT. [16]

As a result of studying the experience of foreign countries, based on negotiations with foreign companies and the proposals received from them, it is planned to introduce an automated fare payment system in two stages in Tashkent. [17]

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DIDACTIC PARAMETERS IN THE DEVELOPMENT OF THE STUDENTS' THINKING COMPETENCE

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ABSTRACT

This article describes the essential role and value of textbooks in the development of independent-thinking competence of students in the process of teaching the social sciences and humanities in a secondary schools, which are one of the major factors determining the content of education. The pedagogical and psychological principles outlined in the textbooks are highlighted as a crucial element in enhancing the quality and effectiveness of teaching the social sciences and humanities. It is also noted, that in achieving the desired result, when establishing the content of the social sciences and the humanities, the existing didactic parameters should be taken into account. Recommendations are given for forming the content of a school textbook focused on the development of students' independent thinking.

KEYWORDS: *Competence Of Independent Thinking, Textbook, Manual, Advanced Pedagogical Technologies, Social Sciences And Humanities, Educational Norms, Educational Literature, Pedagogical Requirements, Pedagogical Principles.*

INTRODUCTION

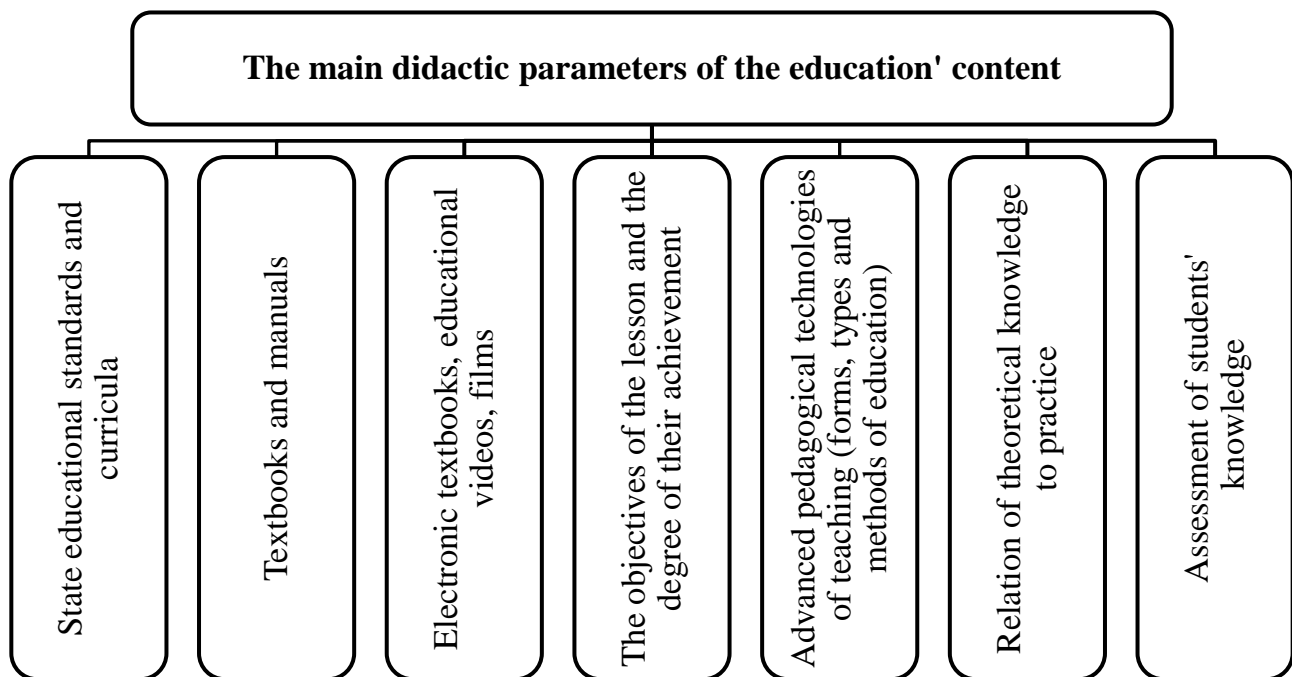
The development of students' independent thinking competencies plays a key role in improving the quality and efficiency of the education system. The content and means of forming a student's independent mental competence determine the essence of the educational process.

It is necessary to determine the content of the social sciences and humanities and take into account the existing didactic parameters in achieving the final result. The social sciences and humanities, in addition to working with clearly justified events and figures, also determine independent thinking and participation of students in the process based on creative activity. After all, education as a separate activity accelerates the development of the individual, being formed on the basis of biological, psychological, social patterns[4, 13-p.].

Another aspect of the modernization of education is a new approach to the content of education, more precisely, the improvement of the didactic content and means of general secondary education. This innovation, covering all aspects of pedagogical activity, is reflected in the organizational forms and methods of teaching, in the field of knowledge, in new qualities and criteria for determining the effectiveness of a teacher[5, 167-p.].

The main didactic parameters of the content of general secondary education in the development of the student's independent thinking competence are as follows [6, 51-p.]:

- State educational standards and curricula;
- Textbooks and manuals;
- Electronic textbooks, educational films;
- The objectives of the lesson and the level of their achievement;
- Advanced pedagogical teaching technologies (forms, types and methods of teaching);
- Relevance of theoretical knowledge for practice;
- Assessment of students' knowledge.



Pic.1. The main didactic parameters of the content of education in the development of the competence of independent thinking of a student

The foundations of the above educational content will be improved based on the needs of educational institutions, students, epoch, society. This is a key factor in improving the quality and effectiveness of teaching in the social sciences and humanities. Teaching, learning, knowledge, skills, competencies in the educational process, as well as the purpose, content, organization of the lesson, types, forms, methods, teaching aids, didactics and purpose, content, teaching methods, functions, parameters determined by results [16].

State Educational Standards and curricula are the main goals of pedagogical activity for the development of each individual as a unique phenomenon and its capabilities, needs and aspirations. The State Educational Standards, which are the legal basis for the quality of education, state that “The State Educational Standard of compulsory secondary education in its structure and content reflects the balance of interests and means of the state, region, school, and most importantly, the personality, aspirations, abilities and interests of the student.”[1].

This means that it was not the individual who turned to education, but education turned to the individual. Indeed, in any pedagogical activity, each student must be in the attention of the teacher. The fact that human abilities and interests are inherited has long been considered in education. This can be seen in the national proverbs of the ancestors, such as “The future of the child is known from the very beginning his cognitive inclinations/actions/behavior”, “Choose the father's profession”.

The effectiveness of the teacher's work is assessed not only by the quantity and quality of scientific information accumulated in the student's memory, but also by the student's skills and abilities, the ability to apply them in practice. Each teacher should have a deep understanding of the didactic nature and responsibility of such an innovation and apply it in pedagogical activity. These changes should also be imagined by parents, since a parent, as a customer, can demand from the school what the child has learned when he finishes a certain stage of the school [9, 105-6.].

In this regard, within the framework of school-neighbourhood and family cooperation, a system of measures has been developed aimed at improving the pedagogical literacy of parents under the guidance of the school council.

Student-centered learning raises the uniqueness of the student (subject) to a new level due to a unique approach to its characteristics (such as observation, speed of perception, analysis and synthesis, memory stability).

An integral part of pedagogical activity should be the teacher's deep and comprehensive knowledge of the subject, as well as experience that directly affects the cognitive activity of each student: from his health to appearance, morality to power potential and even unstable mood swings.

Also, since the teacher starts working with a new group of students each year, he or she spends a certain amount of time “discovering” each student. Therefore, the description of the students by the class teacher will also help the teacher of natural sciences, and the teacher of natural sciences should communicate with the class teacher and participate with him in parent-teacher meetings.

In particular, a graduate of general secondary education in one of the social sciences and humanities in geography, the student's geographical readiness: to be able to say (show); determine (measure); be able to describe; be able to explain; prognostic (5 different) criteria. Therefore, the state educational standard clearly states that the student must be armed with a perfect system of knowledge, as well as a large number of pedagogical skills and abilities, simple research methods related to scientific activity [1, 214-p.].

Reading a geographical map (determining the amount of solar radiation in a particular area, determining the lines of time, continents and oceans, seas, bays, straits, currents) without determining the geological age of the earth, determining the magnetic poles of the earth does not include the necessary training skills and competencies required by the State Educational Standard.

These areas are mentioned in the State Educational Standards and curricula defined for all social and human sciences. In particular, the textbook on economic and social geography of Uzbekistan provides tasks for independent research in each subject: For example, many tasks are given such as “Find out what industry the enterprises around your school specialize in and explain why?”, “Draw a diagram of the industrial relations of any enterprise in your area”, “Study and classify

the demographic process in your area or village”, which in turn leads to the expansion of the student's outlook.

With this in mind, alternative interrogative tasks on the object are proposed, similar in nature, but differing in volume and territorial location. For when this diversity is combined with differences in the abilities of the students, the performer (student) enters the task with great pleasure and confidence. Strives for the next task, welcomes the task. Laziness and irresponsibility can be aggravated by the fact that the task does not correspond to the interests and abilities of the student[9, 47-p.].

Educational standards: the equivalent of mastering the curriculum, i.e. the level at which students must master the content of education is the knowledge, skills and competencies that students must acquire at a certain stage.

The number of hours and knowledge allotted in the curriculum for the purposes of each subject is a state document that reflects the ideological and political orientation of its existing system. The program determines the scope of scientific knowledge, skills and competencies that must be transferred to students. At the same time, there are requirements that the curriculum itself must meet. In particular, the program should be based on a clear idea, knowing the State Educational Standard as a priority, the main principle and not in the least deviating from the criteria and norms.

The curriculum takes into account the historical lessons of science: in particular, new discoveries in the world of science, scientific principles. Educational documentation is based on a reformed education plan approved by the state.

State educational standards and curricula, which are one of the normative tools for modernizing the content of general secondary education, form the didactic basis for the content of education. The continuity and continuity of the content of the social sciences and humanities, as well as the quality of teaching, are based on these tools and will be developed further.

Textbooks are one of the main factors determining the content of education. Ensuring that textbooks meet the requirements of the time and world standards has become an everyday task and obligation. Therefore, the National Personnel Training Program of the Republic of Uzbekistan, which radically reformed the country's education system, entrusted general secondary education workers, especially pedagogical specialists, with the complex and urgent task of creating new (second) generation textbooks. This, in turn, gave rise to the need for a "template" that summarizes the scientific and pedagogical potential, scientific and pedagogical aspects, directing the possibilities of publications and printing to a single goal. This template has identified key aspects of world-class textbooks that guarantee the effectiveness of education in a market economy[8, 9].

It is known that the textbook occupies a leading place in education. Therefore, before discussing the textbook, it is necessary to define the concept of "textbook". Many foreign scientists and teachers believe that a textbook is an information model of the educational process in the hands of a student, more precisely, a textbook is an automated tool for managing the educational process. Some interpret the textbook as a summary (sample) of a particular subject, and even as “the foundation of science” [7, 69-p.].

At the same time, any books, films, audio, video tools and etc., combining different information, are not without the quality of textbooks. But in our opinion, these cannot be literally textbooks,

that is, “management tools that guide the educational process”. To do this, they must undergo didactic processing based on the theory of psychology and pedagogy. Through perfect elaboration and extensive practical testing, each textbook becomes a “national treasure” [11].

In recent years, in accordance with the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan “About approval of the State Educational Standards for secondary and specialized, vocational education”, educational standards and curricula have been improved in order to ensure the implementation of this Resolution. Therefore, although the form of textbooks in schools, including the cover, edition, illustration, form and set of letters, have not changed significantly, the content of the textbook, but its role in the educational process, has changed significantly. For many years, textbooks have served as a source of knowledge, a set of exercises, and instilling socio-cultural values. Now these tasks include the task of developing in students the skills of educational activities, independent thinking, familiarization with various teaching methods and the ability to apply knowledge in practice.

Consequently, it is more correct to say that a modern school textbook is a multi-volume book based on a separate program, adapted to the age and other characteristics of the student, aimed at fulfilling the state educational standard in a particular subject.

Many scientists who have studied the functional task of the textbook believe that the textbook is primarily an important means of expressing the content of education and represents the average level of the content of education. Therefore, in the educational process, the textbook needs various didactic aids that provide additional information to different groups of students, and the textbook occupies a central place in the complex of didactic aids.

Another function of the textbook is to be a tool for identifying the abilities and capabilities of each student. The content of the textbook should be watered from beginning to end with enlightening ideas and educate the student in the spirit of national values. The above functions of textbooks are of conceptual importance and must be observed in all academic disciplines. Considering the importance of textbooks in the development of independent thinking skills of students, it is necessary to improve each textbook of a general education school, in particular, textbooks in the social sciences and the humanities, in step with the times.

Psychological and pedagogical requirements to textbooks, principles for the development of students' independent thinking competence [12, 13]:

- **Pedagogical Requirement For Independent Thinking** – from the text of the textbook to the illustration, the national idea and worldview should be reflected in accordance with the content of the subject. It is necessary to explain and promote the dignity of independence and the essence of national values, to cultivate a sense of the Motherland. The textbook should contain content that orients the student to independent thinking, forming his worldview. The textbook should be able to pedagogically contribute to the development of the student.
- **Demonstration In Directing Independent Thinking** - in order to facilitate the student's understanding of the textbook text, to encourage him to think, categories such as events, happenings, processes should be modeled and provided with drawings, pictures that enrich the content of the text. In particular, enlarged models of inconspicuous objects and miniatures of large-scale objects make it easier to master the content of education. Zero exhibitions (illustrations) are extremely important for school textbooks. In some textbooks, its size is even larger than the size of the text. For example, in the social sciences and humanities, in addition to

literature textbooks, 40 percent of high school textbooks are text-based, and illustrations are no less common.

- **Logical Integrity For Independent Thinking** - when dividing the textbook into blocks, chapters, paragraphs or topics, the content should be arranged in the form of a certain system, looking for opportunities to fit the topic into one lesson as much as possible. At the same time, an independent approach is systematically formed as students master each topic;
- **Linking The Student's Independent Thinking With Practice** - issuing tasks that encourage the search for evidence that each concept, law, idea is manifested in some aspect of life and at the same time follows the norm. In this process, the student independently analyzes the practical necessity, the benefits of this knowledge. The learning process provides an opportunity to develop pedagogical skills, including research.
- **An Important Means Of Directing Independent Thinking Is Stratification** - the presentation of the text on two or even three levels (stratification), taking into account the potential of students, the inevitable differences in their interests. To do this, use methods such as lowercase, bold, or written. Since the work with the materials given in each textbook should be recognized as a barrier, not a problem for the student, but a lightness, convenience.
- **Controlling The Age Of The Student In The Direction Of Independent Thinking** - both the text and the illustrations correspond to the age characteristics of cognition, as proven by the science of psychology; not only the content of the subject, but also the method of expression must be completely different from the academic language. Especially in the social sciences and humanities, there are examples where the educational function, such as “Upbringing”, “History”, which captures the spirit of the student, evokes emotions. In creating a textbook, the content specific to a particular subject should not strain the reader and the scope of the text should fit into the scope of a lesson, while adhering to the principles of psychology. In particular, in the appropriate class, the student should be able to read how many words per minute, the speed of perception, be able to explain the content of the text and how many words he can write [14].

Given the possibility of the formation of a non-scientific imagination in the mind of the student, it is necessary not to give in the textbook ideas, definitions, rules, etc., which have not stopped the scientific debate, observed only at the level of scientific hypothesis. In general, the textbook should be described and illustrated in such a way that the student who enjoys it, enjoys it, is proud, rejoices, and in time suffers from certain realities[9, 13-p.].

The textbook is the main tool that helps students to actively and consciously master the knowledge, skills and abilities set out in the state standard and the curriculum, to increase the effectiveness of the educational process[13, 85-6.]. The following tasks are set in front of the school textbook:

- Compliance with educational objectives and state educational standards;
- To help students learn;
- Development of independent work skills in students;
- To connect the acquired knowledge with daily practice;
- Close linking of education and upbringing;
- Strengthening the acquired knowledge;

- Coordination with other disciplines (integration);
- Incorporate scientific conceptual information on a particular subject;
- Integration of different methods of education;
- To enable the student to self-assess or the teacher to assess and monitor student knowledge.

When creating a textbook, a number of didactic and methodological principles should be observed, in particular, general requirements for the content of the textbook and the language of presentation.

The content of a school textbook is recommended to be determined based on the following requirements, focusing on the development of students' independent thinking:

- Focus on the education of a harmoniously developed generation with high spirituality, independent thinking, capable of imagining a great future;
- Embody universal human values, Eastern realities and the national identity of our country;
- Aimed at strengthening the independence of our country, mastering the ideas of national independence, fostering a sense of patriotism;
- The presence of theoretical information, rules and concepts of scientific and practical importance, encouraging students to think independently;
- Observance of a parallel and certain logical, coherent sequence based on harmony, excluding duplication in interdisciplinary communication;
- Taking into account the age and psychological characteristics of the student;
- The textbook corresponds to the program and is designed to be studied during the hours allotted in the curriculum;
- Terms, definitions of concepts, expressions of rules, explanations of phenomena used in the relevant science are recognized and popularized in scientific practice;
- Coverage of students about the nature, socio-political potential and achievements of the republic [8, 20].

All these didactic principles serve to create textbooks that allow students to develop independent thinking. Because by preparing each textbook at the required level of content, an important resource appears that can allow the student to think independently.

Therefore, the question arises whether it is possible to deepen or simplify the content of the textbook in a situation where the textbook is strictly regulated, and how this will affect the development of the student's independent thinking competence.

For example, in a geography textbook, the tasks like "Explain the factors that determine the ecological state of your area" or "What measures are being taken in your area to ensure the sustainable use of land resources?" can be burdensome for a weak student. However, if these tasks are reduced to the scale of a village or mahalla, then even a poorly learning student can complete the task if the village is reduced to the size of a microdistrict. It is an opportunity for the teacher to differentiate education.

For example, a more difficult task such as "Create a geographic detail of how your area's economy compares to that of a neighboring area," appropriate for a gifted, especially active,

geography-interested student, might encourage you to look outside. Thus, setting the appropriate task for each student is an important and at the same time complex didactic requirement.

Educational questions and assignments In general, homework assignments, no matter how important and effective they may be, have pedagogical, physiological criteria that control them. For example, the time a student spends on all tasks in everyday subjects should not exceed 3 hours in grades 5-9. Accordingly, the geography homework is scheduled for approximately 30 minutes. This term may not equally satisfy everyone in a group of students with different abilities. For this reason, while most of the questions and activities in the textbook are designed for the average potential student, some of the activities are recommended for three different difficulty levels. In particular, the study of demographic processes within a particular region (administrative unit) will complicate the content of the task in accordance with the mass and composition of the region's population. Thinking through the demographic processes in the neighborhood for a student with disabilities, using the example of a village for a student with average abilities, tasks within the neighborhood for students with special needs who are interested in geography [11].

The following plan is recommended for completing tasks:

- Features of the geographical location
- Land area (is there enough reserve land for agriculture and livestock)?
- In your opinion, how will the additional land in the region be used in the future?
- Can the nutrient resources meet the needs of the livestock?
- For what purposes and how is hydropower used?
- What measures are taken for the protection and proper use of natural resources [10].

As you can see, if the student has questions and assignments, the teacher will also develop his research skills, forcing him to positively apply biblical knowledge in practice. The collected information deepens the content of the textbook. Then, based on this information, you can create a brochure on the economic and geographical characteristics of the region, town, microdistrict. In accordance with the methodological features of the textbook, a specific economic-geographical region or region was studied in comparison with the geographical aspects of the region or region studied before it. Geographical objects and events on the basis of micro-objects and events around the school determine their commonality and specificity.

The textbook not only guides the student to acquire independent knowledge, but also introduces him to the ways of acquiring independent knowledge. It is no longer an axiom that knowledge, skills and competencies should be based on a textbook. The impeccable and justified implementation of the recommendations, questions and tasks that make up the didactic structure of the textbook encourages students to look for a teacher if they have knowledge and skills, and develops their methodological skills.

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**A COMPLETE REVIEW ON STATE-OF-THE-ART MACHINE
LEARNING TECHNIQUES TO DIAGNOSE THE CORONA VARIANT
INFECTION**

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ABSTRACT

COVID-19 is no longer a pandemic, but rather an endemic disease that has claimed the lives of billions of people globally. COVID-19 has no specific treatment, thus living with the condition and its symptoms is unavoidable. To deal with COVID-19-related symptoms, researchers from all areas of study were brought in to cope up with this disease effectively. Machine learning (ML) methods are broadly utilized to detect a variety of infections in various diseases. To detect and diagnose corona viruses variant different machine learning methods are being used widely. In this paper, we will review various state-of-the-art machine learning algorithms and how it can be used to combat the epidemic.

KEYWORDS: SARS-COVID19 (Corona Virus Disease), SARS-CoV2 (Severe Acute Respiratory Syndrome Coronavirus 2), Corona Variant, Lockdown 24-March-2020, Delta variant, Gamma variant, Omicron, Neo Cov variant, Machine learning, Deep learning.

1. INTRODUCTION:

Infections and deaths were reported worldwide after a novel corona virus epidemic outspread from the country named China in December 2019 and developed into a pandemic. More than 12 million people were infected with COVID-19, and with over millions of people dying as a result of the virus. The virus was dubbed SARS-CoV2, and the condition was dubbed COVID-19. Cough and fever are the most prevalent symptoms, with pneumonia-like symptoms and dyspnea being seen in some individuals in critical condition [1]. COVID-19 is disseminated via particles of infected respiratory droplets that are passed from an infected to a healthy individual, according to studies.

In humans, a variety of comparable symptoms have been seen, including skin rashes and gastrointestinal issues. The latest research has looked into potential zoonotic pathways and additional classes that can contract COVID-19. There is no specific cure for COVID-19, yet efforts to create a vaccine or medications to treat COVID-19 are now underway all around the world. Antiviral drugs that are used to treat various viral disorders have been used in current treatment strategies. Healthcare personnel were given particular tools to treat people who were infected with COVID-19 and in order to take steps to treat this viral infection and dangerous disease.

Countries around the world have implemented COVID-19 mitigation measures, which have included entire lockdowns, social distance, and advice to individuals to wash their hands, sanitize surfaces, and wear face masks [2]. Individuals with moderate COVID-19 symptoms were advised to self-isolate for more than two weeks and seek medical attention if their health concerns deteriorated. COVID-19 has been proven to affect so many people in various communities, as well as those with pre-medical issues, in multiple cohort-based studies.

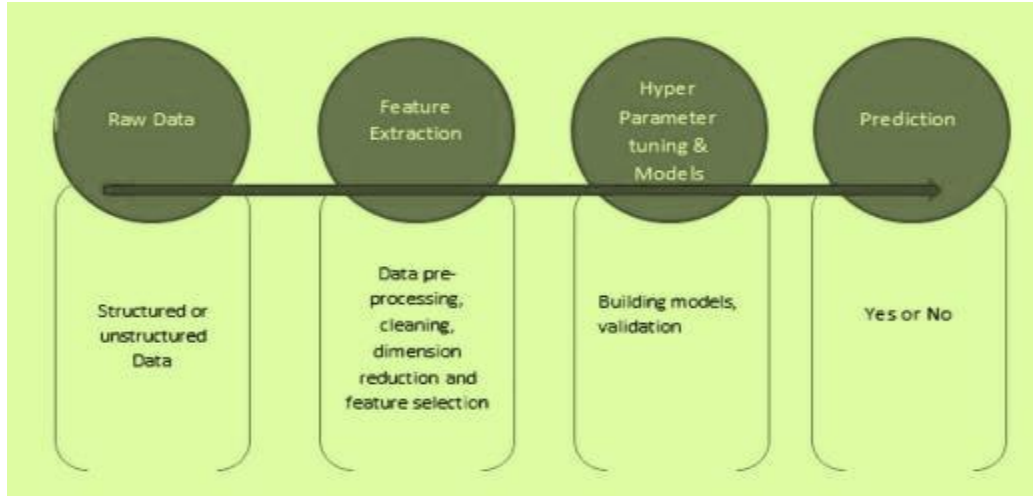


Fig. 1 Essential learning process for the development of predictive models

Another alternative mechanism of infection transmission was thought to be asymptomatic transmission. One can say that asymptomatic COVID-19 patients are the persons whose test reports are positive for COVID-19 but they do not show any symptoms [3]. This may have expedited COVID-19's spread because asymptomatic persons may not be aware of the virus and may have disseminated it through social encounters with healthy people.

2. Related Work:

2.1 Relevant work done to identify COVID-19/SARS COVID infection

We will discuss similar work in the area of COVID-19[4]. Many researches have focused on statistical analysis-based forecasts of how the infections are expected to propagate.

Neher et al.[5] proposed a model called seasonal transmissibility model, a mathematical model that may forecast the path of a virus re-infecting sub-populations around the planet in upcoming years. As part of their suggested model, they considered infection, emigration, and population turnover rates. A more sophisticated version of their model takes into account the predicted hospital resources needed to support a pandemic like COVID-19.

Penn Medicine developed a hospital model called COVID-19 Hospital Impact Model for Epidemics, CHIME, that predicts the number of hospitalized, ICU, and ventilated patients. They employed a statistical model based on factors such as social contact, hospitalization rate, and detection probability. Several machine learning-based models for COVID-19 have been proposed throughout the world in an effort to understand the multiple aspects of COVID-19 [6].

Hu et al. [7] developed a ML model to predict cumulative COVID-19 cases based on past growing data. They used the various features retrieved from their proposed auto-encoder model to categories cities and provinces into clusters. Similar LSTM techniques have also being investigated in China to better comprehend patient data and study epidemic trends. So far, all COVID-19 prediction and projection models have emphasized on graphical analysis and future curve estimations.

Wang et al. [8] proposed a Framework to evaluate the Traditional Chinese Medicine (TCM) model engaged deep learning concept. The authors developed an Artificial Neural Network (ANN) model with three-layer architecture. They've also put their OSPF model to the test, evaluating the efficiency and safety of using TCM instructions for additional flu-like disorders as a potential source of COVID-19 medicines. TCM instruction is classified as 'Safe' or 'Unsafe' employing their provided approach.

Wang et al. [9] suggested a GRU (Gated Recurrent Unit) based model incorporating bi-directionality and observations. They discovered that Tachypnea for breathing, which is defined as excessively quick and shallow breathing patterns in patients diagnosed with COVID-19. They demonstrate that their suggested model can distinguish respiratory patterns with high F1 scores.

Wang et al. [10] presented the Inception Migration Neuro Network i.e. a CNN-based model for identifying radiographic characteristics in CT scan images of patients. The goal of their suggested model is to determine if COVID-19 is present or not.

Sethy and Behera[11] suggested a ML model for X-Ray pictures based on SVM. They used the False Positive Rate (FPR), F1 score, Kappa, and MCC (Matthews Correlation Coefficient) metrics to access the efficiency of their suggested model.

Souza et al. [12] proposed a supervised ML technique such logistic regression, linear discriminant analysis, Naive Bayes, KNN, and SVM to identify patients who could develop severe COVID-19 symptoms early. Individual fundamental information such as gender, age, symptoms and recent travel history were used to train the ML methods, which were taught using a publically available database relevant to Brazil. The authors claim that area under the curve of AUC i.e. 0.92, a sensitivity is of 0.88, and a specificity is of 0.82 can predict illness outcomes.

2.2 Determination of COVID-19 Variant Using different Machine Learning techniques

Dan Assaf et al. [13] pivoted on using a database from a medical facility to identify patients at risk of worsening throughout their hospital stay. To train three different machine-learning techniques, the authors employ historical and clinical characteristics such as APACHE II score, white blood cell count, time from symptoms to admission, and oxygen saturation. The results reveal a sensitivity of 88.0 percent, a specificity of 92.7 percent, and an accuracy of 92.0 percent.

Pourhomayoun and Shakibi [14] use various ML algorithms to estimate the mortality rate of COVID-19 patients, including SVM, Neural networks, logistic regression, random forest and k-nearest neighbor. The authors use laboratory-confirmed cases from 76 countries to train the algorithms. Demographic information, travel history, basic medical details, and all the symptoms are included in the dataset. Their findings suggest that the neural network method performs the best, with a precision of 93.75 percent.

Li Yan et al. [15] offer a decision method based on the supervised classifier to predict patients with the highest risk. Lactic dehydrogenase, lymphocytes, and high-sensitivity protein were initially used to train the predictive model. The results reveal that the model can correctly predict patient outcomes with greater than 90% accuracy.

2.3 Diagnosis of COVID Variants Using Internet of Things (IOT):

M. Kamal et al. [16], look at the current state of COVID-19-related IoT applications, identify deployment and operational issues, and offer ways to further control the outbreak pandemic. Furthermore, they conduct an analysis for deploying IoT in which both internal and external factors are considered. There are several elements that are discussed.

V. Chamola et al. [17], provides a thorough examination of the COVID-19. Following that, the stages that the disease goes through as it spreads were addressed. The study also lists the numerous therapeutic efforts being made to stop the pandemic, as well as the preventive measures that should be followed until that time comes. The discussion mostly focuses on how upcoming technologies such as IoT, drones, AI, blockchain, and 5G can be used to mitigate the impact of the COVID-19 pandemic.

M. Otoom et al. [18], proposed a system that use an IoT framework to gather real-time symptom data from users in order to detect suspected coronavirus cases early, monitor the treatment response of the patients already recovered from the virus, and learn more about the virus's nature by gathering and analyzing relevant data. There are five primary components to the framework. This study suggests eight machine learning techniques for quickly identifying possible coronavirus cases using real-time symptom data. After selecting the appropriate symptoms, experiments were conducted to test these eight algorithms on a real COVID 19 symptom dataset.

M. N. Mohammed et al. [19], proposes a system using a smart helmet with a mounted thermal imaging that can detect the coronavirus automatically from a thermal image with minimal human input. The thermal camera technology is integrated into the smart helmet and paired with IoT technology for real-time data monitoring during the screening process. Furthermore, the proposed system used face recognition technology and can show the pedestrian's personal information as well as take their temperatures automatically.

Nasajpour et al.[20], this article examines the role of IoT-based techniques in COVID-19 and examines state-of-the-art architectures, services, and industrial IoT-based solutions for combatting COVID-19 in three stages: early detection, quarantine, and recovery.

3 Machine Learning Methods

ML is a subfield of artificial intelligence that aims to give computers a learning capacity through the use of properly-defined algorithms in order to enhance performance or predict accurate results. Such algorithms often help to learn on previously accessible data, presented as labeled training sets. These labeled training sets are used by supervised learning algorithms to develop the parameters of a statistical model in order to minimize the loss function. The trained model can then generate accurate predictions utilizing data that was never used during the training phase as input.

Naturally, the amount of the data sets employed is critical in assuring the algorithm's proper functioning. During the current epidemic, ML has been utilized to build various algorithms aimed at identifying those patients who are more likely infected at an early stage. These methods produce predictions based on basic information about the patient, medical symptoms, travel history, and the time spent in the hospital [21].

This section gives a quick rundown of the machine learning algorithms that can be used to combat COVID-19. The use of machine learning to combat COVID-19 is critical in the current circumstances. The three primary types of ML algorithms are supervised learning, unsupervised learning, and reinforcement learning [22].

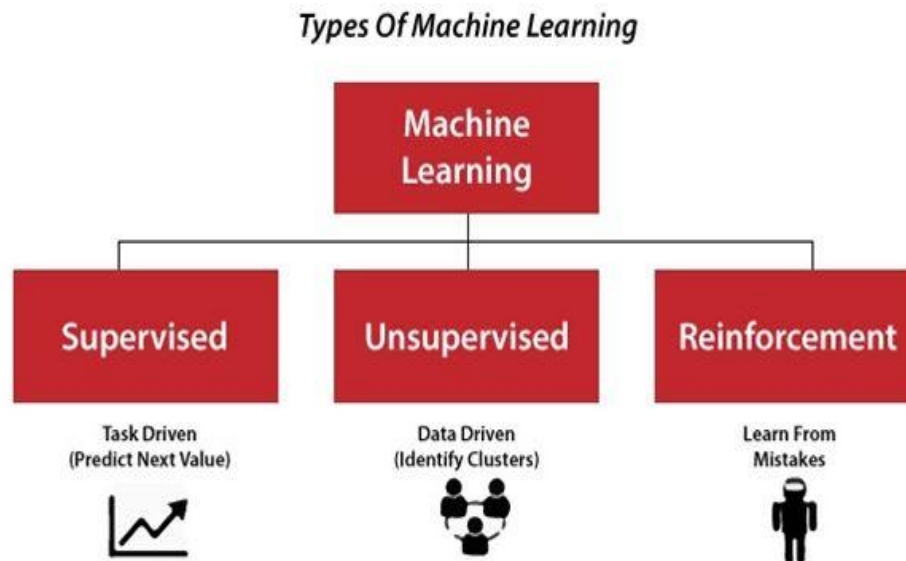


Fig. 2: Types of machine learning (ML) algorithms to cope with corona disease

3.1 Supervised Learning

In supervised learning ML techniques, the training data is labeled. A set of labels as outputs is also provided. These algorithms grasp from the dataset and predict accurate results when a given amount of data has been trained [23].

3.3.1 Classification

The data that has been trained is categorized into one of the predetermined classes. One of these algorithms' drawbacks is that they can't handle missing data. But, thankfully, existing data can be used to fill in the gaps. To analyze COVID-19 trends, a variety of categorization algorithms are applied. Some of them are listed below.

i. K Nearest Neighbors' (KNN)

The data points' locations are used to classify them. The number of neighbors is used to group similar objects together. Non-parametric categorization is used. There are no hypotheses made regarding the output data. It's also termed as a lazy learner algorithm because the learning process is delayed and the appropriate action is performed after the data is classified. The minimum number of neighbors necessary is set to k by the user. In general, the predictions are more reliable when the value of k is larger.

To improve classification accuracy, weights are attached to the neighborsemployed KNN to detect respiratory illnesses as shown in fig 1. KNN was utilized to detect severe influenza. KNN was used to track the infected users' locations.

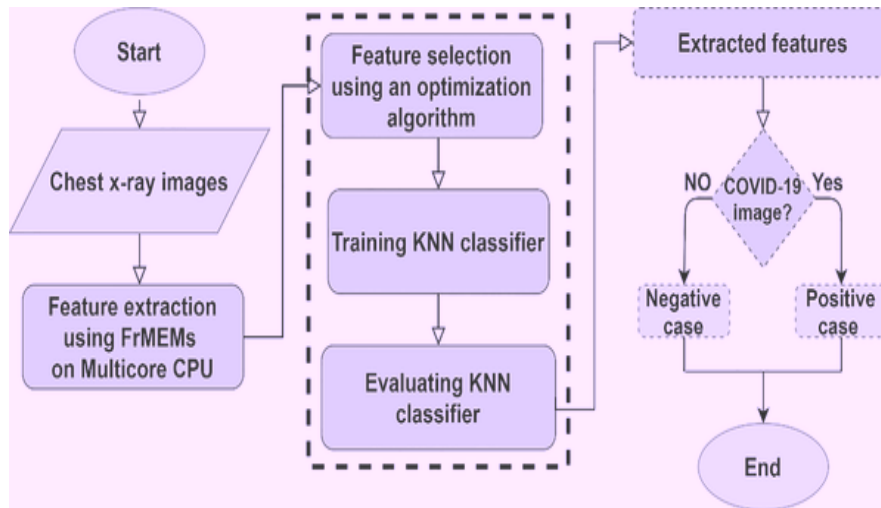


Fig 3: Image based Diagnosis of COVID-19 Using KNN

ii. Support Vector Machine (SVM)

The data is divided into separate groups using a hyperplane. To locate the smallest gap between data points, SVM calculates the maximum marginal distance. Hyperplanes serve as borders, dividing data points into categories. When there are just two attributes, a single line exists. When the size of input is increased to three, a 2D plane is generated [23]. It becomes increasingly harder to see the hyperplane as the number of characteristics grows. Support vector machine was employed by Mori et al. to predict the onset of disaster in a specific place. For the diagnosis of COVID-19, SVM was incorporated with IoT and Convolution Neural Networks (CNN).

iii. Naïve Bayes

The dataset can also be classified using Bayes' theory. The classification of all features is based on the assumption that they are fully independent of one another, hence the name naive. The input data is split into two parts i.e. a feature matrix and a response vector. All data is kept in rows in the feature matrix, and the outcome class is defined in the response vector. The Nave Bayes classifier was used to group tweets. During the epidemic, it aided in the management of social networking issues.

iv. Logistic Regression

The sigmoid curve is a cost function that is used to forecast a dependent variable based on one or more independent variables. The Sigmoid function is an S-shaped curve that splits data into

multiple categories. Logistic regression can help with binomial, multinomial, and ordinal classifications [24]. This concept was used to predict the total death rate.

v. Decision Trees

The outcome is predicted by the leaf nodes, decisions are done by the branches, and characteristics are made by nodes in a decision tree. This distributes all the instances by assembling them down the tree from the root to the leaf nodes, resulting in the instance's classification. During pandemics, decision trees were used to detect the location of users (Elhoseny, 2019). A hybrid face mask detection application was created employing decision tree [25].

vi. Random Forests

When the data is large, classification is made using a decision tree might lead to over fitting. Random forests can help us overcome these restrictions. To boost accuracy, different decision trees are categorized and then combined together. "Bagging" is the term for this process. The RF algorithm was used to predict COVID-19 health. The distribution of COVID-19 daily cases over the world was estimated using a random forest machine learning approach.

vii. Artificial Neural Network (ANN)

ANN is a multi-layered network that is entirely connected. There are three layers: input, output, and numerous hidden layers (Refer to fig 2). The different nodes in one layer are connected to the nodes in the preceding and subsequent layers. The inputs are processed by an activation function. One layer's output becomes the input for the following layer. The user's position was determined using ANN and IoT. Although the data was restricted, the accuracy was great. ANN technique was utilized to detect the similar group of people present in a different region [26].

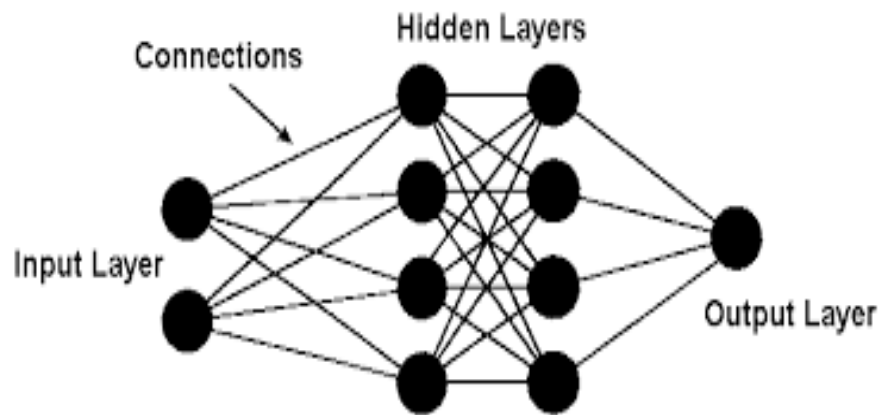


Fig 4: Layers in ANN

viii. Deep Neural Network (DNN)

Because neural networks are often boring, DNN is an adaptable model that also allows for creativity. The total nodes are required to analyze the results is quite high. DNN is made up of three layers: input, output, and a large number of masked levels. DNN is utilized for progressive learning and the capacity to adjust their output. It's critical to move healthy people to non-infectious areas.

ix. CNN

Because of its accuracy and capturing orientation, CNN is a better method for classifying images. They have a variety of layers, such as a pooling layer, a convolutional layer, and a fully connected layer, among others. A CNN-based model was combined with Internet of Health Things for identifying persons with COVID-19 [27].

3.1.2. Regression

This is a technique for getting predictive learning component that converts a data object into a meaningful variable. Regression is a statistical technique for establishing a link among the target and predictor variables. We can also use regression to model the relationship between a dependent and independent variable. Variables such as temperature, age, salary, and so on can be forecasted easily after a certain amount of data has been trained [28].

i. Linear Regression

This is a straightforward approach for performing predictive analysis. It depicts the dependent and independent variables' linear connection. If there is just one input, the model is referred to as simple linear regression, and if there are several inputs, the model is referred to as multiple linear regressions.

ii. Polynomial Regression

Polynomial regression can be used to model non-linear datasets. For the dependent and independent variables, a non-linear curve is created. Original features are used to generate polynomial features of a particular degree, and the model is then created using linear regression. The polynomial regression model was used to estimate the COVID-19 epidemic in India. In order to forecast COVID-19 spread on a global scale, hierarchical polynomial regression models were applied [29].

iii. Support Vector Regression

This can be used for regression as well as classification purposes. To fix largest number of data points along the margin, a hyperplane with maximum marginal distance is determined. Maximum data points must be contained within the boundary lines, and the hyperplane must contain the maximum number of data points. It was utilized in Brazil to anticipate COVID-19 confirmed cases in the short term [30].

iv. Ridge Regression

It has a small bias, which aids in the development of stronger long-term forecasts. The ridge regression penalty is the name for this small bias. Individual features can be used to compute the penalty. The algorithm's application case is high collinearity between independent variables, because both polynomial and linear regression would fail in this situation. If there are more samples than parameters, the model can be employed. It is also a regularization approach because it minimizes the complexity of models.

3.2. Unsupervised learning

In unsupervised learning, the data is not labeled as shown in fig 3. The user is unaware of the data's pattern. To analyse the information structure, the algorithms employ several methodologies. Clustering is the most used unsupervised learning approach [31].

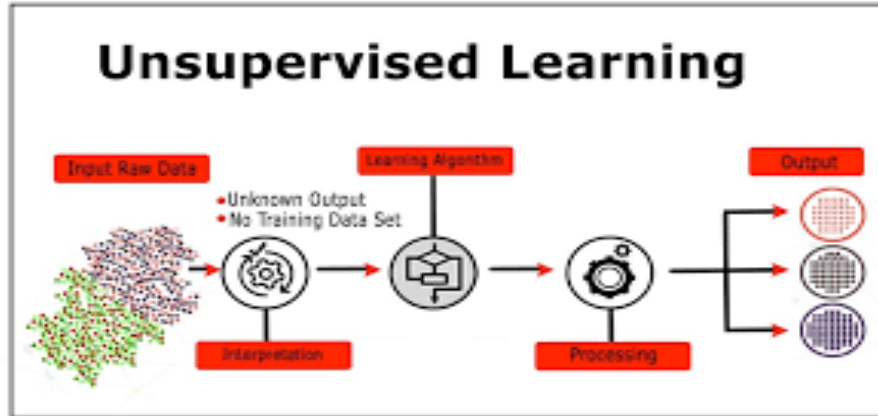


Fig 5: Working of Unsupervised Learning

i. K-Means

The data is separated into many clusters. The total of clusters is assigned first, followed by the selection of random centroids from the dataset. The centroids are updated after each repetition. The similarity score is calculated using either the Euclidean distance or the cosine distance.

ii. K-Medoids

When there are a lot of outliers in the data, this strategy is used. The data points for the median are picked at random. The remaining data points are assigned to these medoids depending on their minimum distance. In Indonesia, data mining techniques, notably the k-medoids algorithm, were studied in relation to national food security during the COVID-19 pandemic [32].

iii. Fuzzy C-Means

Centroids are chosen, and data is initialized in these clusters at random. Based on the distance between the data point and the cluster center, this technique assigns membership to each data point corresponding to each cluster center [33]. The use of Fast Fuzzy C means clustering to extract ROIs in CT lung scans of COVID-19 was explored. This was beneficial to radiologists and other medical personnel.

3.3. Reinforcement Learning

Reinforcement learning is the process of increasing the reward by taking appropriate action in a certain situation. In this strategy, various attempt to find the best path or behavior for a particular condition [33]-[34]. During the training phase of supervised learning, the answer key is available to the data, on the other hand in reinforcement learning, the agent selects the direction of action and there is no single answer key to assist the model (See fig 6). The models learn from their mistakes even if they don't have access to any training data.

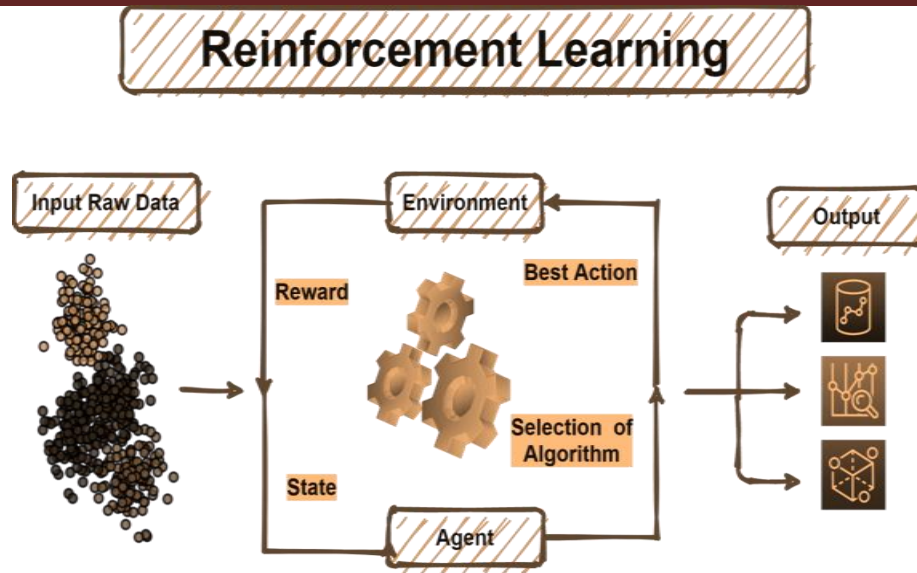


Fig 6: Process of Reinforcement Learning

i. Q-learning

Q-learning employs sequential decision making. The optimum answer is generated for each input, and the matching input is constantly dependent on the previous output. Depending on the scenario, the objective function can be maximized or minimized [35]. The use of multi-robot collaboration and the Q-learning approach to avoid COVID-19-affected patients was described in a study.

ii. Markov's Decision Process

The primary method of this algorithm is to learn from interactions in order to attain a given goal. The environment and the reinforcement agent are always interacting; the agent chooses the action, and the environment provides the response to these actions[36]-[38]. The COVID-19 pandemic and clinical risk factors of patients were studied using an epidemiological Markov model.

4. CONCLUSION

The COVID-19 pandemic had globally impact the safety of individuals. Technology continues to advance at a rapid pace, particularly in machine learning and deep learning domain. ML has made a significant contribution to people's struggle against COVID-19. Favorable data-driven alternatives are still assisting humanity in dealing with COVID-19. In the beginning, a basic introduction of the pandemic was covered. The next section goes through the related work of how to use ML, DL and IOT to diagnose various symptoms of COVID-19. Later, we discussed how to control and manage the epidemic utilizing various machine learning tools. Finally in section 4 we conclude the paper.

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**PROSPECTS AND FOREIGN EXPERIENCE IN THE DEVELOPMENT
OF THE PEDAGOGICAL PROCESS AIMED AT STRENGTHENING
ACTIVE CIVIL COMPETENCE IN FUTURE TEACHERS**

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ABSTRACT

Today, the tasks of rational use of human capital in our country, increasing social activity in society, the role of young people in the implementation of democratic changes, the study of their duties in the formation of civil society, the use of pedagogical opportunities for the formation of active civil competence in them, the development of pedagogical convictions for the development of civil culture.

KEYWORDS: *Human Capital, Youth, Social Activity, Democracy, Pedagogical Conviction, Development, Civil Culture, Civil Competence, Education.*

INTRODUCTION

In the higher education system, there are issues of raising the avold, which is actively involved in social relations by increasing the legal and political knowledge of the students, developing its high potential, increasing the level of knowledge, a sense of genius for the future of the country, the problems in it, has been formed at a high level. After all, "we should pay special attention to the active participation of young people in democratic processes in the life of our country, increasing their political and social potential." To do this, it is required to create an environment in the higher education system that serves to increase the legal and political outlook of students, the formation of civil-political competence, to create a system of transition to the pedagogical process in connection with socio-humanitarian subjects and practice, which contributes to the increase of political literacy of students.

The development of active civil competence in future teachers is the basis of a holistic pedagogical process, and this process requires harmonization of the student's interests and needs with legal education. The educational system is a pedagogical mechanism of society and student integration. Innovative educational technologies provide for teaching each student to daily intense mental work, creative and independent thinking, to educate conscious independence as an individual, to instill in each student a sense of personal dignity, to strengthen confidence in their own strength and abilities, to form a sense of responsibility in studying. After all, "in today's hectic time, we all know that there are increasingly different risks that are aimed at capturing the minds and hearts of young people. In the fight against them, the rich history and culture of our people, the courage of our great ancestors, the national interests of our dear Uzbekistan will

serve as a source of power for us". This requires the formation of a sense of genius and a strong social responsibility from the youth of our society.

It is desirable to carry out a number of measures to ensure the effectiveness of the educational process aimed at the development of civil competence in future teachers. Civil society is a unique model, the basis of which is a person with a civil position. Therefore, such subjects must, on the one hand, have a high level of personal independence in relation to this society. Indeed, in any complex situation, one will be able to remain faithful to the principle of justice, to his own vital and creative prints, to boldly educate people on the shortcomings and problems that are being tortured, to form public opinion in order to overcome them, first of all, to have spiritual courage like you. Therefore, it turns out that an important factor in the formation of active civil competence in future teachers is the upbringing of spiritual courage in them.

At all times, students were considered a socially developed, progressive, creative, progressive part of society. In the formation of certain knowledge, skills related to spiritual and moral education, training of highly qualified specialists has always been of particular importance in the development of social, political independence and society. This approach is also reflected in the law of the Republic of Uzbekistan "On education" and the national program of Personnel Training. From this it follows that under the concept of education today, the educational process is understood. In this system, the moral and moral education of students and youth is considered as a promising direction. Formation of a sense of spirituality, legal norms and respect for laws in students are one of the main tasks of this process.

Innovative activity aimed at shaping the civil worldview of students in higher education is the process of providing integrated information. The qualities formed in this process primarily serve to develop the social consciousness of the students and motivate them to political activity. Qualities such as development trends and adaptability to the conditions of a developed market economy, social stability, initiative and an active civil worldview should be characteristic of today's students and young people.

The free social environment created in higher education is the future teachers of the interrelation erkinligi, the word erkinligi, participation in political relations brings together different views on the political, economic situation in the society. As a result of this, the student-youth will be able to make a worthy contribution to the development of society. In the process of building civil society in Uzbekistan, it is important to ensure political security of the individual, state and society. Therefore, socio-political activity in future teachers also develop their legal culture.

One of the main tasks of today's higher education is to teach students to operate independently in the conditions of information and education environment, which is becoming more and more complex day by day, to make rational use of information flow. To do this, it is necessary to provide them with the opportunity and conditions for continuous independent work. In order to increase the effectiveness of pedagogical higher education and ensure that students have full knowledge of their specialties, that the individual is in the center of attention and that young people receive a harmonic, independent, in-depth knowledge of their chosen specialties, higher educational institutions need professors and teachers who know modern pedagogical technologies and interactive methods, in addition to highly qualified to do this, it is necessary to arm the future teachers who are studying in the direction of pedagogy and psychology with innovative pedagogical technologies and interactive methods and enrich their knowledge.

In order for students of the university to have a civil position, they are also required to achieve the formation of certain qualities in themselves. It is necessary to form a mature citizen by

studying theory, observing social activities, getting acquainted with the content of higher education, to have an active civil position.

On the basis of systematic approaches to the composition and content of the process of development of the civil competence of students, the following were identified: formation of the tendencies of the development of qualities inherent in him as a citizen of the society of Uzbekistan in future teachers, the content of needs, goals, interests, the desire to serve the state and society in accordance This means that the emotional and willpower stability of students in higher education, moral qualities strengthen active civil competence in them.

According to the deputy of the legislative chamber of the Oliy Majlis Rasul Kuserbaev, a wide range of educational opportunities are being created to increase the social activity of students, raise their legal level, develop their political culture. It is emphasized that the use of modern methods for the organization of the pedagogical process in higher education to the formation of students' civil compensation to eagle, information and resource centers in educational institutions are established, creating opportunities for the use of the Internet system. However, today's young people do not use the social environment that is conducive to education and the rational use information technology. According to the analysis he cited, "currently, 90 percent of young people refer to the Internet as the main source of information. We can observe the phrase from scientific, cultural and educational sites that do not have harmful effects on a particular part of the media used, if a large part of the media is mainly social networks and video, audio portals such as Twitter, Instagram, Facebook, Telegram". It is known that the Internet has become a world of entertainment, where time passes meaningfully, along with being a library that finds any book, information today. An effective means of increasing the social activity of student-youth is the rational use of the global Internet network. From the global Internet network and its capabilities, it will be useful for them to try to form civil compensation, increase social activity, increase political level and culture and develop their legal worldview. However, today, the growing number of young people who have fallen into the harmful effects of the Internet, indifferent and irresponsible, is also increasing the need for increasing social activity of young people and the formation of active civil compensation in them. According to deputy Rasul Kuserbaev, " today in the Internet there are more than 9 thousand sites with sexual content that promote easy ways to commit suicide, while 49 percent of computer games promote violence and evil. At the moment, 42 percent of children and adolescents are completely subject to the effects of pornography distributed in the online style. International experts confirm that 38 percent of the world's children have regular access to sites in the spirit of violence, 26 percent to web pages of a nationalist character". Through these figures, it can be understood that today there are a number of problems in terms of increasing the social activity of young people, their place in the socio-political life of the country, formation of legal knowledge, political culture and civil competence, and in the elimination of these problems the tasks of bringing new approaches to the educational system, developing effective

Bringing youth policy to a new level at a new stage of development of our society, increasing the social activity, ensuring their active participation in political processes is one of the criteria of today's reforms and one of the priority tasks in our activities. In particular, "important steps are being taken to create new jobs for young people, to provide loans to young entrepreneurs, especially our girls, for their conscientious involvement, to prepare them for the profession and improve their skills, to support farmers, to educate and educate our children, to make them healthy and to organize their leisure time meaningful". However, it comes to the fact that there

are a lot of problems in supporting young people, increasing their social activity, the formation of civil compensation.

These problems can be classified as follows:

It starts with problems such as the level of education and the irresponsibility of parents and the inability of ulrag to influence the formation of personal position, active civil competence. One of the main factors is that Bugung can not be an example for a parent child and does not have enough knowledge and experience to be an example in life situations. Because the initial life skills of young people and their entry into social relationships are experienced through Family, Parental orientation. One of the main factors hindering the formation of social activity in young people is the system of parental and non-level education, which does not focus on social relations, does not absorb civil responsibility.

In particular, the illogical nature of the entrance examinations to higher education, the opportunity to become a student by memorizing facts, data, quantities and numbers, the preparation of applicants for the test solution, rather than the acquisition of knowledge and knowledge for admission to a higher educational institution, is the destruction of higher education, in fact. Therefore, today's student does not understand its practical importance, although he knows everything, rules, theoretical information well. The lack of quotas in higher education, the very difficulty of entry and the principle of ease of graduation are also hindering the strengthening of civil position in young people.

Today, the main part of the population of our country, that is, about 60 percent, is the share of those who have turned 30 years old. Today, young people are represented as an important force in maintaining national identity and strengthening state independence. In order to develop civil society in Uzbekistan, reduce the risk of negative events of the globalisation period and educate young people as spiritually mature persons, it is necessary to form active civil compensation in them. After all, young people who have a civil position, understand deeply what the main goals of society are for example, and their responsibility before the people and society. Therefore, "we will continue our great work, which began in the process of educating our youth in the spirit of love and loyalty to our native land, the ideas of independence, realizing their talents and abilities, their noble aspirations, with determination from now on. For this purpose, in all regions and districts of our country, in our cities and villages new educational centers, cultural and art centers, Sport facilities are being restored and given to the disposal of young people.

Today, in higher education, through the formation of an active civil competence of students, it is also required to strengthen the competency of protecting them from various ideological threats, counter ideological assaults such as religious extremism, terrorism, drug abuse and mass culture. For this purpose,"our country pays great attention to the forgiveness and return to a peaceful life of young people who, due to the qualities of tolerance, forgiveness and generosity inherent in our people, apply knowledge and ignorance, go astray from the right path, sincerely regret their deeds". Therefore, through the transfer of young people to active social life, their support and the formation of an educational social environment, the tasks of protecting them from various threats, strengthening active civil compensation are also emerging.

In an environment of increasing ideological and information struggle in the international arena, the need to raise the worldview of young people, formulate their thinking, strengthen civil responsibility is increasing. Because the nature of the global ideological struggle is rapidly changing, the improvement of methods and means, as well as the great threat to the world peace-loving forces, it is required to develop active civil positions of young people on the basis of the

requirements of the period in the current difficult and dangerous conditions. After all, "we mobilize all the forces and opportunities of our state and society to ensure that our young people are independent-minded, have a high spiritual and spiritual potential, grow up to their peers on a global scale as people who are not idle in any sphere, to be happy".

In the future teachers, it is important to develop the basics of the formation of legal culture through such disciplines as rational, systematic use of the experience of socio-humanitarian Sciences in the higher education system, civil society, jurisprudence and philosophy, in order to form an awareness attitude to life, to increase the sense of genius in the surrounding events, to realize social responsibility. It aims at strengthening the social, political and legal foundations of the civil position at a new stage of development of society, deeply absorbing the feelings of self-sacrifice, loyalty and responsibility, praising national values, traditions and customs. But the penetration of noble, humane, noble ideas into the consciousness of a person, in particular, young people, is not carried out smoothly. This can be explained especially by the fact that young people are interested in different ideas and are easily given.

Intellectual training along with legal culture is also of great importance in the formation of active civil competence of students in higher education. Science, religion, philosophy, art, artistic literature, morality and law, which are forms of social consciousness in the formation of social responsibility, a sense of genius in society, are the sources and basis of ideological education, increasing social activity in the future cadres. Therefore, educating students as active citizens, free, free and broad-minded people along with being strong specialists, competitive personnel is a period requirement and the main goal of today's reforms. Also, once the ongoing educational and educational processes are directed to broaden the worldview of students, enrich their consciousness with secular, scientific knowledge, this contributes to their active life position. After all, "you all know well that in today's hectic and hectic time, there are increasingly different risks that are aimed at capturing the minds and hearts of young people. In the fight against them, the rich history and culture of our people, the courage of our great ancestors, the national interests of our dear Uzbekistan will serve as a source of power for us". Therefore, it is important that higher education, along with the training of the student as a strong manpower, directs him to life, success, educates him socially active and inviolable.

Social Sciences perform the main task in educating students as a person with an active civil position. Such disciplines as "National idea: strategy of development of Uzbekistan", "Civil society", "History of Uzbekistan", "Sociology", "Religious studies", "Philosophy", "Culturology" will try to prepare students for socio-political and legal relations, to form a broad outlook in them, to increase their knowledge in various fields and through this to strengthen their civil position. These disciplines, along with expanding the scope of students' knowledge, are of social importance with increasing their social activity, forming such qualities as self-sacrifice and loyalty, helping them to understand social responsibility.

Higher education also assumes the responsibility of bringing them to social maturity in the formation of active civil compensation in young people. The social maturity of young people is associated with the process of their socialization.

The socialization of students and their introduction into social life is accompanied not only by independent labor, but also by the termination of their education, the acquisition of a profession, the complete independence from adults financially. Within the framework of social groups, these factors do not show the same, so young people follow them differently, that is, although young people can approach any issue very seriously, they think like young children in solving another

issue. Secondly, the social maturity of young people is realized under the influence of a number of independent factors. Each of these social networks performs various tasks in the education of young people and has its own special effect.

In conclusion, modern higher education institutions in Uzbekistan should mobilize opportunities for mastering the rich spiritual and legal heritage created by our ancestors in the past. From this point of view, civil education, the formation of the civil worldview is the central issue of the upbringing of a harmonious generation. Citizenship is closely related to self-sacrifice, the highest point of which is manifested in quality. Therefore, in order to educate and cultivate self-sacrificing young people, it is necessary to first find in them a sense of citizenship.

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THE USE OF EFFECTIVE TECHNOLOGY IN TEACHING ENGLISH LANGUAGE

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ABSTRACT

At present, the interest in the application of interactive methods, innovative technologies, pedagogical and information technologies in the educational process in the educational process, attention is being paid to the day by day, one of the reasons for this is that by this time in traditional education, students have been taught to acquire only their ready knowledge, modern technologies teach them.

KEYWORDS: *Teaching Process, Development, Knowledge, Education, Innovative Technologies, Upbringing, Interactive Methods.*

INTRODUCTION

The teacher in this process creates conditions for the development, formation, acquisition and upbringing of knowledge of the individual and at the same time performs the function of a steward, directing. In the process of education, the reader becomes the main figurehead. Therefore, the role and role of modern teaching methods, interactive methods, innovative technologies in the training of qualified professionals in universities and faculties is incomparable. Knowledge, experience and interactive methods of pedagogical technology and pedagogical skills ensure that the students have an educated, mature qualification.

Innovative technologies are the pedagogical process, the introduction of innovations and changes in the activities of teachers and students, and interactive techniques are used mainly in their implementation.

Interactive techniques are referred to as collective thinking, that is, methods of pedagogical interaction are a component of educational content. The peculiarity of these techniques is that they are carried out only through the joint activity of educators and students.

The process of such pedagogical cooperation has its own characteristics, which include:

- The ability of the student-student not to be indifferent during the lesson, to think independently, to create and to search;
- To ensure that the interest of the student in the learning process to the knowledge is constantly present;
- Organization of always collaborative activities of teacher and student-student.

Teachers studying issues, problems of pedagogical technologies, according to scientific researchers, practitioners, pedagogical technology is defined as the use of computer, distance learning or various techniques that are only related to information technology, as well as those that need to be applied in the teaching process. In our opinion, we believe that the most basic negation of pedagogical technology depends on the technologies that are chosen so that the teacher and the student-students can achieve the Guaranteed Result from the set goal in cooperation, that is, each education that is used in achieving the guaranteed result according to the goal in the process of teaching technology is the basis of this educational process, in our opinion, if it is able to organize cooperation activities between teachers and students, if both can achieve a positive result, if the student-students in the educational process can think independently, work positively, search, analyze, draw conclusions themselves, evaluate themselves to the group, the group to them, and the teacher can create opportunities and each lesson, subject, subject of study has its own technology, that is, pedagogical technology in the educational process it is individual it is a process of order, it is a pedagogical process that is aimed at one goal, designed in advance and aimed at providing a guaranteed result, based on the needs of the student - student.

It is at their disposal what kind of technology the teacher and the student choose in achieving the result from the goal, because the main goal of both parties is clear: the result is directed, in which the student-the level of knowledge of the students, the character of the group, the technology used depending on the circumstances is chosen, for example, to achieve the innovative educational technology is a methodology of organizing educational and educational activities that includes new or qualitatively improved methods and tools available to improve the effectiveness of the educational process and create the best conditions for educational and educational activities. Current trends in the socio-economic development of society. Innovation in education include 6 activities aimed at the emergence of innovation in the field of education. These innovations can be the methods and methods of organizing the educational process, the resources used in the process of education and training, scientific theories and concepts.

Innovation develops through the use of new scientific knowledge, research activities aimed at obtaining some kind of discoveries, inventions. In addition, the emergence of innovations can be the result of design work, in which instrumental and technological knowledge is developed, reflecting the possibility of practical actions on the basis of existing scientific theories and concepts. Thus, innovative projects will be created, which will subsequently lead to the emergence of new technologies.

Innovation also develops in the process of educational activity. In the educational process, the theoretical and practical knowledge of the students develops, later they can be applied in various fields related to the creation of innovations of practical life. Innovative educational technologies are based on three main components:

1. Modern, well-structured content, the basis of which is the competence in professional activity, which corresponds to the current realities of entrepreneurial activity. the content includes various multimedia materials that are transmitted through modern means of communication.
2. Application of modern, innovative teaching methods. Such methods should be aimed at developing the competences of the future specialist, attracting students to active cognitive and practical activities, demonstrating initiative in the process of cognition. Passive assimilation of training programs is excluded.

3. Availability of modern infrastructure in the educational process. It should be based on information, technological, organizational and communication components that will help to apply new forms and methods of teaching, in particular distance learning.

In education, innovative technologies are used on the basis of the use of certain approaches in teaching, i.e. innovative technologies are used in teaching. principles that include requirements and goals that are the basis for the development of new technologies.

All innovations in the pedagogical sphere are based on the strict adherence to the current stage of socio-economic development of society. At present, they should focus on the development of students' independence, the formation of self-learning and self-development abilities, the development of educational programs not mechanically, but consciously.

Innovative technologies in the field of education are constantly developing, their types are growing. The following main groups of technologies can be distinguished:

1. Information and communication technology or ICT in the field of subject study. The use of these technologies is associated with the development of the information society and the active introduction of information media in all spheres of life. Such technologies are aimed at informing the minds of students. Educational programs include new disciplines aimed at the study of informatics, information processes and ICT. To help increase the information culture of professors and teachers and students, the educational process is also actively being informed;

2. Personality-oriented technologies. These technologies are aimed at prioritizing the training and education of the individual. The entire educational process is aimed at developing the individual, taking into account the individuality and developmental characteristics of the individual.

3. Information and analytical provision of the educational process. The use of the technologies of this group is aimed at researching the development of each student, class, parallel, educational institution and assessing them adequately;

4. Development Monitoring. Technologies are based on the use of graphs, a test system, new methods of evaluation, which allow to monitor the dynamics of development of individual students and the quality of education as a whole;

5. Educational technology. It is impossible to distinguish the educational process from upbringing. Therefore, new methods of developing the personality, its main qualities are being introduced;

6. Didactic technologies. They are the main factor in the development of an educational institution. Such technologies are based on a set of techniques and tools that involve the use of traditional and innovative technologies: independent work with educational literature, the use of audiovisual, multimedia, differentiated teaching methods.

Among the student-oriented educational technologies, the following can be distinguished:

- Multi-stage educational technology. According to this technology, the construction of the educational process depending on the ability of each student to master the material, that is, each student is given time to master the program, which is exactly what he needs and meets his capabilities. Thus, the core of the training program is effectively mastered.

• Peer team learning technology. This technology involves combining students into groups of at least two people with psychological compatibility. They can have different levels of intellectual development, but they perform tasks, help each other and thereby develop each other. It helps to form logical thinking, a sense of responsibility, self-adequate self-esteem and free the students.

• Collaboration technology. This technology involves combining students into smaller teams and learning in them. Training should be carried out together, realizing the successes and failures of each other. Education is based on the determination of single goals and objectives, the compulsory responsibility of each student and the provision of equal conditions for the effective mastering of cognitive information.

Innovative technologies in education allow to regulate education and direct it in the right direction. People have always been afraid of something unknown and new, they have a negative attitude to any changes. Existing in the mass consciousness, stereotypes that affect the habitual way of life lead to painful phenomena impede the renewal of all types of education. The reason why people do not want to receive innovations in modern education is that it blocks vital needs for convenience, security and self-affirmation. Not everyone is ready to re-study the theory, take exams, change his mind, spend personal time and money. Once the update process has started, you can stop it using only special methods.

The most common ways to check the effectiveness of changes that have begun in education are:

• Method of marking documents. To assess innovation in the educational system, the possibility of voluminous introduction of innovation into the educational process is limited. A separate school, university, educational institution selected and on the basis of which an experiment is conducted.

• Piece placement method. This implies the introduction of a separate new innovative element.

Innovative behavior does not mean adaptation, it implies the formation of one's own personality, self-development. The teacher must understand that innovative education is a method of educating a harmonious person. "Ready-made templates" do not fit into it, it is important to constantly increase their level. Getting rid of the "complex" and psychological barriers, the teacher is ready to become a full-fledged participant in innovative changes.

Innovation in higher education implies a system consisting of several components:

- * Educational objectives;
- * Educational content;
- * Means of motivation and training;
- * Process participants (students, teachers);
- * Performance results.

Technology refers to two components associated with each other:

1. Organization of the activities of the student.
2. Control the learning process.

The use of modern electronic means (ICT) in the analysis of educational technologies should be emphasized. Traditional education implies overloading educational disciplines with excessive data. In innovative education, the management of the educational process is organized so that the

teacher performs the role of tutor (coach). In addition to the classic version, the student can choose distance education, saving time and money. The position of students in relation to the educational option is changing; they are increasingly choosing unconventional types of acquisition of knowledge. The priority task of innovative education is the development of analytical thinking, self-development, self-improvement. To assess the effectiveness of innovation at the highest level, the following blocks are taken into account: educational-methodical, organizational-technical. Specialists are involved in the work - specialists who can evaluate innovative programs.

In place of the conclusion, it should be noted that information and communication technologies have become commonplace in kindergartens, schools, academies, universities.

The rapid development of society dictates the need to change the technologies and methods of the educational process. Graduates of educational institutions should be prepared for changing modern trends. Therefore, it seems necessary and inevitable to introduce technologies aimed at individual approach, mobility and distance learning.

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APPROACHES TO THE DEVELOPMENT OF PHYSICAL CULTURE

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ABSTRACT

The main tasks of today are to solve the problems of preserving and strengthening the health of students and youth, physical and spiritual education of the young generation, the organization of physical training on the basis of modern new pedagogical technologies.

KEYWORDS: *Personality, Sport, Theory, Development, Physical Education, Physical Culture.*

INTRODUCTION

The development of any society is comprehensively determined by the healthy generation, as well as the potential of manpower. Therefore, First president I. A. Karimov "...the issue of bringing the spiritual and physical harmonious generation to an adult is a national, universal task for us, and I would like to reiterate that the consistent and resolute continuation of our work carried out for this noble purpose is the focus of our today's policy" he stressed, especially in the field of education. Thanks to the consistent reforms in the education system of our country, the realization of the young generation's mind, physical ability, talent, healthy and harmonious upbringing paved the way to the physical perfection of the owners of our country sooner. The goal is to bring our children's physical development and physical training closer to the level of developed countries of the world in this regard.

The solution of the problem is to educate a person who is formed on the basis of the national program adopted for the purpose of further improvement of the educational system of our country with the emergence of potential opportunities of society, to the extent that his strong, spiritual and physical potential is necessary, and this process is carried out gradually. Because the concept of restoration of civil society is inextricably linked with the development of the educational system, the design of new technologies and its introduction into pedagogical practice. At the same time, there is a need to develop a new educational system and content on the basis of modern technologies, as well as to take a new approach to the design of the educational process and organize it.

In order to achieve high efficiency of mastering in this regard, it is important to properly organize the lessons of physical education, as well as ensure the coherence of the parts of the lesson. Indeed, teachers of science will have to pay great attention to the correct Organization of physical education lessons, that is, to get the right direction from the preparatory part of the lesson to the main part. Therefore, training should be conducted on the basis of physical exercises, depending on the age, physiology of the pupils. The use of gymnastic sticks, balls, Archers in the performance of general developing exercises is important in making the lesson interesting, meaningful. The effective use of sports equipment and equipment in the course of the

lesson while the teacher attaches importance to the physical loads placed on the students in the course of the lesson will serve to better assimilation of the subject by the students. Rather than storing sports equipment and equipment in the premises, the organization of classes (it is desirable that all students are in physical motion) with the help of sports equipment and equipment, as well as with the effective use of educational technologies, increasing the activity of all students, increases the capacity and effectiveness of the lesson. The correct, effective use of sports equipment and equipment of physical education in general secondary schools on the basis of the technologies of the course transition increases the effectiveness of students' mastering. In this teacher should perfectly know the technology of passing lessons in each sport. For example: the teacher should pay attention to what he does when teaching students the technique of "running to 60 meters"; each student should be able to teach the technique of "running" by content, that is, he should develop and teach the technique of "running"(how does the reader achieve a short second at the exit from the start.

Since the training of physical education consists mainly of practical exercises, the transition to a course based on advanced pedagogical Technologies is much more complicated, but if the teacher organizes a course using some kind of techniques, then of course it can increase its effectiveness. The fact that a teacher on the subject of physical education in secondary schools works with students who have a vacancy of two times a month increases the effectiveness of physical education lessons (this should be an annual work plan and lesson developments).Below we will consider the method of increasing the effectiveness of Mastering by using active methods of training in physical education lessons, proceeding from experience:" Zig-zag " strategy method. The method serves to work with students on a group basis, quickly and thoroughly mastering the topic. The advantage of the method is that the time spent on mastering the subject is saved. In the process of applying the strategy" zigzag" ,the following actions are performed:

- Class students are divided into several (4-6) groups by nets;
- Exercises that illuminate the essence of the new subject are also appropriately assigned to each group a certain part of the subject(1-Exercise, 2 -Exercise...and etc.) and the task of studying it is assigned;
- During the specified time, the groups are working on the exercise;
- In order to save time, leaders are selected among the members of the group and demonstrates the methods of the learned exercises to classmates and provides theoretical information;
- Leaders can demonstrate practical implementation of their exercises and their opinion can be supplemented by members of the group.

After thorough mastering of the technique of the exercise, which is given to them by all groups, these groups are exchanged among themselves.

In this analogy, the method of holistic exercises that illuminate the essence of the subject is mastered by teachers. The content of physical education is organized to study the purpose, functions and principles of the system of physical education and to reveal the relationship of physical education with other types of Education.

The role of physical exercises in physical training cannot be overemphasized. It is also of particular importance in preschool children, school children, adults and the elderly. We can give an example of the following practical exercises with the game "Shooting: The purpose of the

lesson: to educate students on the qualities of strength and endurance through the game “Shooting”.

Identive educational objectives:

1. Will have an understanding of the rule of the game;
2. Will be able to participate in the game;
3. Will be able to organize the game.

Necessary equipment: A rectangle with a size of 6x10 meters.

Order of execution of work:

- 1) Give a description to the game
- 2) Performing all muscle-building exercises
- 3) Organization and conduct of the game
- 4) Bring the organism to the foreground and give assignments.

Game classification; the game can be played on a sports ground, in a gym or on a meadow. On the floor draw a rectangle with a size of 6x10 meters. Players are divided into two groups. The players of one of them “frogs” stand inside the rectangle, and the players of the second group stand outside the rectangle. All players sit in the crunch. With the gesture of the head of the game, the “Frogs” inside are crumbling, with their hands holding their ears knowing that they will jump to the side of the opposing group. As they approach the opposing team players, a fight begins between the two groups of players to pull each other to their side. The game is completed depending on the number of players who have been pulled inside or out. Rules of the game

1. The player can jump with the sign of the leader as long as the opposing group is sitting on the side with a crunch.
2. Players will be able to help each other in pulling their opponents to their side.
3. It is impossible to get up when shooting one at another. The game is interrupted after one of the teams has pulled most of the players from the second group to their side.

Methodical instructions: This game can be recommended to students of I, II-stage. The main action in the game is to jump and jump in a crumbling state that it is necessary to pay serious attention to the .fact that despite the fact that the games are diverse and on this occasion are divided into categories, each serves to develop a certain spiritual and personality qualities and characteristics. The games are aimed at absorbing the children's consciousness through imitation, pattern, exercise, reflecting the ethno psychological features of a particular nation.

Based on these fundamentals, we recommend similar games to future physical education teachers (students) for learning and for their application in the practice process. Games can be divided into the following categories:

- Educational, software, role-playing games;
- Games that develop intelligence;
- Games that focus on ingenuity and sensitivity;
- Games that shape feelings and empathy experiences;

- games with content of will qualities, etc;

Each separated game category covers dozens of different featured simple and role-playing games that include and apply for the purpose of forming a child's personality in accordance with age characteristics. For the students of higher education institutions, physical exercises should not only be traditional, but also be in a relaxed, unconventional form and content. This ensures that the actions that students perform are free and reliable. In conclusion, it is worth noting that the use of interactive methods of education in the educational process leads to an increase in the activity of students, the formation of skills of a creative approach to the acquisition of knowledge, contributes to the emergence of their abilities and opportunities, the formation of skills of working with the team, the discussion of various situations in, it helps to formulate the skills of moving into new situations.

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PEDAGOGICAL TECHNOLOGIES AND ITS VIEWS

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ABSTRACT

The article describes the activities of the organization of events and descriptions in a technological way in the educational process and their implementation in relation to the lives of students. In particular, the importance of pedagogical technology in the educational process, the psychological and pedagogical guidelines that determine the methods, ways, means, selection and placement of educational tools.

KEYWORDS: *Pedagogical Technology, Descriptions, Ways, Methods, Pedagogical Process, Technological Process, Teaching, Education, Events, Methodical-Technological, Collective.*

INTRODUCTION

With the introduction of the term "technology" in pedagogical activity, pedagogical practice, its theoretical aspects and comments about them are expected to reach a higher level.

Pedagogical technology is a product of modern didactics and pedagogical development. With the help of technology structures, effective results are achieved in the acquisition of knowledge, skills and abilities of students in one or more aspects of educational work. In the pedagogical process, technology is manifested inseparably from its general methodology, goals and content. Technology is an organizational, methodological tool (tool) of the pedagogical process, which is clearly implemented in technological processes. The technological process consists of a certain system of technological units aimed at achieving a certain pedagogical result.

MAIN PART

Pedagogical processes are the subject of technology, specific practical phenomena of any type of teacher and student activity, organized on the basis of careful structuring, systematization, programming, algorithmization, standardization of teaching and learning methods and techniques, using computerization and technical means.

To date, dozens of author's methods and technologies have been presented, and pedagogical educational descriptions have not been singled out. Technological generalized system of forms of pedagogical interaction can be used in educational work, including: primary collective, problematic social situation, choice of methods of interaction with students. The classification of technological phenomena consists in the purposeful selection of interactive forms of teaching and education, which form a systematic knowledge, skills and abilities, personality traits, qualities and habits of the pupil.

Pedagogical technology is manifested in different forms as a result of the formation and development of interaction with different spheres of social life:

1. Social phenomenon;
2. Theoretical science;
3. Academic Science;
4. Education system;
5. The educational process.

Motives related to educational issues **as a social phenomenon of pedagogical technology**; needs, demands, interests, interests, goals and serve to achieve them. Fulfillment of this condition, in turn, depends on the high level of pedagogical technology. Pedagogical technologies are divided into types of continuing education, areas of education and some characteristics. According to the types of continuing education, preschool education, primary education, basic education, extracurricular education, secondary special, vocational education, higher education, retraining and advanced training are divided into pedagogical technologies. At the same time, there are native languages, foreign languages, literature, social, natural, exact sciences, arts, sports, engineering, technology, applied sciences, professions, special education pedagogical technologies.

Pedagogical technology as a theoretical science is a separate branch of pedagogical science. It has its own goals, objectives, problems, methodology and other theoretical foundations.

Pedagogical technology as a theoretical science is a separate branch of pedagogical science. It has its own goals, objectives, problems, methodology and other theoretical foundations. It has to do with many other disciplines in solving its own problems.

Teaching of pedagogical technologies as a subject of pedagogical technology is based on the curriculum defined in various educational institutions as a social phenomenon, theoretical science, educational system, process, pedagogical activity and its methods, as a research field of related sciences.

of the education system , pedagogical technology consists of material and spiritual values that serve to carry out certain educational activities. This includes curricula, programs and didactic tools. This system differs from other systems in that it is operated by specially trained specialists.

Pedagogical technology as an educational process is realized through the activities of its participants. The purpose of this process is to form and develop a harmoniously developed person, which mainly consists of:

- Education to give;
- Information from generation to generation transfer;

- Teaching independent thinking;
- Training and mastering of knowledge, skills and abilities;
- Different methods of application and improvement;
- Diagnostics, monitoring;
- Based on humanism, nationalism, ideological principles;
- To take into account the level of preparation, psychological, physiological, age characteristics, requirements of the student;
- Taking into account the requirements and conclusions of educational management, marketing, social motives.

Currently available pedagogical technologies are divided into types depending on several characteristics. Before talking about these signs, it should be noted that pedagogical technology is always complex, it does not use only one factor, method, principle. That is, monotechnologies that are unique to the species listed below do not actually exist. But in each pedagogical technology, as a result of the focus on one or another aspect of the educational process, they are divided into types according to these characteristics.

✚ To know activities management pedagogical technologies on Types:

- Classical lecture;
- Technical means using training;
- Consulting system;
- Textbook on training;
- Small groups system;
- Computer using teaching;
- Tutoring system;
- Programmable management

✚ Education to the recipient pedagogical technologies by type of approach as follows is called:

- Authoritarian;
- Didactic oriented;
- Social focused;
- Anthropological focused;
- Pedagogically oriented;
- To the person focused;
- Humanitarian focused;
- Cooperation technology focused;
- Free upbringing focused;

- Esoteric education and upbringing focused.
- ✚ Applicable pedagogical technologies on the main method the following species are divided into:
 - Dogmatic, reproductive method;
 - Explanatory, visual;
 - Developer education;
 - Problematic, exploratory;
 - Creative method;
 - Programmed education methods;
 - Dialog method;
 - Game methods;
 - Self developer education methods;
 - Information (computer) education methods.

✚ Organizational forms according to pedagogical technology following species is divided into:

Current traditional education;

- To the person focused pedagogical process based on pedagogical technologies;
- Students activities activation and acceleration based on pedagogical technologies;
- Training process management and formed to do efficiency based on pedagogical technologies;
- Didactic improvement of the material and reconstruction based pedagogical technologies;
- Private pedagogical technologies of sciences;
- Alternative technologies;
- To nature customized technologies;
- Developer education technologies;
- Copyright pedagogical technologies of schools;
- Technology design and assimilation technologies.

From this except of the person feature and qualities content orientation pedagogical technologies on the following species are divided into:

- Fans on knowledge, skills to form focused - information technologies;
- Mental activity methods to form focused - operational technologies;
- Aesthetic and moral relationship field to form focused emotional-artistic and emotional moral technologies;
- Of the person self development mechanisms to form focused self development technologies;
- Creative abilities to develop focused - heuristic technologies;

- Practical activity field to develop focused practical technology.
- ✚ Pedagogical technologies symptoms according to the following cha classification will be done:
Apply level according to;
Philosophical on the basis of according to;
Basic developer factor on;
Assimilation concept on;
Personal characteristics _ according to orientation on;
Content properties on;
Management type on;
Bolaga approach on;
A lot used methods on;
Education recipients' categories on;

CONCLUSION

Based on these classifications, we can take the current traditional school education system as an example. In particular: General pedagogical, general compulsory education, sociogenic, biogenic, associative, personal characteristics and qualities, the organization of education in the secular system of general education, classical, ie classical, authoritarian and widely used methods.

In addition to the above, there are other areas of pedagogical technology, which are currently being tested by relevant specialists.

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TRADITIONAL AND NON-TRADITIONAL SOURCES OF ENERGY

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ABSTRACT

The article focuses on the prospects for the use of traditional and non-traditional energy sources used for consumption in our country, the large-scale practical work in this area, including the introduction of renewable energy and its efficient use.

KEYWORDS: *Alternative Energy, Conventional Energy Sources, Solar Complex, Ecological System, Energy Saving Resource Devices.*

INTRODUCTION

At the current level of scientific and technological development, energy consumption can be offset by the use of fossil fuels (coal, oil, gas). The results of many studies show that by 2020, fossil fuels will only partially meet global energy demand. The rest of the energy demand will be met by unconventional and newly generated other energy sources. Other energy sources that are newly formed are energy flows that are constantly present or that occur periodically in the environment. The fact that the new energy is not the product of human activity is its difference.

New non-renewable energy sources are natural reserves of matter and materials that can be used by humans to produce energy. Examples of such power sources are nuclear fuel, coal, oil and gas. Unlike newly formed sources, new non-generated power sources are located in an interconnected state in nature and are isolated as a result of human intervention.

New sources include solar energy, wind energy, (rivers) hydropower, currents, waves, energy from the deeper layers of the earth. New non-renewable energy sources account for 90% of the country's heat balance, including 30% oil, 40% gas and 20% coal. All fossil fuels (oil, gas, coal, etc.) are the appearance of solar energy that has passed through various stages, re-formed and reached us millions of years later, and is in danger of running out and becoming more expensive.

According to UN General Assembly Resolution 333/148, unconventional and renewable energy sources include: solar, wind, geothermal, ocean waves, ocean and coastal energy biomass, wood, coal, peat, shale, bituminous sands, hydropower of large and small watercourses.

The potential capacity of non-conventional and newly generated power sources is estimated at 1 billion tons per year. t.u.t .:

- Solar energy 2300;
- Wind energy 26.7;
- Biomass energy 10;
- Ground temperature 40,000;
- Energy of small rivers 360;
- Marine and ocean energy 30;
- The energy of small potential secondary power sources is 30.

The objectives of the strategic objectives of the use of new energy sources and local fuels are:

- Reduction of consumption of new non-renewable fuels and energy resources;
- Reduction of environmental load from the fuel and energy complex;
- Forecasting of long-term and seasonal fuel supply areas and consumers;
- Reduction of long-distance fuel traffic;
- Solving the following problems - requires the development of new energy sources:
 - Establishment of sustainable electricity and heat supply to the population and decentralized energy supply in the regions;
 - guaranteeing the minimum energy supply of the population and production in the centralized energy supply zones, elimination of energy shortages, elimination of deficiencies resulting from accidents and power outages;
 - Reduction of harmful emissions from energy equipment in settlements and cities with complex environmental conditions, as well as in public recreation areas.

Currently, the interest of regional and local administrations in non-conventional energy is growing.

The use of new energy sources, in particular solar energy, has gained significant momentum, and sustainable growth rates are accelerating.

Of course, today it is difficult to predict the thermal energy of buildings without the use of natural resources. First and foremost, new non-renewable energy carriers can help reduce consumption by 1/5, reduce the likelihood of expected environmental damage, and most importantly, help homeowners reduce their home costs.

Many problems will be solved when the energy estimation of buildings is replaced in whole or in part by newly generated energy resources. Residential buildings should be equipped with ecological systems for heating (or cooling), hot water supply. Of course, the cost of solar system equipment and its study is extremely high today. But given the fact that sunlight is free, that is, the cost of non-generating energy carriers will rise sharply, in 2-3 years the equipment for solar processing will pay for itself and can be used until it is completely out of order.

Given the prospects of development in this area, it can be predicted that by 2030 there will be highly efficient solar systems, and their payback period will be 1 year. Equipment prices are still much lower than they were 10 years ago.

Such a result can be achieved when different construction methods using new generated energy sources are used in the construction of a new building or in the reconstruction of an existing building.

In the 60s and 70s, the first steps were taken in the CIS countries to use non-conventional energy sources. During this period, autonomous energy predictive phytoelectric devices emerged and proved themselves well in space. By the end of the 1980s, solar devices were launched to provide hot water to an area with a total area of 150,000 m², while the production of solar collectors amounted to 80,000 m² per year. As a result of economic difficulties in the 1990s, the development of non-conventional energy in our country was halted. But today the use of non-conventional forms of energy is becoming more widespread all over the world and in our country.

The environmental situation requires architects and builders to think anew. Modern energy is becoming more traditional today, depending on the energy carrier, and has a negative impact on the environment in the energy supply of buildings and cities in general.

It is known that solar energy is mainly used for low-power utility hot water supply and heating. Low-power heat production around the world will reach $5 * 10^6$ Gcal in the near future. Phytoelectric devices have a global total capacity of 500 MW.

The International Renewable Energy Agency (IRENA) has been established, and today 164 countries around the world have adopted special documents aimed at developing this type of energy. The strategy of these countries sets a goal to increase the use of QTEM to 50% by 2030.

According to the International Energy Agency (IEA), solar and wind power generation has doubled in 2018 as demand for all types of fuels has increased. For example, energy from the sun alone has increased by 31 percent. However, about 33 gigatons of CO₂ were released into the atmosphere last year.

According to experts, at the same time energy consumption has exceeded production. Therefore, it is time to put innovative methods into practice. Global demand for electricity is projected to increase by 5 percent by 2030 compared to the beginning of the century.

The main device of the Scientific-Production Association "Physics-Sun", located in Parkent district of Tashkent region, is a large solar box. It has a heat output of one thousand kilowatts.

Mineral resources such as coal, natural gas, oil and uranium are the basis of energy. However, these reserves are declining from year to year. The development of renewable and new energy sources will allow future generations to conserve natural resources and improve the environment.

The potential of renewable energy sources in Uzbekistan is 51 billion tons of oil equivalent. The technical capacity is 182.32 million tons of oil equivalent. This is three times the country's current annual primary energy reserves. Today, only 0.31% of this potential has been used.

The law "On the use of renewable energy sources", adopted by the Legislative Chamber on April 16, 2019, approved by the Senate on May 3 this year and signed by the President, came into force on May 22 this year.

This law serves to increase energy efficiency in the economy and social spheres, to ensure the country's energy security, as well as to expand the use of renewable energy sources and to regulate the relevant regulations in this area. In addition, this document is a solution to a wide range of issues, such as forecasting energy stability in all areas, increasing the level of diversification of fuel and energy balance and creating a favorable business environment in this regard.

The law provides benefits and preferences to renewable energy producers and consumers. In particular, QTEM will be exempt from property tax on energy production equipment, land tax on plots where this equipment is installed, value-added tax on energy sold by enterprises of Uzbekhydroenergo for a period of 10 years.

The equipment manufacturer is exempt from all taxes for a period of 5 years from the date of state registration. By law, persons using alternative energy sources with complete disconnection from the energy network of residential buildings are exempt from property and land taxes of individuals for a period of three years from the month in which they began to use alternative energy sources. According to the document, electricity and thermal energy from renewable energy sources for their own needs, as well as permits for the production of biogas and biomass are not required.

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A REVIEW OF THE WORLD FOOD INDUSTRY

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ABSTRACT

There is produced annually enormous volume of food worldwide. The world food industry is the huge sector of world economy. This market employs about more than 22 million people and it is expected to grow. There is given some observations and research data about world food market.

KEYWORDS: *Food, Food Industry, World Food Industry, Revenue, Quality Of Life, Beverages, Employment, GDP.*

INTRODUCTION

Industry is the production of goods, which plays a key role in the development of the economic situation of the state. The establishment of the industrial sector contributes to the development of society, improving the quality of life of the population, increasing the education of citizens. In the modern world, the industrial sector employs more than five hundred million people. For several decades, the geography of production activities has expanded significantly, some areas have now fifty or more times bigger .

The light and food industries of the world started to function many centuries ago. The impetus was the first industrial revolutions. Now these sectors of the economy are considered one of the old industries.

Here some statistics about the world food statistics.

- Revenue in the Food market amounts to US\$8,773,679m in 2022. The market is expected to grow annually by 4.79% (CAGR 2022-2027).
- The market's largest segment is the segment Confectionery & Snacks with a market volume of US\$1,529,583m in 2022.
- In global comparison, most revenue is generated in China (US\$1,298,561m in 2022).
- In relation to total population figures, per person revenues of US\$1,152.54 are generated in 2022.
- In the Food market, 7.8% of total revenue will be generated through online sales by 2022.
- In the Food market, volume is expected to amount to 2,925,065.1mkg by 2027. The Food market is expected to show a volume growth of 3.1% in 2023.
- The average volume per person in the Food market is expected to amount to 337.8kg in 2022.¹

Each country produces food for the domestic market. Most states have a certain food product that is a calling card. It is exported and sold domestically. Examples include fish from Norway or olive oil from Spain. Consider the main areas of food products:

1. Fishing, processing of fish and seafood. Almost one hundred and seventy million tons of marine inhabitants are mined every year in the world. These are crayfish, mollusks, fish, shrimps and other inhabitants of the oceans. Most of the catch comes from the Pacific Ocean. Most fish are caught and processed in the USA, China, and Indonesia. This industry is also developed in India. The most common are mackerel, sea pike, cod, herring, various types of red fish.
2. Production of sugar. The main raw material base for this direction is sugar cane and sugar beet. Many countries use mainly cane, Europe prefers beets. One hundred and eighty million tons of sugar is produced annually in the world. The largest volumes are supplied by Brazil, China, Thailand, and India.
3. Production of oils and fats. Each country produces a certain class of products. There is a large-scale production of peanut, palm, soy, olive and other oils. Among the leaders in general, one can single out Russia, Italy, Ukraine, and China.
4. Sphere of dairy production. States produce butter, cheese, milk, and other dairy-based foods. The volume of milk produced annually reaches eight hundred million tons. If we consider the regional structure, the leadership goes to Asian countries. The United States is making a significant contribution. Modern manufacturers prefer to make more cheese than butter. Here the first places belong to France, Germany, the United States of America.
5. Meat production. Asia is the leader in the production of meat products. Second place is shared by South America and North America. In third place is Europe. The decline in meat production in Europe is explained by the refusal of many citizens from meat. People yearn for healthy food. More than three hundred million tons of meat products are produced annually in the world. The leaders are China, the United States of America, Brazil.²

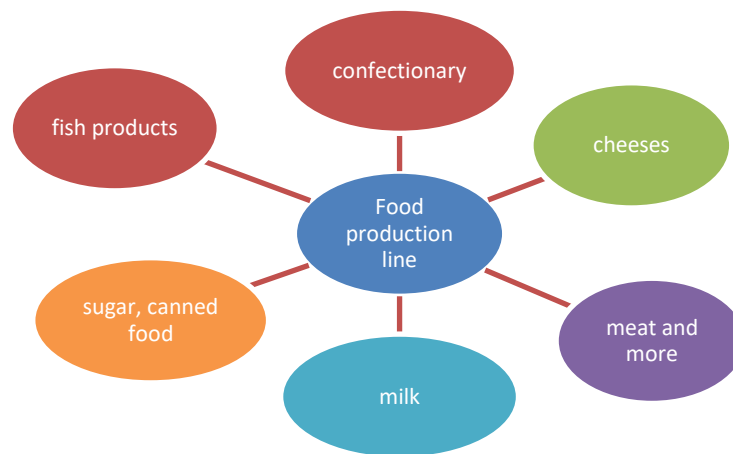


Fig.1. Food industry in Europe

The food sector in Europe consists of a number of areas. Enterprises, farms produce finished products or semi-finished products. Recently, the dependence between the agricultural sector and the food industry has decreased in European countries. This is due to the partial replacement of natural products with modern additives. Nevertheless, agriculture plays a critical role in food

production. In various European countries, this direction is represented by enterprises that produce the following products:

- Confectionery;
- Cheeses;
- Fish products;
- Sugar, canned food;
- Milk;
- Meat and more.

Conventionally, all branches of the food industry are divided into two classes:

1. Class based on raw materials - oil, cereals, fish, canned food.
2. Goods prepared on the basis of processed raw materials - bread, pasta, cookies. In Europe, the main attention is paid to the food industry in large cities. Residents are the main consumers; there are always points of sale and convenient transport interchange.

Managing a restaurant is more than just serving food. It also involves knowing how much the food industry is worth and the food industry's market size. With a good overview of everything happening in your business, you can plan well and execute right.

- Before the pandemic, more than one million restaurants were operating in the United States. After the novel coronavirus hit, 110,000 dining and drinking venues closed down temporarily—or for good—as of Dec. 1, 2020. (Biz New Orleans, 2021)
- Restaurant sales dropped \$240 billion in 2020. Previous projections hit \$899 billion. (Biz New Orleans, 2021)
- Over 200 million US consumers went to a sit-down restaurant in 2018. (Statista, 2021)
- 65% of restaurant guests like to control how much they tip, rather than adopt the tip-free movement. (7Shifts)
- 13% of consumers are brand loyal to their preferred restaurants. (Facebook, 2019)
- People in Alaska spend the most money on dining out, as they shell out an average of \$3,572 per year. (Business Insider, 2019)
- 60% of restaurants that offer delivery generated incremental sales. (RestaurantBusiness)
- The average American household spends an average of \$3,008 per year dining out. (CNBC)
- 39% of adults are not eating out at restaurants as often as they would like. (NetWaiter, 2020)
- 72% of diners prioritize the quality of food above other conditions when choosing a restaurant to dine in. (Net Waiter, 2020)
- With the cannabidiol or CBD industry flourishing, the restaurant industry is also exploring its creative uses in food and drink. Indeed, 75% of chefs said that CBD-infused drinks are trending in the sector. (NetWaiter, 2020)
- Gen Zers make up 10% of foodservice traffic. (Meat+Poultry, 2019)

- 5% of operators opened virtual or ghost kitchens since the start of the pandemic. (Nation's Restaurant News, 2021)
- Nearly 64% of consumers would still prefer going to a restaurant over delivery and ordering via Smartphone or tablet. (Nation's Restaurant News, 2021)³

Impact on employment and working conditions

The food and drink industry is a major source of employment worldwide. As a leading manufacturing sector, food and drink processing in 2019 accounted for 4 per cent of world GDP and employed 22 million people.⁴ The food system employs the most people in many developing countries in both self and wage employment, and will continue to do so during the time period set to achieve the Sustainable Development Goals, and thereafter. Self and wage employment in farming still generates a large share of rural incomes and can have large poverty-reducing effects.

The food system extends beyond farm production to include activities along value chains, such as food processing, transportation, retailing, restaurants, and other services. In many countries, the off-farm aspect of the food system accounts for a large share of the economy's manufacturing and services sectors. While the employment share in farming tends to decline as per capita incomes rise, the share in food manufacturing and services tends to increase.

- Increasing the number and inclusiveness of jobs will require attention to food system growth, employment intensity, and inclusion of youth and women. Urbanization and per capita income growth offers significant new opportunities in non-cereal products and in new jobs in the food system beyond the farm. Inclusion of women and the growing number of youth into food system jobs can raise productivity and improve social harmony.
- Improving the quality of jobs in the food system requires attention to raising returns to labor, increasing stability in earnings, and improving working conditions.
- Priorities vary by country context. Different combinations of interventions will be needed in agriculture-dependent economies relative to transforming or urbanized economies; in lagging relative to leading regions; in land abundant relative to land scarce environments; whether “pull” or “push” factors are leading to movement of people out of farming in particular areas; and on the initial nature of skills deficits.



Fig.2. Revenue of the worldwide food market between 2014 to 2027, in trln USD.

In 2021, the global food market generated around 8.27 trillion U.S. dollars in revenue, an increase of over 500 billion U.S. dollars since the previous year. The Statista Consumer Outlook estimates that food revenue worldwide will continue to increase over the next years and reach around 11.1 trillion U.S. dollars in 2027.⁵

Modernize food safety regulations and oversight.

A modern set of food safety laws, regulations, and compliance enforcement mechanisms is critical to protect consumers, develop local food markets, and facilitate trade. Food laws should lay out responsibilities of different agencies within the government, and of the private sector in the event of an emergency, core principles for ensuring safe food, and the penalties for infractions. These laws need to be supplemented by a range of regulations that provide implementation guidance for inspectors and for private operators; and specific rules on cross-cutting issues, such as additives, chemical contaminants, and packaging, or in relation to certain types of products, such as fortified and organic foods. Food safety regulatory reforms are trending toward emphasizing preventive measures and promoting behavioral changes and away from resorting to end-product compliance enforcement. Although national standards are trending toward equivalence with CODEX and other established international standards, challenges remain around small enterprises that cannot pay the high compliance costs and ensuring that such costs do not position high-nutrient foods out of reach for poor consumers.

Food regulatory provisions are more refined in these countries, reflecting both scientific advancement and strong corporate interests from large food companies. Food safety responsibility is placed largely on the private sector—with performance and compliance motivated by technical, professional, commercial (such as brand reputation) and legal/regulatory factors. Labeling and other transparency measures are important tools to help consumers make their food choices. Restricting specific dietary factors (for example, trans fat) can improve food nutrient content. Reducing subsidies biased to processed foods relative to fresh foods can change relative prices and influence dietary choice. Seeking and supporting consumer engagement in regulatory and program development processes can help to identify food-related problems and

solutions, and ensure the development of competitive and safe food systems. Restricting advertising of non-nutritious/ unhealthy food and beverages, especially to children, is another important tool in the fight against obesity.

CONCLUSION

The human and economic costs of malnutrition and foodborne diseases are large and disproportionately impact poor people. Child stunting is unconscionably high. Concerted multisectoral actions are needed to combat malnutrition in all its forms. The urgency is reflected in the Sustainable Development Goals with their call to end hunger by 2030. The food system provides energy and nutrients that people require to advance economically and socially. It has a key role to play in global efforts to improve nutrition and health. Our food system must shift from being part of the problem to becoming a greater part of the solution. The world needs a food system that can feed every person, every day, everywhere with a safe, nutritious, and affordable diet. Progress will require behavioral change by all actors from food producers to consumers. The paper outlines the spectrum of actions that countries can take in the food system to improve nutrition and health through a combination of improved knowledge, sound policies, regulation, and investments. There are many tested solutions, but no one size fits all. Countries need to tailor the combination and form of interventions to their own circumstances. Doing so will require leadership, a greater focus on the needs of women, more collaboration between institutions and sectors, learning and innovation, and broad partnerships. Working together we can help shape the global food system to deliver improved nutrition and health for the benefit of both current and future generations.

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PZR WITH THE HELP OF MARKERS IN THE COTTON PLANT DNA

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ABSTRACT

This article provides information on the mechanism of polymer chain reaction in plant DNK using markers. In addition, we provide detailed information on the sequence of PZR analysis using DNK samples and markers, and the examination of DNK samples by electrophoresis.

KEYWORDS: PZR, DNA, Amplification, Plant, Genotype, Agarose, Electrophoresis, Particle, Charge, Microsatellite.

INTRODUCTION

Mechanism of polymerase chain reaction

The polymerase chain reaction is a method used to increase the amount of DNK samples and test them with markers, and this method is now widely used around the world.

The polymerase chain reaction is based on the denaturation and polymerization of DNK, in which the main stages of PCR are carried out by raising and lowering the temperature.

The advantage of PZR is that the equipment required to perform PZR analysis is relatively inexpensive and requires very little space [1].

Polymerase chain reaction

The polymerase chain reaction is performed after the genome DNK isolated from each sample has been examined in 0.9% agarose gel by electrophoresis. SSR markers were selected from the library of microsatellite markers for genotyping. SSR primer pairs are obtained from International DNK Technologies (IDT, USA).

The PZR reaction (Hot-start program) was performed in a volume of 10 µl in the following order.

10 x PZR buffer (magnesium chloride)	1 mkl
BZA	0.2 mkl
dNTP mixture 25 mM (dATP, dGTP, dTTP, and dCTP)	0.1 mkl

Properly directed primer	0.5 mkl
Reverse primer	0.5 mkl
TAQ polymerase -5 birl./mkl	0.2 mkl
Genome DNK	1 mkl
Distilled water	6.5 mkl

We perform amplification in a 45-cycle Hot-start program at the following temperature modes;

The first denaturation	95 °C	3 minutes
Denaturation	94 °C	1 minutes
Melting point of primers	±50 °C	1 minutes
Elongation	72°C	2 minutes
Closing elongation	72°C	5 minutes

I carry verification of the polymorphism of microsatellite amplification of the finished PCR product out in a 3.5% Hi-Res agarose gel at a voltage of 0.5 x TVE under a voltage of 6 v / cm in 0.5 x TVE buffer using the above electrophoresis method. Inc., USA).

Electrophoresis process.

Biologically large molecules are proteins, nucleic acids, and polysaccharides as liquid particles that correspond in shape to colloidal particles. They have a certain electric charge because they have groups that have electrolytic decomposition properties. As nucleic acids, their charges are because of the dissociation of phosphorus groups. Therefore, DNK is negatively charged in a neutral and alkaline environment.

The interaction of charged particles with the cathode or anode under the action of an electric field depends on the sign of the total charged particles (+, -). This phenomenon is called electrophoresis. Electrophoresis motion occurs because of the influence of the electric field on the velocity of particles (cm / s), 1v / cm. Its size is 2 cm c-1 v-1, and the sign a corresponds to the sign of the total charged particles. The difference in the motion of the particles serves to separate the compounds for analytical or preparative purposes. Electrophoresis motion detection is also used to determine the characteristics of substances.

During electrophoresis, the velocity of the particles being analyzed is determined by observing the movement of the dye.

Electrophoresis devices of different types should be placed between 2 electronic containers and the backing device (paper, starch, agarose and acrylamide gel) as far as possible between the two containers. Plate wires are usually used as electrodes [2].

PZR analysis using DNK samples and markers

We performed PZR experiments with DNK samples isolated from Namangan-77 and Tashkent-6 varieties and 10 primers with SSR markers.

In the control variant, DNK samples of Namangan-77 and Tashkent-6 varieties and 10 primers were amplified in a separate PZR amplifier for 45 cycles in the following PCR temperature scheme [3].

The first denaturation	95 °C	3 minutes
Denaturation	94 °C	1 minutes
Melting point of primers		
BNL-1721	53 °C	1 minutes
BNL-2646	55 °C	1 minutes
JESPR-232	58 °C	1 minutes
JESPR-252	56 °C	1 minutes
NAU-1042	60 °C	1 minutes
NAU-2119	56 °C	1 minutes
NAU-2679	58 °C	1 minutes
NAU-2687	59 °C	1 minutes
NAU-3519	55 °C	1 minutes
TMB-1660	57 °C	1 minutes
Elongation	72°C	2minutes
Closing elongation	72°C	5minutes

In this process, over 3 hours was spent on PZR with 1 primer for 2 cotton varieties.

In the experimental variant, DNK samples of Namangan-77 and Tashkent-6 varieties and 10 primers were performed in the following PZR temperature scheme.

The first denaturation	95 °C	3 minutes
Denaturation	94 °C	1 minutes
Melting point of primers	62 °C	
	20 cycle	50 second
	55 °C	
	15 cycle	50 second
Elongation	72°C	2 minutes
Closing elongation	72°C	5 minutes

In this process, they spent less than 3 hours on PZR with 10 primers for 2 cotton varieties.

Examination of DNK samples by electrophoresis.

DNK electrophoresis in agarose gel is a standard method used for the purification and identification of DNK fragments.

I widely used the method of electrophoresis of DNK on horizontal agarose gel plates in molecular genetics and biochemistry. Because the reagents of this method are easy to find, the simplicity of the method and the low cost of the equipment are because they can get very little information from tiny amounts of untreated material.

Therefore, in our experiments, we used the method of electrophoresis on horizontal agarose gel plates [2].

The product of PZR amplification was isolated from the plants and primed by electrophoresis in 3.5% agarose gel. We stained the electrophoresis gel using Etidium Bromide and photographed it on UV Tran illuminator (Innotech Inc., USA). When PCR amplification was performed using a modified scheme with a standard scheme, it was found that successful DNA amplification occurred in both schemes and there was no difference between them.

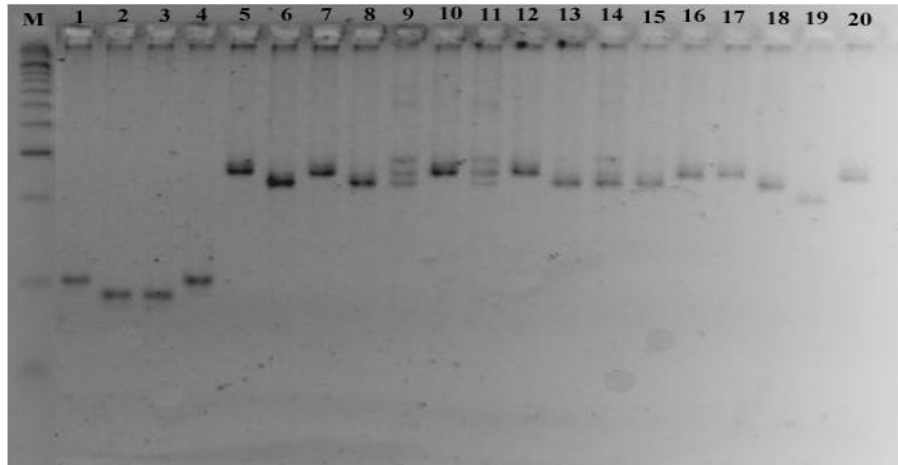


Image of electrophoresis gel of PZR product formed from the modified scheme of PZR amplification.

Optimization of PZR in plant DNK DNK markers, their types, mechanism of polymerase chain reaction, method of its implementation and methods of testing DNK samples and PZR products by agarose gelelectrophoresis play an important role in the study of modern molecular genetics.

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