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PRESSURE DISTRIBUTION ON THE SURFACES OF THE NACA 0012 AIRFOIL UNDER CONDITIONS OF CHANGING THE ANGLE OF ATTACK

Abstract: *The results of computer calculation of changing pressure of air flows on the surfaces of the NACA 0012 airfoil under conditions of subsonic flight speed of the aircraft are presented in the article. The formation of zones of positive and negative pressure near the upper and lower surfaces of the wing (lift), which provide takeoff or landing of the aircraft, occurs when changing the angle of attack of the airfoil in the range from 15 to -15 degrees. The maximum pressure values were determined at the leading and trailing edges of the airfoil. The calculated pressure values will be valid when air flows around the symmetrical airfoil.*

Key words: *the airfoil, the angle of attack, pressure, subsonic flight speed.*
Language: *English*
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Introduction

The aircraft is an engineering construction designed for flying over various distances in the atmosphere. The geometric shape of the wing should provide the necessary lift, which allows you to support the aircraft in air [1-2]. Ellipsoidal airfoils have the best aerodynamic qualities. The aerodynamic qualities of the wing are determined by the results of experimental studies and computer calculations [3].

The airfoil in the cross section is characterized by the chord, relative thickness and relative curvature [4-5]. The NACA 0012 (the US National Advisory Committee for Aeronautics) symmetrical airfoil has no relative curvature. The maximum thickness corresponds to 12% of the chord length of the wing. This airfoil is used in conditions of subsonic flight speed of the aircraft [6-7].

Studies of the aerodynamic characteristics of the airfoils were carried out in the number of works [8-10]. In particular, a new method for reducing interference on the walls of the NACA 0012 airfoil was proposed, which is the combination of perforated plates and the controlled boundary layer. The results of the experiments were confirmed by the results of numerical modeling. The solution to the problem of low-speed flow around the airfoils with strongly separated stream was proposed by Zumwalt, G. W. The author has developed a special program that animates the process. Based on the k-ω turbulence model, two modified models are presented, designed to obtain the results similar to the results of the Wilcox's original k-ω model, but without its strong dependence on the arbitrary values of free flow and taking into account the transfer of main shear stress in the boundary layers with an unfavorable pressure gradient.

In this article, for the NACA 0012 standard airfoil at the different angles of attack, the calculation of changing air flow pressure on the various surfaces of the aircraft wing was performed. This will allow you to determine the value of frontal drag and lift of the wing during takeoff and landing of the aircraft.

Materials and methods

The stationary process of flow around the airfoil of the aircraft wing with air streams at constant speed was implemented in the two-dimensional formulation in the Comsol Multiphysics program. The NACA 0012 symmetrical airfoil was adopted for the study. The cross section of the NACA 0012 airfoil and its geometric characteristics along the coordinate axes are presented in the Fig. 1 and in the table 1.

Figure 1 – The cross section of the NACA 0012 airfoil.

Table 1. The geometric characteristics of the NACA 0012 airfoil.

X, mm	0.00000	0.05839	0.23342	0.52468	0.93149	1.45291	2.08771	2.83441	3.69127	4.65628
Y_u, mm	0.00000	0.42603	0.84289	1.25011	1.64706	2.03300	2.40706	2.76827	3.11559	3.44792
Y_l, mm	0.00000	-0.42603	-0.84289	-1.25011	-1.64706	-2.03300	-2.40706	-2.76827	-3.11559	-3.44792
X, mm	5.72720	6.90152	8.17649	9.54915	11.01628	12.57446	14.22005	15.94921	17.75789	19.64187
Y_u, mm	3.76414	4.06310	4.34371	4.60489	4.84567	5.06513	5.26251	5.43715	5.58856	5.71640
Y_l, mm	-3.76414	-4.06310	-4.34371	-4.60489	-4.84567	-5.06513	-5.26251	-5.43715	-5.58856	-5.71640
X, mm	21.59676	23.61799	25.70083	27.84042	30.03177	32.26976	34.54915	36.86463	39.21079	41.58215
Y_u, mm	5.82048	5.90081	5.95755	5.99102	6.00172	5.99028	5.95747	5.90419	5.83145	5.74033
Y_l, mm	-5.82048	-5.90081	-5.95755	-5.99102	-6.00172	-5.99028	-5.95747	-5.90419	-5.83145	-5.74033
X, mm	43.97317	46.37826	48.79181	51.20819	53.62174	56.02683	58.41786	60.78921	63.13537	65.45085
Y_u, mm	5.63200	5.50769	5.36866	5.21620	5.05161	4.87619	4.69124	4.49802	4.29778	4.09174
Y_l, mm	-5.63200	-5.50769	-5.36866	-5.21620	-5.05161	-4.87619	-4.69124	-4.49802	-4.29778	-4.09174
X, mm	67.73025	69.96823	72.15958	74.29917	76.38202	78.40324	80.35813	82.24211	84.05079	85.77995
Y_u, mm	3.88109	3.66700	3.45058	3.23294	3.01515	2.79828	2.58337	2.37142	2.16347	1.96051
Y_l, mm	-3.88109	-3.66700	-3.45058	-3.23294	-3.01515	-2.79828	-2.58337	-2.37142	-2.16347	-1.96051
X, mm	87.42554	88.98372	90.45085	91.82351	93.09849	94.27280	95.34372	96.30873	97.16559	97.91229
Y_u, mm	1.76353	1.57351	1.39143	1.21823	1.05485	0.90217	0.76108	0.63238	0.51685	0.41519
Y_l, mm	-1.76353	-1.57351	-1.39143	-1.21823	-1.05485	-0.90217	-0.76108	-0.63238	-0.51685	-0.41519
X, mm	98.54709	99.06850	99.47532	99.76658	99.94161	100.00000				
Y_u, mm	0.32804	0.25595	0.19938	0.15870	0.13419	0.12600				
Y_l, mm	-0.32804	-0.25595	-0.19938	-0.15870	-0.13419	-0.12600				

The airfoil was built according to the coordinates of the points in two directions. The origin of the coordinate system was located at the front point of the chord of the airfoil. The values corresponding to the chord length of the airfoil were plotted along the X coordinate axis. The shapes of the upper and lower

contours of the airfoil were set along the *Y* coordinate axis relative to the chord according to the values of the Y_u and Y_l parameters.

The airfoil model was placed into the airspace model. The airfoil position was changed to the angle of attack in the range from 15 to -15 degrees. The step of changing the angle of attack was taken 3 degrees in each direction. The calculation was carried out in conditions of subsonic flight speed of the aircraft. The Reynolds number was 1×10^5. The smaller division of

the airspace into finite elements near the surfaces of the airfoil model allowed us to obtain the most reliable results of computer modeling.

Results and discussion

The results of computer modeling were presented in the form of color pressure contours applied to the airspace areas. The calculated air pressure contours on the surfaces of the airfoil under conditions of changing the angle of attack are presented in the Figs. 2-12.

Figure 2 – The air pressure contours on the airfoil surfaces at the angle of attack of 15 degrees. The unit of measurement on the scale is kPa.
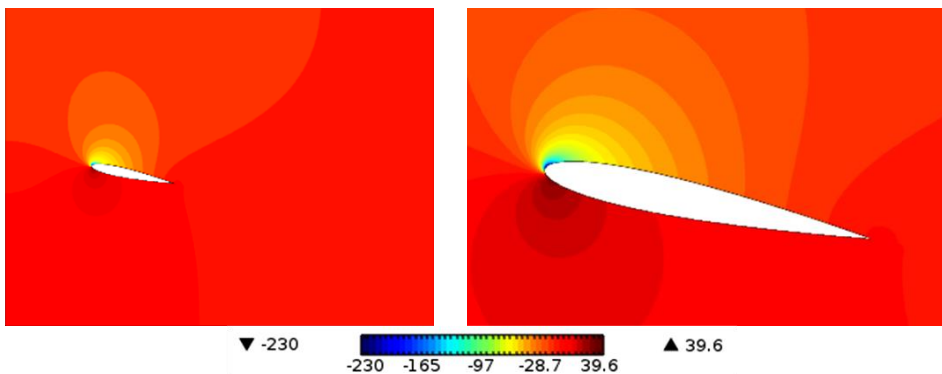
Figure 3 – The air pressure contours on the airfoil surfaces at the angle of attack of 12 degrees. The unit of measurement on the scale is kPa.
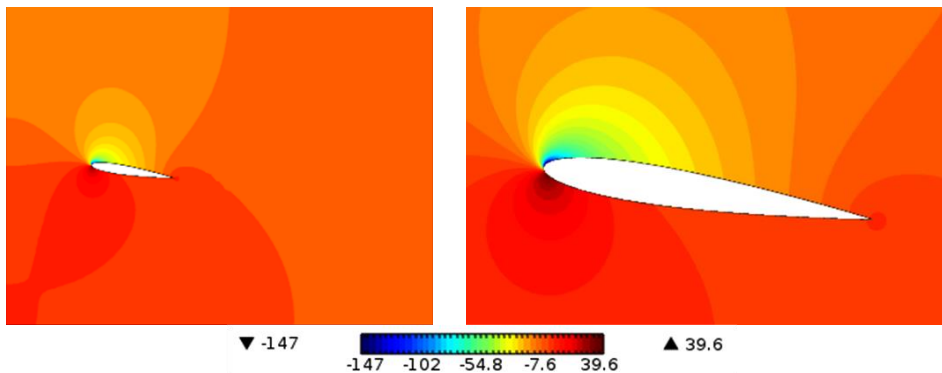
Figure 4 – The air pressure contours on the airfoil surfaces at the angle of attack of 9 degrees. The unit of measurement on the scale is kPa.
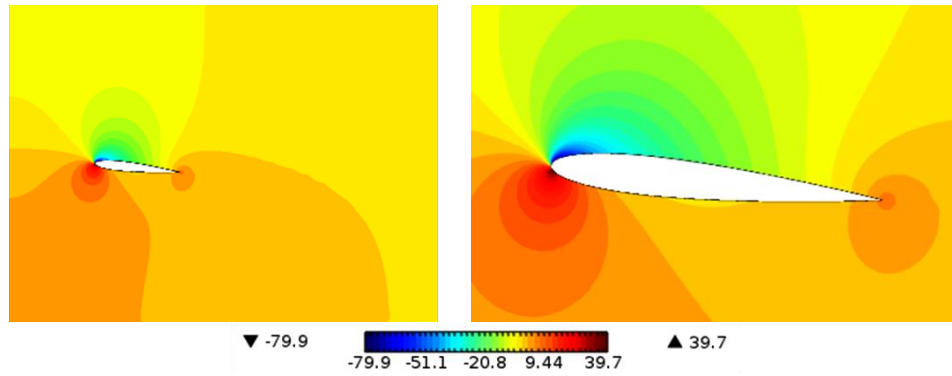
Figure 5 – The air pressure contours on the airfoil surfaces at the angle of attack of 6 degrees. The unit of measurement on the scale is kPa.
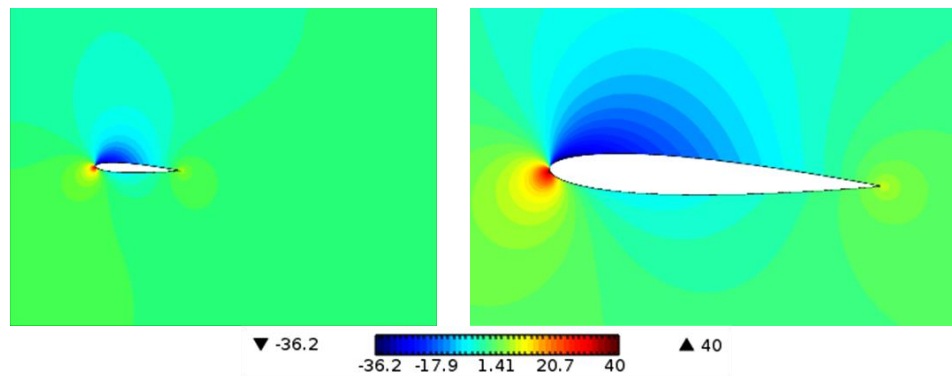
Figure 6 – The air pressure contours on the airfoil surfaces at the angle of attack of 3 degrees. The unit of measurement on the scale is kPa.
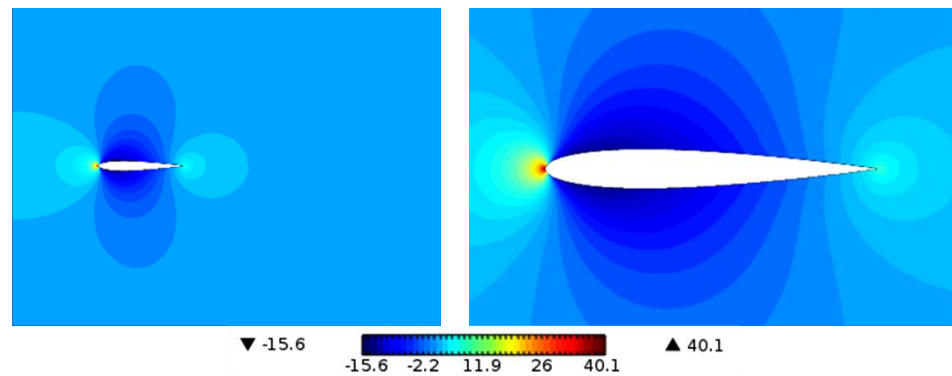
Figure 7 – The air pressure contours on the airfoil surfaces at the angle of attack of 0 degrees. The unit of measurement on the scale is kPa.
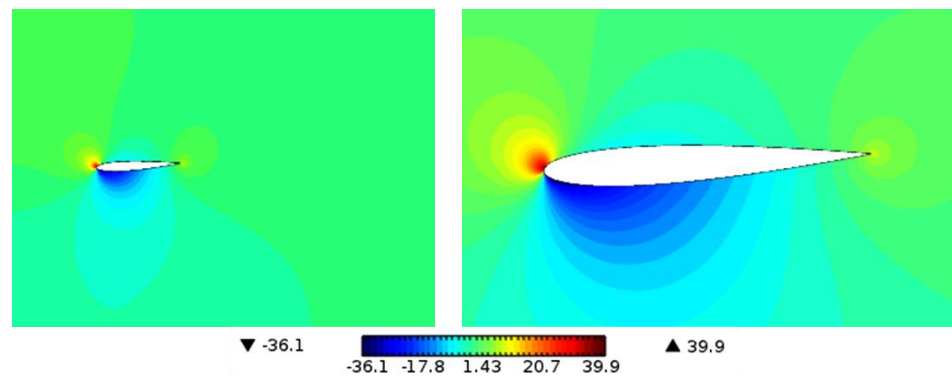
Figure 8 – The air pressure contours on the airfoil surfaces at the angle of attack of -3 degrees. The unit of measurement on the scale is kPa.

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Figure 9 – The air pressure contours on the airfoil surfaces at the angle of attack of -6 degrees. The unit of measurement on the scale is kPa.
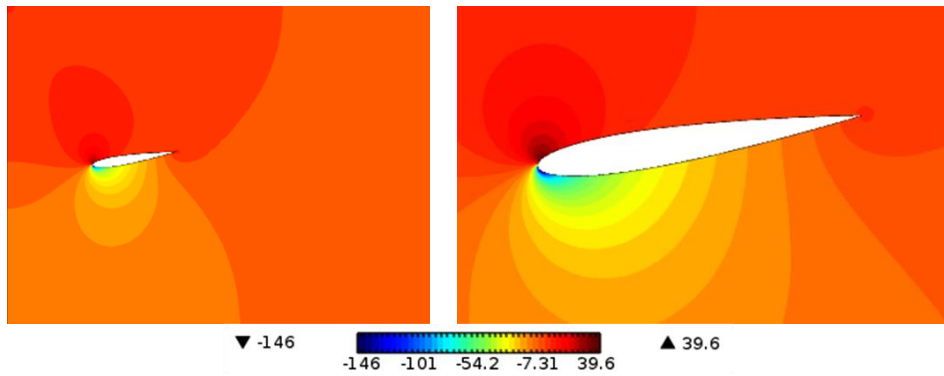
Figure 10 – The air pressure contours on the airfoil surfaces at the angle of attack of -9 degrees. The unit of measurement on the scale is kPa.

Figure 11 – The air pressure contours on the airfoil surfaces at the angle of attack of -12 degrees. The unit of measurement on the scale is kPa.
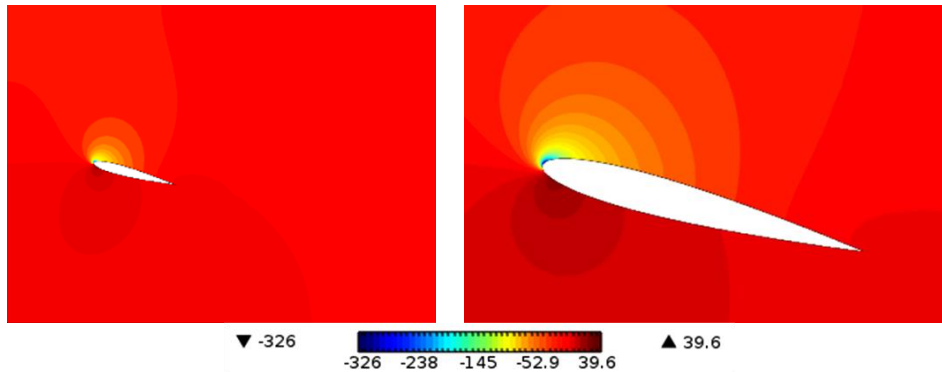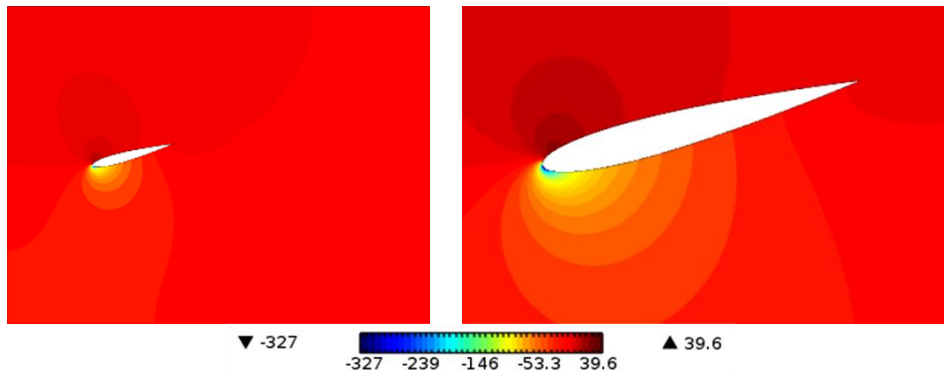

Figure 12 – The air pressure contours on the airfoil surfaces at the angle of attack of -15 degrees. The unit of measurement on the scale is kPa.

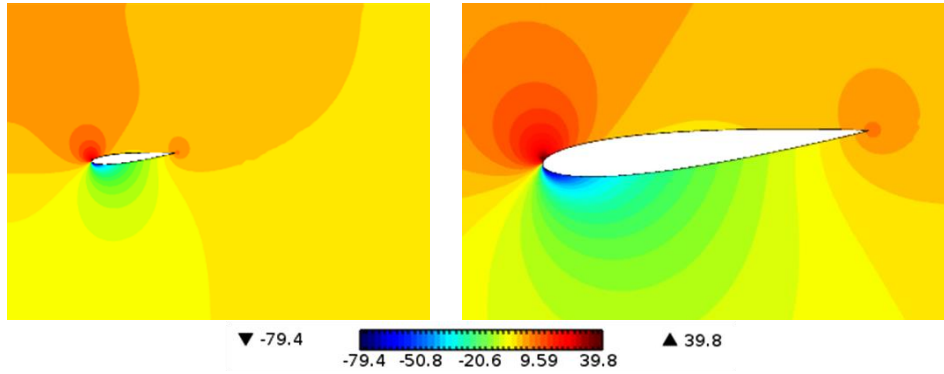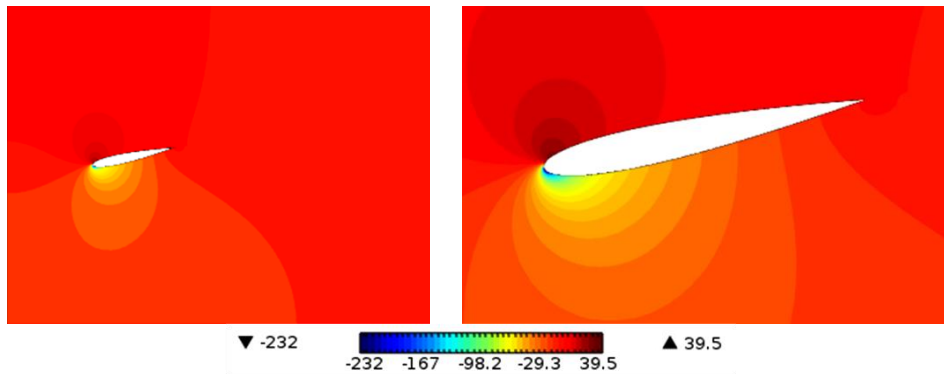The zone of negative air flow pressure occurs with an increase in the value of the positive angle of attack on the upper surface of the airfoil of the aircraft wing. The zone of positive air flow pressure is observed on the lower surface of the airfoil. The maximum values of negative and positive pressures were calculated at the leading edge of the airfoil. The pressure values decrease at the distance from the leading to the trailing edges. Near the trailing edge, regardless of the angle of attack of the airfoil, only positive air flow pressure acts. The negative pressure drop on the upper surface of the airfoil is: at the angle of attack from 3 to 6 degrees – 54.7%, at the angle of attack from 6 to 9 degrees – 45.7%, at the angle of attack from 9 to 12 degrees – 36.1%, at the angle of attack from 12 to 15 degrees – 29.5%. The pressure drop averaged 13.83% when changing the angle of attack of the airfoil by one degree. Thus, condition of the lift component is fulfilled, i.e. the pressure difference corresponding to the rarefaction on one side of the wing and compression on the other causes the appearance of a force directed towards the positive angle of attack. Since the considered airfoil of the aircraft wing is symmetrical, at the negative values of the angle of attack, the formation of the negative pressure zone occurs near the lower surface, and the positive pressure zone occurs near the upper surface. The change in pressure of air flow at the negative values of the angle of attack of the airfoil is almost similar to the change in pressure at the positive values of the angle of attack. The uniform distribution of positive pressure on the leading and trailing edges of the airfoil is determined at the zero angle of attack. Negative pressure acts on the upper and lower surfaces of the airfoil. Positive pressure is greater in magnitude than negative pressure.

Conclusion

Flow around the airfoil of the aircraft wing with air stream is characterized by the appearance of the gradients of positive and negative pressures on the leading and trailing edges and the upper and lower surfaces. When the angle of attack increases from 0 to 15 (-15) degrees, the value of negative pressure decreases in the range from 56.91 to 29.5%, respectively. The positive pressure zone on the surface of the airfoil is distributed in the form of circles of different diameters. The negative pressure zone on the surface of the airfoil is distributed in the form of ellipses. Maximum positive pressure (approximately 40 kPa) that occurs near the leading edge of the airfoil does not change at the different angles of attack.

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THE FORMATION OF STUDENTS' COMMUNICATIVE AND COGNITIVE COMPETENCIES AS A FOCAL PEDAGOGICAL PROBLEM

Abstract: The article mainly discusses the issues of applying communicative and cognitive methods widely in language instruction, considering students as a main subject of the education process, developing students' speech culture through their understanding and careful study of the means of language expression as well as implementing extensively cognitive approaches in teaching process.

Key words: communicative-cognitive methodology communicative competence, speech culture, communicative activity, communicative attitudes, cognitive approach, criteria, behavioral approach.

Language: English

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Introduction

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The President of the Republic of Uzbekistan states as follows: "One of the urgent tasks before everyone is to bring up our children as independent thinkers, modern professionals, with a strong life position and people devoted to their country" [8,16]. One of the main principles of the state policy is to educate a spiritually mature and intellectually developed person taking into account his/her personality, aspirations, abilities and interests. In the process of education, the top priority is given to the establishment of teacher-student cooperation, the transformation of the student into a main subject of education and the development of students' speech culture through their understanding and careful study of the means of expression in their native language. The key reason of this is a lack of interconnection between grammar and its use in speech in Uzbek language lessons, and students' inability to apply their knowledge in speech acts even if their enough mastery in knowing grammatical rules. It is common knowledge that the speech culture of each student is directly related to his/her communicative activity in language education.

Today, the terms "communication" and "communicative" are widely used not only in linguistics, but also in other fields of science. We believe that the linguistic meaning of the word "communicative" is "attitude" or "perception through language". We rely on such definition because we think that the continuous improvement of each student's speech culture is directly related to the development of learning and communicative speech acts.

In recent years, UNESCO has promoted the idea of expanding the use of information and communication technologies in education and put it as one of the top priorities of their main activities [7, 7]. The concept of "communicative" goes back to the 1960's of the last century and began to be widely used in the study of Kazakh and Uzbek linguistics.

A number of sources explain the term differently. For example:

Communication is a process of the exchange of information in various human interactions. The main elements that help to lead or organize the act of communication are as follows: the source or

information (the producer and transmitter/speaker of the text); the recipient/receiver (the person whom the information intended to and expected a certain attitude); text (meaningful information encoded by some characters or elements); channel (a means of transmitting information by which the text is transmitted from the main source to the recipient), the result (the recipient's attitude to the information received); feedback (information about the recipient's attitude received by the source and evaluated in terms of its relevance to their observations).

Communicative ability is the concept of communication, pedagogical and technical skills and abilities.

Communicative activity is the purposeful relationship of educators and learners with other instructors, community members, and parents [6, 36-37].

Researcher N.K. Akhmedova states that communicativeness is a professional personal approach and emphasizes that people should rely on human factors in the communication process, explain the purpose of education to each member of the team, motivate them to perform the assigned tasks, have the skills to communicate constantly with team members [1, 108].

The idea of teaching a language in a communicative way was put forward by English methodologists in the second half of the last century.

In her research work F.I. Ikromkhanova presents the fact that the data about cognitive psychology were, first of all, applied in American methods of teaching foreign languages context [4, 27].

The term *communicative* is widely used interchangeably with the phrase *communicative competence*. Majority of scholars address to communicative competence as the system of internal capacity needed to gain in-depth knowledge of communication, i.e. according to their opinion, communicative competence is the ability to initiate, communicate and provide reasoning [10, 2].

Consistent with the state educational standard of the secondary education system competence is the ability to apply existing knowledge, skills and abilities in daily social activities.

The term *communicative competence* denotes the ability to interact both in the native and any foreign languages in various social situations, to adhere to the culture of communication while acts of speaking, to have social flexibility, to form the ability to work effectively in social teams etc.

Summarizing various interpretations of these concepts, such as the application of theory into practice, the transfer of theoretical knowledge to a higher level of speech culture etc., we came to the conclusion that communicative competence is the ability to apply acquired knowledge, skills and abilities in communication.

Communicative competence plays a vital role and has a big significance in language instruction. In improving the quality of education of the native and state languages, the vast attention is paid to the students' communicative competences, i.e., the ability to independently compare the knowledge of the native language with the state language in schools with Kazakh language of instruction and to create favorable communicative conditions where students can analyze both languages during their practice.

Encouraging students to think freely and independently and challenging them to express themselves through various communicative acts is not a solution to the problem. In recent years, great importance has been paid to the communicative competence in language teaching. The following lingua-didactic issues are considered to be of high importance in the development of students' communicative and cognitive abilities:

- Independent learning or self-study, not the transferring knowledge;

- The state language is a means of communication in the multinational Republic of Uzbekistan;

- Creation of favorable communicative-cognitive conditions and development of students' speaking skills making able them to communicate freely in both languages;

- Increase of students' interest towards language learning;

- Creation of speech acts related to the market economy, national idea, spiritual and educational issues and public life due to the continuous development in all spheres of social life;

- Arise a feeling of love for the motherland and a sense of independence by acquainting students with the ethnic and cultural identity of the Uzbek and Kazakh peoples.

Today's modern education puts an important task before the students that is to change a student from a passive object who only replicates the teachers' opinions during the lessons into more active subject with well-formed communicative and cognitive abilities, free and independent thinking and with the passion to know the world. Memorization of theoretical knowledge by students is not the indicator of their deep understanding. As A. Albetkova states, "knowledge of the theory doesn't manifest the students' ability to recite the rules by heart, but it is seen in the students' ability to perceive that rule and its representation in their spoken output produced after reading a piece of novel" [2, 22].

The communicative method is gaining more and more popularity in language teaching methodology these days. The scope of this term is expanding day by day and at present it has started to represent new scientific concepts such as communicative principle, communicative method, communicative linguistics, communicative technology, communicative

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competence, communicative task, communicative goal, communicative direction, communicative activity, communicative situation, communicative approach etc. In the education system, all of these terms aim at developing the students' speaking skills and competencies. The communicative process can be achieved by applying the theory in communication. Students can receive or transmit information based on the knowledge being studied. In both cases they have a role of communicators, and their communicative abilities can be demonstrated only by their speaking skills.

The tasks assigned to human speech activities are enormous. One of their functions is communicability, which is closely related to the provision of communication, attitudes, and interactions between people. In such communicative acts people transfer necessary information to their recipients and exchange their points of views. In the process, communicators form their speech culture. Speech culture teaches young people all the secrets of communication e.g., everyday greetings, who to speak, what, when and where to speak and how to speak processes etc.

In the secondary education system, teachers rely their teaching on a certain competency-based approach while teaching academic subjects. In language instruction, the formation of communicative and linguistic competencies in accordance with the requirements of state educational standards is very important.

Cognitive approach (*cognitio* - knowledge, understanding) means that one acquires knowledge and develops skills and abilities independently. Today this term may collocate with other terms such as cognitive grammar, linguistics, cognitive psychology, cognitive direction etc. The term *cognitive* refers to the process of knowing the objective reality (world), the perception of it by a person, saving it on memory, interpretation and processing information and so on. The learners search for the necessary knowledge not only through listening, but also through independent learning. The cognitive process ends with the acquisition of knowledge and the essence of communicative-cognitive methodology is producing spoken language. So today's main requirement of education is to conduct oral communication and create new knowledge, i.e. the application of a cognitive approach to the educational process [2, 22] It is better

to understand the term *cognitive approach* as a process of knowledge acquisition. Hence, it is effective to apply both approaches in language education.

Up-to-date learning process requires the language instructors to use a cognitive approach in their teaching and to instruct their learners utilising the teaching materials not only from the standard textbooks and course books but also from additional sources by providing guidance on how to gain specific knowledge using various supervisory questions. Carefully structured questions and well-designed materials will increase students' interest and conscious understanding and mastery of a particular theme. The material learned and acquired by the learners independently is stored in long-term memory rather than memorization of it, this fact finds its true evidence in psychology. The students find the answers to the questions themselves and explore the theme when working with the course books.

In the communicative-cognitive approach, the students search for new knowledge themselves with the help of the teachers' guiding materials, work with their course books, apply the acquired knowledge in their life and see the fruitful results of their hard work. For example, if the instructors use a number of samples while teaching the topic "Antonyms" students will not have an opportunity to think deeply. In contrast, if teachers let their students analyze the exercises given in their course books; draw some conclusions on antonyms and find similar examples - these may bring more benefit to students. Conscious acquisition of the learning materials, on the other hand, teaches students to get rid of memorization of grammatical rules and to express personal views, opinions and conclusions within a topic.

Cognitivism began to enter the systems of pedagogy and didactics in the United States and a number of European countries in the 1960s and it aimed at forming the verbal (the students' desire to express activity and identity in communication) methods of teaching.

In continuous education system applying verbal-cognitive learning methods means to put a creative person and his/her upbringing in the center of everything [6, 37]. According to the requirements of the state educational standards, the wide use of communicative-cognitive method in secondary schools is effective (see Figure 1.1).

Figure 1.1. Ways of implementing communicative-cognitive methods in secondary schools

Communicative-cognitive methodology

Preparing guiding materials within the topic discussed

Comparative analyses of language phenomenon using samples

Providing similar samples, making up different texts

Applying the theory in communication

Discovering new knowledge, making conclusions, reading the rules from the course books, comparing own conclusions with the state language

In order to find samples related to the rules, it is highly recommended to both teachers and students use not only course books, but also fiction works (due to the lack of fiction works in native language in Kazakh schools it is recommended to substitute them with Uzbek literature).

The purpose of the use of communicative-cognitive methods in language education is to study the materials on a particular topic in relation to each other and to practise the teacher-student cooperation. So in this process, students are always directed to find the necessary information autonomously and apply it in practice.

Based on these principles, it is recommended to divide the communicative competencies into the following components in the process of teaching students the native language in comparison with the state language (see Figure 1.2):

Figure 1.2. Communicative competencies formed during the comparative teaching of the native language with the state language

Students' formed communicative competences

Competence of understanding through listening

Research the theme; retell the theme and the competence of expressing opinions

Competence of responding to the theme in the text analysis

Competence of participating in discussions and conversations

Competence of comparing the state language with learned grammatical terms and rules

Criteria for determining the level of development of students' communicative-cognitive competences

The results are determined by defined criteria (see Figure 1.3).

The production of communicative acts, a communicative or practical goal in language education is different from the goal of teaching other disciplines. A communicative or practical goal is to teach students to understand and accept the opinions of others both orally and in a written way, as well as to express their own opinions using spoken and written language.

Figure 1.3. Criteria determining the formation and development of students' communicative and cognitive competences
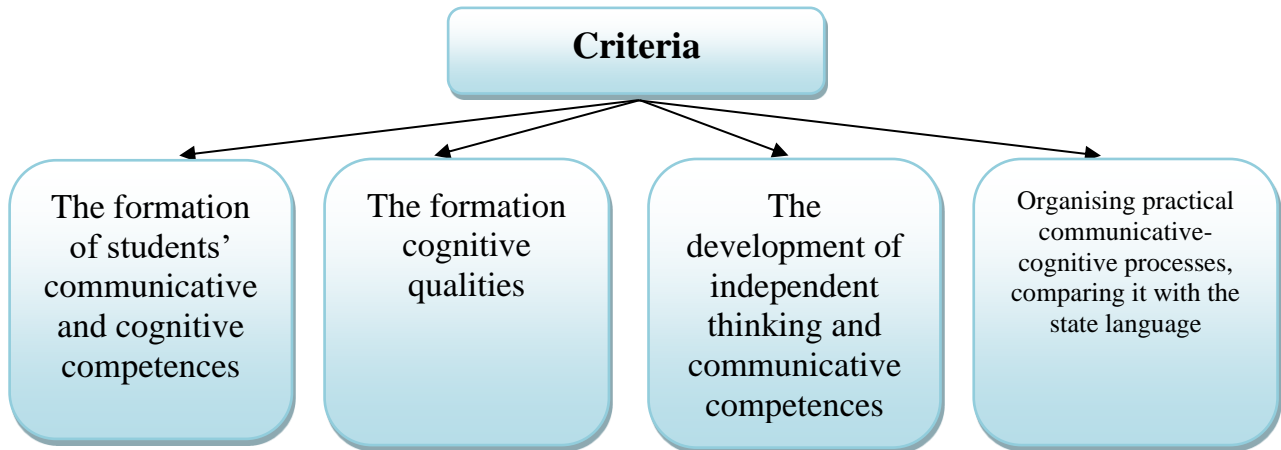
So due to the fact that students receive information from the various mass media sources in the Uzbek language, one of the main tasks of comparative teaching of the state language is to teach students the grammar of the Uzbek language, as well as to teach Uzbek grammar in schools with other languages.

It is common knowledge that students find it difficult to discover the main features of language phenomena without the help of their teachers. It is obvious that the specific questions posed in the context of the language phenomenon are the first step in the formation of communicative-cognitive activity of students.

The essence of the method of teaching a communicative-cognitive approach is that students are engaged in the discovery of new ideas or the creation of something in the process of completing each task or assignment. They also seek and acquire new knowledge on their own and try to apply it in their everyday life and in speech acts. For example, in the study of knowledge acquired in the Kazakh language classes, there is a need to compare it with the state language, and the ability to work independently with the course book starts to develop. Certainly, in this process, the level of knowledge, skills and abilities of students is formed and developed gradually, not at the same time (see Figure 1.4).

Figure 1.4.
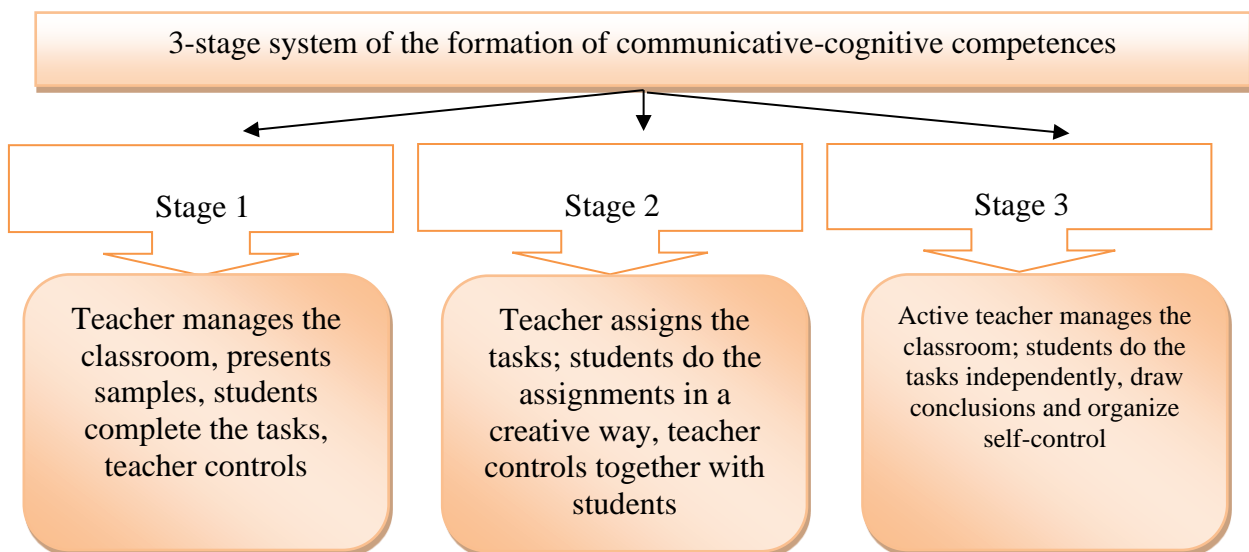
The traditional "Teacher - course book - student" paradigm requires the replacement with the "Student – course book - teacher" paradigm in accordance with the concept of transforming the student into a subject of educational process, as outlined in the National Training Program. The education system in the developed countries of the world is based on this paradigm.

In the behavioristic education system, the course book and the teacher are the main sources of any lesson and the supervisory force of education. According to the paradigm based on cognitive methodology, the teacher acts as an organizer of independent activities, a competent advisor and assistant. The implementation of this method should not be limited with the terms of the teaching assignments given in the course book. The development of speaking skills is closely related to the further development of students 'mental abilities, which can be done in the process of consolidating the knowledge gained over several lessons. The students can learn theoretical information from their teachers' lectures, course books, additional literature, internet and other sources, but the most important aspect is to put the acquired knowledge into practice.

A communicative, cognitive approach to language teaching encourages students to be proactive. This type of approach is one of the main psychological and pedagogical factors in educating young people to be creative thinkers. General, educational and developmental goals occur in the implementation of communicative goals. Through the communicative-cognitive approach, students develop their skills in working with materials in Uzbek and Kazakh languages. As a result of students' independent use of lexical and grammatical pronunciation materials in their communicative activities, they develop writing and speaking skills, i.e. communicative-cognitive competencies.

At present, communicative-cognitive approaches are significantly formed and widely used in educational institutions.

"The average teacher can retell a theme, a good teacher can explain it, a best teacher can show it, but a great teacher can inspire students to a theme" (William Arthur Ward). It is important for the teacher to make each lesson feel like a world of miracles and news, to inspire students to discover something on their own, to discover and master the unknown secrets of the subject and to create a strong need for knowledge.

From the beginning of humanity, the issue of perfection and spiritual perfection is of paramount importance to all at once [3, 175]. Confucius state the following in his doctrine: "Tell me - I'll forget, show me - I'll remember, teach me to do everything - it will definitely be mine". Indeed, if students are able to satisfy their needs for knowledge by their own efforts and hard work, this knowledge will certainly be consciously assimilated. "In the course of the lesson, the realities of life and knowledge should be presented not in a ready form, but in the form of case studies, questions that make students think, tasks that direct them to feel and try the things themselves" [9, 18]. In order to create conditions for the students to master the knowledge on their own and to rediscover the knowledge they need to learn, it is necessary to turn that knowledge into an interesting case or a puzzle. Man is naturally eager to know what is behind the scenes [5, 16-17].

"It is not necessary to teach students, but it is necessary to make them study on their own. It is impossible to succeed in education unless the child doesn't explore or study himself/herself" [9, 39]. However, this does not mean that the teachers should be spectators, on the contrary, in order to develop students' independent learning skills they must carefully prepare the tasks, materials etc. and analyze their students' results systematically. Our rapidly evolving society requires studying, cognition and learning as the main driving forces of education, and students are considered to be as a main subject of the educational process.

According to Professor B. Tukhliev, there has been a significant shift in the educational system of Western countries from a behavioral approach to a cognitive approach. In the assessment of human activity, cognitivism (English "educated, learned, mastered") differed in some respects from the behaviorist approach that prevailed in pedagogy and psychology until the 1960s.

It is well known that in the behavioral approach, human behavior is understood as a set of unconscious reactions, often determined by the influence of the external factors.

Behaviorism is derived from an English word that means "behavior, ethics". It studies the human psyche, and analyses human appearance, his behavior and speech, the qualities which are easily observed.

In the cognitive approach, however, the superiority of the skills and abilities formed on the basis of consciousness are admitted. The essence of the method of teaching a cognitive approach is that a student is engaged in the discovery of new ideas or the creation of something in the process of completing the tasks set by the teachers.

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THE ADVANTAGE IS THE USE OF ULTRASOUND IMAGING WHEN PERFORMING A BRACHIAL PLEXUS BLOCK IN RECONSTRUCTIVE PLASTIC SURGERY

Abstract: The use of ultrasound imaging in our modification when performing a brachial plexus blockade helps to determine the localization of nerves, observe the position of the needle relative to anatomical structures when it moves. The spread of local anesthetic observed by ultrasound scanning confirms the exact location of the needle tip.
Key words: ultrasound imaging of nerves, brachial plexus, anesthesia effectiveness, complication, supraclavicular access.
Language: Russian

ПРЕИМУЩЕСТВО ИСПОЛЬЗОВАНИЕ УЛЬТРАЗВУКОВОЙ ВИЗУАЛИЗАЦИИ ПРИ ВЫПОЛНЕНИИ БЛОКА ПЛЕЧЕВОГО СПЛЕТЕНИЯ В РЕКОНСТРУКТИВНО ПЛАСТИЧЕСКОЙ ХИРУРГИИ

Аннотация: Использование ультразвуковой визуализации в нашей модификации при выполнении блокады плечевого сплетения помогает определить локализацию нервов, наблюдать положение иглы относительно анатомических структур при ее продвижении. Наблюдаемое с помощью ультразвукового сканирования распространение местного анестетика подтверждает точное местоположение кончика иглы.
Ключевые слова: ультразвуковая визуализация нервов, плечевое сплетение, эффективность анестезии, осложнение, надключичный доступ.

Введение

Блокада плечевого сплетения (ПС) считается наиболее адекватным методом анестезии при оперативных вмешательствах на верхних конечностях, прерывая поток афферентных импульсов к задним рогам спинного мозга и предупреждая развитие гиперальгезии структур спинного и головного мозга [1-3]. Вопрос безопасности и эффективности блокад ПС сохраняет свою актуальность на протяжении многих лет [4]. Это подтверждается наличием значительного числа доступов и способов блокад,

однако ни один из них не исключает развитие серьезных осложнений и технических про блемпри их выполнении. Успех развития блокады, со ставляющий 70-95% [5, 6], во многом зависит от конституционально анатомических особенностей. Часто многократные эмпирические попытки поиска нервного сплетения иглой заканчиваются осложнениями [7-9]. Это опасно, особенно для надключичного доступа, из-за вероятности повреждения купола плевры и легкого с развитием пневмоторакса [10]. Частота этого осложнения у опытных анестезиологов не превышает 2-3% [11]. Другим возможным осложнением надключичного до ступа является пункция подключичной артерии с развитием гематомы надключичной области [11]. Развитие данных осложнений характерно для традиционных методов идентификации нервов, которые полагаются на поверхностные анатомические ориентиры, сообщение пациентом о парестезии и электрическое возбуждение нерва. [10, 12-14]. В последние годы в медицинских учреждениях при выполнении регионарной анестезии все чаще используется ультразвуковая визуализация с целью определения локализации нерва [15-17] при блокадах плечевого сплетения межлестничным [18], надключичным [19], подключичным [20, 21] и подмышечным доступом [17, 22]. Однако клинические данные об использовании методики ультразвуковой визуализации при выполнении блокад ПС надключичным доступом немногочисленны и противоречивы [23-25].

Цель исследования - изучение влияния ультразвуковой визуализации нервов на эффективность и безопасность блокады плечевого сплетения надключичным доступом.

Материал и методы.
После получения информированного письменного согласия пациенты с запланированным оперативным вмешательством на кисти и предплечье с использованием анестезии плечевого сплетения надключичным доступом приняли участие в этом исследовании. Критерии включения: возраст 18-85 лет, ASA физический статус I-III, вес 50-160 кг. Критерии исключения: любое противопоказание к регионарной анестезии, значительное

неврологическое нарушение в верхней конечности, значительное нарушение психики. Мониторинг витальных функций включал: неинвазивное измерение АД, пульсоксиметрия, ЭКГ мониторинг (монитор Infinity Vista фирмы Dräger). Венозный доступ осуществлялся с помощью периферического венозного катетера G 20, фирма Braun).

Все пациенты были распределены случайным образом в одну из двух групп: 1) возбуждение нерва нейростимулятором (группа НС); 2) идентификация нервов на основе ультразвукового сканирования при выполнении блокады (группа УЗИ). Анестезию проводили раствором местного анестетика, состоящим из 20 мл 2% лонгокаина и 10 мл 0,5% бупивакаина (всего 30 мл).

Пациентам в группе НС проводился надключичный блок под контролем стимулятора нервов (Stimuplex, Braun Medical, Bethlehem, USA) со стимулирующей частотой 2 Гц и шириной импульса 100 мкс. Надключичный доступ в этой группе осуществлялся по методике Куленкампфа [1]. Дистальная моторная реакция в руке определялась с максимальным порогом 0,4 мА.

Пациентам в группе УЗИ проводили надключичный блок под контролем портативного ультразвукового аппарата (SonoSiteInc., USA) с линейным датчиком L38е частотой 5-10 МГц. Пациент укладывается на спину, рука на стороне инъекции укладывалась вдоль боковой поверхности туловища в каудальном направлении. Голову поворачивали на 450 к контрлатеральной стороне. Кожа в области манипуляции стерильно обрабатывалась 70% раствором этилового спирта, датчик ультразвукового аппарата помещался в стерильный рукав. Далее проводилось предварительное ультразвуковое ис следование надключичной области: ультразвуковой датчик располагается параллельно ключице, в надключичной ямке, чтобы визуализировать подключичную артерию и плечевое сплетение в поперечном ультразвуковом срезе.

Плечевое сплетение определялось как группа гипоэхогенных узелков, располагавшихся латерально от округлой пульсирующей подключичной артерии, лежащей на вершине гиперэхогенного первого ребра (рис. 1).
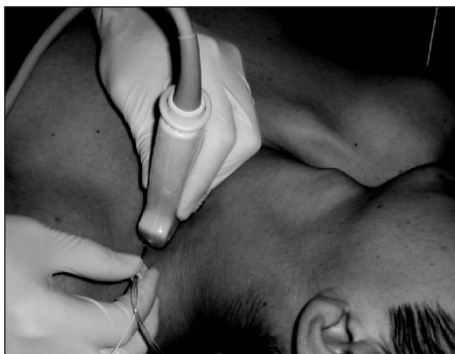
Рис. 1. Поперечная сонограмма отображает расположение структур плечевого сплетения (PL) относительно подключичной артерии (A) и первого ребра (R).

После анестезии кожи в месте инъекции 1,0 мл 2% раствора лидокаина гидрохлорида проводится вкол изолированной иглой для проводниковой анестезии (50 мм, G 22) с боковой (латеральной) стороны датчика (рис. 2).
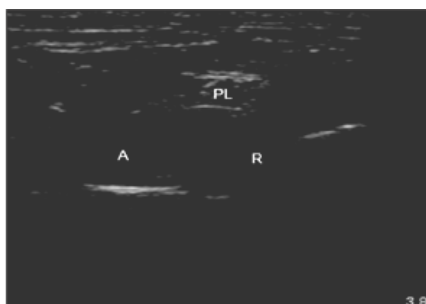
Рис. 2. Положение иглы относительно ультразвукового датчика во время выполнения блокады плечевого сплетения надключичным доступом.

Игла продвигалась вдоль продольной оси датчика и строго в плоскости распространения УЗ луча. Движение иглы на блюдалось в режиме реального времени, пока срез иглы не до стигал нервного сплетения.

Местный анестетик вводили таким образом, чтобы на УЗ картине наблюдалось круговое распространение анестетика внутри и вокруг сплетения (рис. 3).
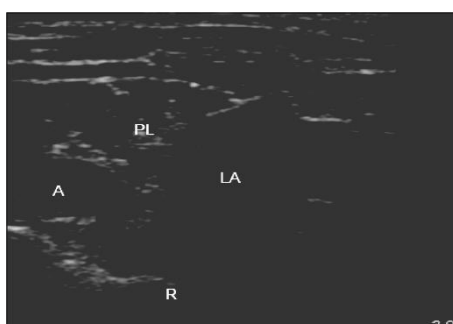
Рис. 3. Поперечная сонограмма показывает иглу, расположенную в плечевом сплетении (PL), распространение местного анестетика (LA) вокруг плечевого сплетения (PL) при начале введения анестетика; (A) - подключичная артерия, (R) - первое ребро.

Если распространение местного анестетика не достигало некоторых частей плечевого сплетения, игла перемещалась для достижения необходимого распространения анестетика.

В работе фиксировали время выполнения блока, опреде ленного как время от начала (вкол иглы в группе НС, начало ультразвукового

исследования в группе УЗИ) до конца инъекции местного анестетика. Оценивалось развитие сенсорного блока в зоне иннервации плечевого сплетения в течение 20 мин. Сенсорная чувствительность оценивалась, используя укол иглой 23G: 2 - нормальное ощущение, 1 -

уменьшенное или незначительное ощущение, 0 - отсутствие ощущения.

Блокаду ПС считали успешной, если она обеспечила пол ную сенсорную анестезию в зоне оперативного вмешательства через 20 минут после введения местного анестетика. Если по сле 20 минут анестезия в области хирургического вмешательства была недостаточной, то дополнительно проводили мест ную инфильтрационную или общую анестезию.

Результаты исследования также включали: 1) потребность в дополнительном введении местного анестетика, необходимость проведения общей анестезии; 2) осложнения анестезии; 3) время, необходимое для выполнения блокады; 4) выраженность боли и дискомфорта при проведении блокады по визуально аналоговой шкале; 5) количество многократных по пыток идентификации нервов (более трех).

Пациенты осматривались через сутки для контроля возможных осложнений: постоянной парестезии, боли в месте инъекции, дыхательной недостаточности (при своевременно нераспознанном пневмотораксе). Любое осложнение наблюдалось до полного разрешения.

Статистическую обработку данных осуществляли с использованием параметрических критериев (метод Стьюдента) в пакете прикладных программ Statistica 6.1. Полученные дан ные считались достоверными при *p*<0,05.

Результаты и обсуждение.

Проведен проспективный анализ 65 и блокад ПС надключичным доступом: 30 пациентов в группе НС, 35 - в группе УЗИ. Индивидуальные особенности (возраст, рост, вес, пол, индекс массы тела) и продолжительность оперативного вмешательства не отличались среди групп (табл. 1).

Таблица 1. Антропометрические данные пациентов, длительность операции (M±m)

Показатель	Группа НС (*n*=30)	Группа УЗИ (*n*=35)
Пол (муж/жен)	27/3	28/7
Масса тела, кг	76,5±4,32	76,63±2,68
Возраст, лет	34,13±5,44	37,7±2,85
Рост, см	173,38±3,5	173,81±1,75
ИМТ, кг/м^2	25,24±1,37	25,34±0,76
Продолжительность операции, мин	74,2±4,6	80,37±6,3

У большинства пациентов оперативное вмешательство было в области локтевого сустава и предплечья - 90,0 и 91,4% в группе НС и УЗИ, соответственно (табл. 2). ближайшем

послеоперационном периоде у одного па циента развился пневмоторакс (3,3%). В группе УЗИ связанные с анестезией осложнения отсутствовали.

Таблица 2. Область оперативного вмешательства

Область оперативного вмешательства	Группа НС (*n*=30)	Группа УЗИ (*n*=35)
Область локтевого сустава	14	13
Предплечье	13	19
Запястье	1	2
Кисть	2	1

Таблица 3.Частота успеха анестезии, время выполнения блокады (M±m) и необходимость дополнительного обезболивания

Показатель	Группа НС (*n*=30) Группа УЗ (*n*=35)	
Время выполнения блокады, мин	14,2±4,2	11,5±0,5
Полный сенсорный блок за 20 мин наблюдения	80% (24)	97,1% (34)
Дополнительная инфильтрационная анестезия, %	13,3% (4)	2,9% (1)
Проведение общей анестезии, %	6,7% (2)	0

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Изучение методом визуальноаналоговой шкалы дискомфорта и боли, сопровождающих выполнение блокады ПС, показало достоверное снижение интенсивности дискомфорта и боли в группе с использовани ем ультразвукового сканирования манипуляции: 3,41±0,15 и 2,82±0,14 балла (соответственно, в группах НС и УЗИ), *p*<0,05. Очевидно, полученные результаты связаны с большим количеством многократных попы ток верификации структур ПС в группе НС - у 8и па циентов (26,7%). В группе УЗИ проблем с идентификацией нервов не зафиксировано.

Ультразвуковая визуализация нервов при выполнении проводниковой анестезии пока редко применяемая в нашей стране методика. Результаты нашей работы предполагают, что использование ультразвуковой визуализации при выполнении надключичного блока плече вого сплетения необходимо для определения точной локализации нервного сплетения и снижения количества продвижений иглы вслепую. В отличие от оценок методом нейростимуляции, ультразвуковая визуализация может определить размер, глубину и точное местоположение плечевого сплетения и соседних анатомических структур. Оценив ультразвуковое изображение перед выполнением блока, можно определить оптимальный участок и глубину вкола иглы. Ультразвуковое сканирование в реальном времени помогает провести иглу до нервного сплетения с меньшим количеством попыток, избежать пункции сосудов и пневмоторакса. Если игла не нарушает границу первого ребра или плевры на ультразвуковой картине, то риск пневмоторакса фактически устранен. Продвижение иглы может быть прослежено непрерывно при выполнении блокады, тем самым придав уверенность выполняющим ее анестезиологам.

Большинство опубликованных материалов по по воду применения ультразвуковой визуализации при выполнении проводниковой анестезии плечевого сплетения - зарубежные. S. R. Williamsetal. [26] сообщили об адекватной анестезии у 85% и 78% пациентов, которым выполняли надключичную блокаду ПС с использовани ем ультразвуковой визуализации и нейростимуляции, соответственно. S. Kapraletal. [27], W. T. Yangetal. [28] сообщили об успехе блокады плечевого сплетения с ис пользованием ультразвука, но в их исследованиях проводилась ультразвуковая визуализация нервов в про дольном срезе. Vincent W. S., Chan V. W. etal. [19] сообщают о 95% эффективности надключичной бло ды с использованием поперечного среза плечевого сплетения при ультразвуковом сканировании. В статье G. Arcandetal. [29] сообщается о 87% успеха анестезии плечевого сплетения у 40 пациентов с использованием ультразвуковой визуализации. P. E. Soedingetal. [30] сравнили частоту успеха блокады плечевого сплетения с использованием ультразвуковой визуализации и анатомических ориентиров и сообщили об успешной хи рургической анестезии. Согласно ряду зарубежных публикаций использование ультразвукового сканирования в реальном времени при выполнении анестезии плечевого сплетения сокращает время выполнения блокады [26], ускоряет развитие и увеличивает продолжительность блокад [31], снижает количество осложнений [30, 32].

Выводы

Использование ультразвукового сканирования при выполнении надключичной блокады плечевого сплетения:

- повышает эффективность блокады до 97,1% без увеличения времени ее выполнения по сравнению с использованием нейростимуляции;

- снижает частоту осложнений анестезии, связанных с повреждением ряда расположенных анатомических структур на 13,3%, уменьшает количество многократных попыток идентификации нервных структур на 26,7%;

- снижает уровень боли и дискомфорта выполнения блокады на 0,59 балла по визуально аналоговой шкале.

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NEW TECHNOLOGY-NEW APPROACHES

Abstract: The article describes new approaches to new pedagogical and innovative technologies implemented in the education system.
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Introduction

It is known that today the role and place of modern teaching methods, interactive methods, innovative technologies in the training of qualified professionals in higher educational institutions and faculties of the Republic is enormous. New technologies and new approaches to modern education, knowledge, experience and interactive methods of pedagogical skills ensure that students have knowledgeable, mature skills.

Innovative technologies are innovations and changes in the pedagogical process and the activities of teachers and students, the implementation of which is based on the full use of interactive methods. Interactive methods are called collective thinking, that is, methods of pedagogical influence are an integral part of the content of education. The peculiarity of these methods is that they are carried out only through the joint work of educators and students [1].

In his speech at the joint session of the Legislative Chamber and the Senate of the Oliy Majlis of the Republic of Uzbekistan on September 8, 2016, President Sh.M.Mirziyoev said: Ensuring the mastery of foreign languages and modern information and communication technologies will remain our top priority[2]. "

Therefore, we can say that the leadership of our country has paid great attention to the educational process. A number of laws have been passed. The adoption of a national program on education and training is also of great importance.

The need to introduce and master advanced pedagogical technologies is repeatedly emphasized in the national training program. What is pedagogical technology itself and how does it differ from traditional teaching methods?

There are different definitions of pedagogical technology. But more noteworthy than the definition of "pedagogical technology" is the definition of UNESCO.

"Pedagogical technology is a systematic method of creating, applying and defining knowledge, taking into account the technical and personal resources and their interaction, which sets the task of streamlining the forms of education in the whole process of teaching and learning."

In fact, pedagogical technology is a new (innovative) approach to teaching. It is an expression of social engineering thinking in pedagogy.

Initially, in the early 70's, developed countries began to publish journals on pedagogical technology in the United States and Japan, and later specialized institutions began to work on this issue.

In 1996, an international conference on pedagogical technology was held at the University of Egypt under the auspices of UNESCO. In many countries, using a technological approach to teaching, students have made significant progress in increasing mastery. In South Korea, for example, 75% of the 50,000 children studying at a pedagogical technology testing center have achieved results that only the best students achieve in traditional teaching. Experiments in a number of other countries have shown that the

application of this system of teaching allows the average student to achieve a result higher than that achieved by 80-85% of students in traditional teaching. Mastering pedagogical technology has enabled Singapore, Korea and Japan to rank in the top 3 in math among 9, 13 year old and graduating class students. The technological approach to increasing the effectiveness of education was maintained in the United States thirty years ago.

Pedagogical technology (in the primary sense of the term) is based on the ideas of behaviorism. The most important rule of this direction in psychology is the unconditional recognition of the uniqueness of the relationship between the indicator of the organism (stimulation) and its response to it. This is equally relevant to the experimental study of the educational process.

American pedagogy has adopted a theory of behavioral stimulation and support. He brought to the forefront the demonstration of a set of behaviors such as knowledge, skills, way of thinking, evaluation, behavior acquired in the learning process. For example:

- read a deliberate error in the text and find it with at least 90% accuracy;

- Students demonstrate the correct operation of 10 three-digit numbers;

- Read "Hamlet" and express its summary in writing;

- The student describes how animals adapt to the environment;

- Independent student in the library can give a lecture on a specific topic in his group;

It is known that in pedagogy, several teaching methods have been developed to increase the activity of students in the educational process: problem-based learning, performance games, role-playing, thematic teaching and so on. However, this does not mean that they are widely used in the higher education system. In our opinion, the reason for this is that the preparation for each lesson requires a teacher's research, high professionalism, creative approach and a lot of time. Let us now consider the radically different types of education: verbal-visual, technological, and exploratory-creative.

1) Oral-illustrative approach. It is traditional and is largely defined by the teacher's transmission of information, the reception, collection, and memorization of students 'knowledge. However, the essence of the concept of cognition is considered as information stored in memory. Such knowledge is tested by the ability to apply them (in exams), that is, to express the knowledge in memory in response to direct questions, without any manuals. The knowledge in this system is the result of memorization, often official information. They are formed radically in memory. knowledge at the level of recollection is not stored in memory for a long time. Accordingly, the main task of the teacher is to inform the necessary

information and work on consolidating it in memory. In such a learning process, the number of questions on the subject, the distribution of hours between sermons, laboratory and practical classes, the place of classes are strictly determined [3].

2) Pedagogical technology. As I.P. Podlasi points out: until technology is created, personal skill reigns. It is well known that productive learning allows students to master pattern-based behaviors based on memorized rules.

"... Instead of the previously used and developed teacher-to-teacher development, pedagogical technology is proposed as a project of the learning process that defines the structure and content of the student's learning process," wrote VP Bespalko.

Within the framework of pedagogical technology, productive level education is seen as a conveyor process that needs to be clearly recorded and the parts described and returned to their original state with the expected results [4].

Of course, in pedagogical technology, learning materials are clearly marked, designed in accordance with the purpose of the lesson, provide alternative ways of recommending learning topics, each part is synchronized with the introduction of tests and additional corrections. The training is aimed at achieving high results. Such focus is not free from the concepts of engagement, competition, and mutual assistance. At the same time it gives a productive look to the whole educational process. It should be noted that in certain conditions, one subject serves as a solid basis for the transition to pedagogical technology in a productive way and the other in a research way.

3) Exploratory approach. The goal is for students to solve a problem, to independently master a new, unfinished experience. It consists of developing the ability to create new ways of influencing, personal perception. As a result of the interaction of the educational content of the exploratory educational model with nature and society, the individual begins a path of research and intensive creative activity [6]. At the same time, pedagogical learners take a democratic, motivating approach to managing learning activities, support their personal initiatives, encourage collaboration, and prioritize its importance and incentives until students master the operational technical aspects of learning activities. As noted earlier, so far pedagogical approaches have been developed that incorporate an exploratory approach to teaching.

The model of the technological form of the educational process and its practical application is innovative and reshapes traditional education. It should be noted that pedagogy requires both technological and exploratory approaches. Each is applicable, has a place, and it is advisable to combine them optimally together [8].

Advanced creative educators, as a result of finding answers to the shortcomings of traditional

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educational technology, the search for ways to implement the intellectual labor of students, created unique teaching methods, which led to a new way of thinking. systematization of applied pedagogical technologies, giving it a targeted direction determines the achievement of the expected result, ensuring the integrity of the form and content in the implementation of education. The introduction of tests, diagnostics and diagnostic analysis, the transition to a multi-point assessment system, modeling the content of the chapter, the content of the chapter as a whole, the emergence of systematic types of control, student performance and, finally, non-traditional forms of education. instead, new pedagogical technologies have emerged that require a transition to education in a new thinking system [5].

Nowadays, educational work, like other types of work, requires the formation of specific knowledge, skills and abilities in the individual, which requires the development of personal qualities such as will, attention, observation, thinking, imagination.

Continuous analysis of the factors that increase the effectiveness of education and the correct assessment of the appropriateness of the methods is a way to determine the principles and show that we can express the desired outcome of education. Based on these principles, the technology that ensures the effectiveness of the educational process is a new pedagogical technology.

The introduction of new pedagogical technologies in the process of education is based on:

- Ensuring the priority of the individual student participating in the educational process[7];

- Realization of the achievement of the educational goal (guaranteed);

- Achieving targeted management of the educational process, as it is a manageable process;

- Unification of the technology of the forms of tools, methods that provide the content of education into a single system.

At present, the main principles of the new pedagogical technology are:

• Regular analysis;
• Selection of the most necessary design tools;
• Be able to determine the appropriateness of methods (teaching methods);
• Predicting the outcome to be achieved (achieving goals);
• Ensuring the integrity of the educational process.

The introduction of new pedagogical technologies in the educational process requires the introduction of a number of new elements into the educational process. These are:

• Diagnosis;
• Definition of educational units (criteria);
• Diagnostic analysis;
• Correction;
• repayment (loss of defects);
• Get the expected result;
• Rating.

Based on the above principles and elements and the introduction of new pedagogical technologies in education, especially the creation of our own new system of pedagogical technologies using pedagogical technologies in foreign and Commonwealth countries, it is especially important to generalize and apply in practice [5].

The technologies used should make life easier for the teacher and the student, allow the student to be motivated and interested, and ensure that it has a positive impact on the development of the community. Before using modern pedagogical technologies in teaching, it is necessary to take into account the pedagogical conditions, material and technical base of adaptation. As the President of the Republic of Uzbekistan Sh.M.Mirziyoev noted, "We all understand that today we have more important and urgent tasks ahead of us. In this regard, further strengthening the material and technical base of science and education, ensuring that it is not only in line with the times, but also ahead of time, the widespread use of advanced methods of training and retraining of teachers, this work in cooperation with authoritative centers abroad , the state will mobilize all its resources for the introduction of modern technologies in the field, the implementation of tasks related to the full encouragement of hard and responsible work of teachers and educators, in short, the development of our new generation, which is becoming a great force in our lives.

In general, today there is a growing interest in the use of interactive methods, innovative technologies, pedagogical and information technologies in the educational process, one of the reasons for which is that in traditional education technology teaches them to search for the knowledge they possess, to study and analyze it independently, and even to draw their own conclusions.

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THE SYMBOLS OF ORNITHONYMS (BIRDS) IN UZBEK AND RUSSIAN FOLK PROVERBS

Abstract: The article provides a comparative study of the semantics of ornitonimic symbols in folk proverbs - one of the subgenres of folklore, the semantic volume of which is based on the example of Uzbek and Russian folk proverbs. The article also examines the features of Uzbek and Russian folk proverbs, equivalence and analogy in proverbs.
Key words: paremic type, proverb, saying, aphorism, symbol, base symbol, position symbol, analogy, typology, laconicism, bipolar, ambivalent.
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Introduction

Folk proverbs are one of the minor genres of folklore, which differs from other minor genres by its laconic character and didactic function. Folk proverbs are defined in various literatures. In most of them, the proverbs are the result of thousands of years of experience of the people; it is a genre of educational significance. In particular, the proverb is short, deeply meaningful, one of the genres of folklore with a stable form widely used in speech [11, 239], proverbs are on a variety of topics and cover a wide range of life issues; often being of a proverbial nature [12,106] , that proverbs have been polished among the people for centuries and have taken a concise and simple poetic form [6, 128] , it has been said that there is no nation in the world that does not have a proverb genre, and therefore proverbs are an international genre [5, 26].

The main findings and results

One of the implies of aesthetic representation that comes in folk proverbs is the symbol, which is characterized by its traditionalism, its connection to the mythological views formed amid the millennial history of the people. We know that in a work of art (folklore and literature) a symbol (image or detail) and a combination of words, an addition to the lexical meaning itself, evoke a conditionally steady imaginative association and serve within the development of the expecting lovely meaning [9, 6].

Symbols in old stories works have been studied in several classifications in research. Folklore scholar Sh.Turdimov, who studied the symbols in folk songs, classifies the symbols like birds, creatures, places, fruit trees, fruitless trees, components of nature, color, core symbols related to the profession [9, 118-134]. Carrying out a synergetic investigation of traditional symbols in the writings of Uzbek legends, D. Urinbaeva studies traditional images by classifying them into symbols related to colors, birds, natural life, trees and plants, numbers, magic, and religious beliefs [8, 71-76]. B. Omer, who studied Russian and Turkish folk proverbs, by comparison, examined the symbols in the proverbs as metaphors and called the animal symbols within the people proverbs zoomorphism, zoomorphic image, zoomorphic lexeme [1, 60].

The symbols that appear in people's proverbs are the main implies of revealing the meaning hidden by the punctuation in its base. The poetic meaning of the core images in the sayings, such as goose, duck, crow, swallow, crane, stork, swan, is covered up in these pictures. For example, in Uzbek folk proverbs, the symbol of the duck contains a negative meaning and is interpreted as cunning, deceitful, provocative, selfish, and indifferent.

For example, the duck as a symbolic figure is a liar in the proverb "a hasty duck dives with both head and tail" [Торопливая утка ныряет и передом, и задом - The hasty duck dives both front and back] [русский эквивалент: Поспешишь — людей насмешишь - Russian equivalent: Hurry - make people laugh] [7], a liar in the proverb "be a goose without a duck, / speak with knowledge" [Не будь уткой, гусем будь, получив знания, будь отличным - Do not be a duck, be a goose, having received knowledge, be excellent]; an indifferent person who does not want to learn; In the article "What a pity for a duck when the world is flooded" [Нет забот утке, если даже весь мир утопить - No worries duck even if the whole world is drowned], an indifferent, careless, selfish person is associated with such concepts as "an ignorant, short-sighted person" in the article "A duck cannot be a swan even if it weaves itself" [Не быть жар птицей утке, сколько не ухаживай - Don't be a hot bird to a duck, no matter how much you look after] [русский эквивалент: Сколько утка ни бодрись, а лебедем (а гусем) не быть. - Russian equivalent: No matter how much a duck cheers up, you won't be a swan (and a goose)].

In Russian folk proverbs, the image of a duck has a negative color connotation and embodies concepts such as an unproven man, an ugly woman, a woman's cunning. The following Russian folk proverbs embody the image of a man looked down upon by the symbol of the duck:

Сколько утка ни бодрись, а лебедем (а гусем) не быть - *No matter how much a duck cheers up, it cannot be a swan (and a goose).*

Утка в море, хвост на горе - *Duck in the sea, tail on the mountain* [2-3, 2:104]

Где утка (*т. е. баба*), тут и мутка (*т. е. сплетня*) - Where is a duck (i.e. a *woman*), here is a duck (i.e. *gossip*) [2-3, 2:179].

R. Majidova, who conducted an axiological study of anthropocentric proverbs in Uzbek and Russian, emphasizes the bipolarity (two-sidedness) of the evaluation of anthropocentric proverbs in the process of determining the evaluation markers [4,10]. The proverbs of both peoples have two poles, and by comparing, contrasting, contrasting both poles, an exemplary idea emerges. In folk proverbs, the symbols of the duck and the swan, the crow and the goose are compared at two poles (bipolar) to serve to reveal the categories of negative and positive, good and bad.

The symbol of the goose has a positive connotation in Uzbek folk proverbs and is interpreted as good news, a beautiful person. For example, in the proverb, "A crow is not a flying goose, but a headless house", [не быть вороне гусем и взлетев, не хорош дом без хозяина - *not to be a crow a goose and taking off, a house without an owner is not good*] the crow has symbolic meanings, such as a negative image, a bad message, and the goose, its second pole,

represents a good message as a positive image. The essence of this proverb is also revealed through the essence of the same symbols. Judging by the meaning of the symbols in the proverb, the word about a house without a head, that is, without a man, does not spread good news, so it is understood that it is good for every family to have a man, a head.

The neighbor's chicken looks like a goose, and in the bride's proverb [Соседская курица как гусь, а невестка как девочка - *The neighbor's chicken is like a goose, and the daughter-in-law is like a girl*] the goose comes in the sense of a beautiful person.

The brown goose in folk proverbs corresponds to the interpretation of the image of a duck [9, 23] and means indifferent, selfish person:

If the field gets salt from the water, from the chest of the brown goose, / If you speak to the deaf, from behind the ear [Если поле берет воду, из груди бурого гуся, если вы говорите слово непослушному, проходит мимо ушей - *If the field takes water, from the chest of a brown goose, if you say a word to the disobedient, it goes deafening*].

In Russian folk proverbs, the goose is an ambivalent symbolic image, distinguished by its representation of negative and positively colored concepts. Одним гусем поля не вытопчешь - *You can't trample a field with one goose* [2-3,2: 53] In the Uzbek equivalent of the Russian proverb "Winter does not come with a crow" [С одной вороной не приходит весна - *Spring does not come with one crow*], the goose symbol is given in the form of a crow, denoting negative concepts such as bad man, evil.

In Russian folk proverbs such as Гусь свинье не товарищ - *Goose pig is not a friend* [2-3, 2: 132] [the goose is not friendly to the pig], свинья да мякина, гусь да вода — здоровы живут - *pig and chaff, goose and water - they live healthy* [2-3, 2: 133] and from the comparison of the symbol of the goose and the pig at the two poles (bipolar), it can be understood that the pig (dirty man) has a negative content, and the goose (pure, honest man) has a positive content load.

In Uzbek folk proverbs, the crow evokes stable associations, combining concepts such as bad news, bad people who are companions. In the proverb, "The raven does not bite the raven's eye", the crow symbolizes the wicked. Given that the symbol of the serpent in the variants of this proverb, such as "the serpent does not press the tail of the serpent" [змея не наступает на змеиный хвост - *the snake does not step on the snake's tail*], "the serpent understands the tongue of the serpent" [язык змеи понимает только змея - *only the snake understands the language of the snake*], has a negative connotative meaning, the symbolic image of the crow has a negative human connotative meaning.

The proverb "winter does not come with a crow" [С одной вороной не приходит весна - *Spring does not come with one crow*] means that not one bad

person will make everyone bad, or one bad news will not start evil. The details of the logs and the river, which are related to the place and the object in the article "You cannot blur the river with a lump", which is its analogue, also prove our opinion above. In the Russian equivalents of this proverb, such as "одним гусем поля не вытопчешь - *You can't trample a field with one goose*" [2-3, 2:53], "один мороз не приносит зимы - *frost alone does not bring winter*", the essence of the crow symbol is given by the symbol of the goose and the frost. Every detail that has become a symbol in folk proverbs is associated with an association of mythological notions, fixed concepts among the people. The details of crows, geese and swallows, winter, frost and spring, flowers and spring in folk proverbs evoke associations with mythological imagery. For example, proverbs such as "spring does not come with a swallow" [Одна ласточка не приносит весны, Первая ласточка не делает весны - *One swallow does not bring spring, The first swallow does not spring*], "spring does not come with a flower" [Один цветок весны не делает - *One flower does not make spring*], [Одна капля с неба ещё не дождь - *One drop from the sky is not yet rain*] are analogies of the above proverbs, in which the symbols swallow, spring, flower have a positive meaning and represent the forces of goodness. The crow, on the other hand, symbolizes winter and embodies the notions of evil, wickedness. It appears that concepts such as crow and winter, swallow and spring, flower and spring in folk proverbs are essentially mythological codes.

In the proverb [Если у вороны есть долг перед тобой, пусть она будет жива-здорова - *If the crow has a duty to you, let it be alive and well*] [русский эквивалент: Если у должника озноб, кредитора трясет лихорадка - *Russian equivalent: If the debtor has a chill, the creditor is shaken with a fever*], the symbol of the orangutan is loaded with the meaning of a person who does not borrow from anyone, but eats someone else's money.

In the mental imagination of the Russian people, the crow is understood as a wild, evil, but intelligent forest bird. The essence of the ornithonymic symbols in the proverbs of both peoples is the same. In the Russian people it is the exact equivalent of the proverb "the crow does not bite the crow's eye" (ворона вороне глаз не выклюет - *a crow can't peck out a crow's eyes*), which indicates the presence of semantic connections, typological similarities in the symbols in Uzbek and Russian folk proverbs.

In Russian folk proverbs, the semantic scope of the crow symbol is wide, meaning concepts such as greedy and evil man, cowardly, intelligent and experienced man. In the article "Пуганная ворона куста боится - *The scared crow is afraid of the bush*" the crow has the connotation of a coward, and there is no exact equivalent in the Uzbek language. However, the meaning of the cowardly man in the sense of the crow symbol is given in the analogies of "a frightened

cat flees from the shadow" [пуганный кот бежит дажет от своей тени - *scared cat runs from its shadow*], "a snake bitten is afraid of a rope" [Укушенный змей пятнистой веревки боится - *The bitten snake of the spotted rope is afraid*] through the image of a cat, bitten by a snake (man).

In the proverbs "Старая ворона мимо не каркнет - *The old crow will not croak past*"" [2-3] and "старого воробья на мякине не проведешь - *you can't fool an old sparrow on chaff*", the symbol of the crow has the meaning of an intelligent and experienced person; The Uzbek equivalent of this Russian proverb, "The old fox will not be trapped", [старый лис не попадает в капкан - *the old fox does not fall into the trap*] suggests that the old crow is represented by the symbol of the old fox, and the meanings of the words "old crow" and "old fox" prove that the crow is used in the connotative sense of a cunning, intelligent, experienced man.

In Uzbek folk proverbs, the symbolic image of the crane combines positive concepts such as good, intelligent person, messenger, goodness, and evokes associations within these meanings.

The dog takes the bitterness from the crane / Bit bitterness - from the flea. [10,32] [Собака злится на журавля, а вши злятся на блох - *The dog is angry with the crane, and the lice are angry with the fleas*] In the article, the crane comes as a symbol of a good man.

The article "Crane dung on the head of a widow" [Журавль делает кал на голове вдовы - *The crane makes feces on the widow's head*] is loaded with the content that even good people slander a woman without a husband through the symbol of a crane.

In the article The Crane Cannot Be Caught in a Trap [Журавля ловушкой не поймаешь - *You can't catch a crane*], the symbol of the crane has the semantics of intelligent and prudent people.

The comparison of the symbolic images of the crow and the crane at the two poles (bipolar) in the article The Crow Doesn't Go, The Snow Doesn't Go / The Crane Doesn't Go [Не уходя ворон, не тает снег, не приходя журавль, не тает лед - *The crows do not leave, the snow does not melt, the crane does not come, the ice does not melt*] shows that the crane symbol has a positive color. The proverb, through the symbols of the crow, the crane, the snow, and the ice, expresses the didactic content that evil will not end without the departure of bad people and the arrival of good people.

In Russian folk proverbs, the symbol of the crane generalizes such concepts as a good person, a young and inexperienced person, a far-sighted person, an experienced person who can see far. In the proverbs "стрелял в воробья, а попал в журавля -*shot at a sparrow, but hit the crane*", "и кулик чужу сторону знает и журавль тепла ищет - *and the sandpiper knows the other side and the crane seeks warmth*" [2-3] Turna expressed the connotative meanings of a

good man, in the proverb "молодой журавль высоко взлетел, да низко сел - *the young crane flew high, but sat down low*" a young and inexperienced man, in the proverb "журавли за море летают, а всё одно курлы - *cranes fly across the sea, but all are one curved*" a man who spoke lofty words about goodness, in the proverb "Аист знает когда придёт лето, а воробей знает когда придёт зима - *The stork knows when summer will come, and the sparrow knows when winter will come*" an experienced man who could see far.

The stork is an ambivalent symbol, representing both positive and negative meanings as an ambassador of goodness and kindness, as well as a proud, ungrateful person.

The proverb "summer knows that summer is coming / winter is coming" [журавль летает высоко, да видит далеко - *the crane flies high, but it sees far*] can be understood in its own sense. The portable (connotative) meaning of this proverb arose through the symbols of summer, stork (good people know the beginning of goodness, goodness), winter, crow (bad people know the beginning of evil, evil deeds).

In the article "Look at the stork's arrival, not its departure" [не смотри как аист уходит, а смотри как приходит - *do not watch the stork leave, but watch how it comes*], the stork comes as a symbol of a man who is proud and has great dreams.

In the article The Stork's Leg is Short [нога аиста коротка себе - *stork's leg is short to itself*], the stork symbol has the connotative meaning of an ungrateful person.

In the folklore of the Slavic peoples, the stork is a symbol of the coming of spring - goodness, blessing, happiness (child), wisdom, purity. In Russian folk proverbs, the stork is rarely used and comes as a symbol of pride and arrogance. In the article. Будто аист на притучне (т. е. заспесивился) - *As if a stork is on a fancy (that is, he is hazy)* [2-3], the symbol of the stork is selfish and has the human semantics of arrogance, and the same semantics of the stork is consistent in Uzbek and Russian folk proverbs.

It is clear from the above proverbs that in Uzbek and Russian folk proverbs duck, crow, stork have a negative connotative meaning, swan; crane and swallow have a positive connotative meaning.

Conclusion

To conclude, the symbols in the image of birds (ornithonyms) in Uzbek and Russian folk proverbs have typological similarities in meaning and content. Ornithonyms in Uzbek and Russian folk proverbs - symbolic images in the image of a bird are formed on the basis of mythological notions and are associated with traditional fixed concepts.

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WORK ON THE TEXT OF MANUSCRIPT SOURCES (ON THE EXAMPLE OF ABDULLAH AVLONI'S WORK "TURKISH GULISTAN OR MORALITY")

Abstract: This article discusses how to use interactive methods to work on manuscript text.
Key words: Arabic graphics, old Uzbek script, Arabic, Persian, lithography, manuscript, text, calligraphy, dictionary, spelling, ethics, education, and language.
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Scopus ASCC: 1208.

Introduction

We know that the centuries-old spirituality, spiritual world and creative potential of our people are reflected in the Arabic script. Therefore, every student who wants to know the history of his people, the literature of the past, to understand it more deeply, should be familiar with the old Uzbek spelling based on the Arabic alphabet; it must have studied the specifics of this record [1, p. 6].

The goals and objectives of the bachelor's course on "Old Uzbek writing" are the contribution of such representatives of science and literature as Mahmud Kashgari, Yusuf Khos Hajib, Ahmad Yugnaki, Atoi, Sakkoki, Lutfi in the comprehensive development of the Uzbek language and literature. It is aimed at in-depth study and scientific study of the immortal works of dozens of our classic writers, such as Alisher Navoi, Zahiriddin Muhammad Babur, Muhammadrizo Ogahi, Boborahim Mashrab, Muqimi, Furkat. To develop students' skills and abilities to work with scientific information, to read, write, read old Uzbek manuscripts, lithographic newspapers, magazines and

scientific works, which are necessary for their work is to teach them how to get the information they want.

The main findings and results

Practical training in the subject of "Old Uzbek writing" is primarily a form of training for students to carry out research activities in collaboration and under the supervision of a teacher. The teacher's supervision of the work during the lesson will help the students to master the scientific conclusions on the topic. The practical part of the workshop will focus on independent analysis of theoretical issues. Therefore, in each lesson the student should conduct independent research, compare and analyze the given examples, work on calligraphy exercises, make effective use of annotated dictionaries, distinguish between lithographic and manuscript texts, the place of writing letters and will have to have in-depth knowledge and skills about the form, draw general conclusions and be able to fully express their opinion.

The innovations, pedagogical technologies, and interactive methods that have been rapidly entering the education system in recent years require the

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teacher to constantly research and apply them. In the course of the lesson, the teacher needs to organize his students' creative views on science, to form in them the characteristics of curiosity, and, of course, to organize the lesson using new pedagogical technologies and methods [2, p. 3].

From this point of view, in this article we will use the method of "Zig-zag", which helps to increase the effectiveness of the lesson in teaching the subject "Old Uzbek writing" "Working on the text of the manuscript of Abdullah Avloni" Turkish Gulistan or Morality"; we set ourselves the goal of providing a method of use.

The zigzag method works with students in small groups to ensure that they master the topic quickly and accurately. The advantages of the method are that: 1) students develop team skills; 2) Save time on the topic.

• The method is used in the first step:

Students are divided into several groups (3-4). For example:

Subgroup 1 – "Future Star" group;

Subgroup 2 – "Scholars" group;

Group 3 – "Ziyo" group;

Group 4 may be the Talented Youth Group.

• The text covering the essence of the new topic is also divided into 3-4 parts, respectively;

• Give each group a specific part of the topic (text 1 "اخلاق", text 2 "عفو", text 3 "حِفظِ لسان", text 4 "یخشی خلقلار", etc.) and the task of studying it.

Subgroup 1: Text "Morality" from "Turkish Gulistan or Morality";

عبداللا اولانی
تورکی گلستان یاخود اخلاق دن
[3, p. 85]اخلاق

انسانلارنینگ یاخشیلیکغه چاقیرگوچی یامانلیکدن قایتارگوچی بر علم دور یاخشی خلق لارنینگ یاخشیلیگینی یامان خلق لارنینگ یامانلیگینی دلیل و مثال لار ایله بیان قیلادورگان کتابنی اخلاق دییلور اخلاق علمینی اوقوب بیلوب عمل قیلغان کیشی لار اوزینینگ کیم ابکانین جناب حق نی اوچون خلق قیلغانین پیر یوزیده نیمه ایش قیلماک اوچون یورگانین بیلور بر کیشی اوزیدن خبردار بولماسه علم نی علمانی یاخشی کیشیلارنی یاخشی نرسه لارنی یاخشی ایشلارنی قدرینی قیمتینی بیلماس اوز عیبینی بیلوب اقرار قیلوب توزاتمکغه سعی و کوشش قیلغان کیشی چین بهادر و پهلوان کیشی دور رسول اکرم نبی محترم افندیمیز میزان ترازوسیگه قویادورلار عمل لارنینگ ایچیده یاخشی خلق دن آغیرراغی یوقدور مؤمن بنده یاخشی خلقی سببلی کوندوزلاری روزه توتوب عبادت قیلغان کیشی لار درجه سیگه یتار دیمیشلار

سویلاسانگ سویلا یاخشی سوزلاردن
یوقسه جیم تورماقینگ ایرور یاخشی
اویلاسانگ یاخشی فکرلار اویلا
یوقسه گنگ بولماقینگ ایرور یاخشی
ایشلاسانگ ایشلا یاخشی ایشلارنی
یوقسه بیکارلیغینگ ایرور یاخشی

To the 2nd group: the text "Good manners" from "Turkish Gulistan or Morality";

عبداللا اولانی
تورکی گلستان یاخود اخلاق دن

[3, p. 87]یخشی خلقلار

یخشی خلق بیر قسمی اوز نفیمیزگه بیر قسمینی بیر بیریمیزگه قارشو ایشلاتمک اوچون کیرکلی بولگان یاخشی خلقلار فطانت دیانت اسلامیت نظافت غیرت ریاضت شجاعت قناعت علم صبر حلم اینتظام مقیاس نفس وجدان وطننی سویمک حقانیت نظر عبرت عفّت حیا ادراک و ذکا حفظ اسان اقتصاد وقار حوف و رجا اطاعت حق شناسلیک خیرخواهلک مونس لیک صداقت محبت و عفودور منه بو یازدیغیمیز یاخشی خلقلار عقل شرع شیرفغه موفق الله تعالی هم بنده لار قاشیده مقبول و معتبردور ایمدی بو یاخشی خلقلارنی قولگه آلمک اوچون آتا آنا معلم استادلاریمیز حضرتلارینینگ حکمتلی نصیحتلارنی جان قولاغی بیرله تینگلاب دایم خاطرده توتماق اخلاقی یاخشی کیشی لار برله الفت بولمک اخلاقی بوزوق یامان کیشیلاردن قاچماق لازمدور بیزم شریعت اسلامیه ده اخلاق حسنی یاخشی خلقلار ایله خلقلانمک هر نرسه کوزی ایله باقوب خلقینی توزاتمک واجب دور رسول اکرم نبی محترم صلی الله علیه وسلم اسلامیت ده بوزوقلق یوقدور بوزوقلقنی اوستیگه آلو هم یوقدور اسلامیت ده اینگ معتبر کیشیلار یاخشی خلق ایگالاریدور دیمیشلار

بیت
یاخشی برله یورسه هر کیم مقصودی حاصل بولور
یورسه نادانلار ایله بیر کون باریب قاتل بولور
کاته لار قیلغان نصیحتنی کیچیک لار آلمسه
عاقبت خلقی بوزوق بیر بی ادب جاحل بولور

Subgroup 3: "Hifzi lison" text from "Turkish Gulistan or Morality";

عبداللا اولانی
تورکی گلستان یاخود اخلاق دن
[3, p. 89]حفظ لِسان

حِفظ لِسان دیب هر بیر مِلَّت اوز آنا تیل و ادبیاتینی ساقلاماکینی ایتیلور هر بیر مِلَّت نینگ دنیاده بارلیغین کورساتادورگان آیینا حیاتی تیل و ادبیاتیدور مِلی تیلنی یوقاتمک مِلَّت نینگ روحینی یوقاتمکدور هیهات بیز تورکستان لیلار مِلّی تیلنی ساقلامک بیر طرفده تورسون کوندن کون اونوتمک و یوقاتمده دورمیز تیلیمیزنینگ یارمیگه عربی فارسی اولانگانی کم لیک قیلوب بیر چیتیگه روس تیلینی هم یاپیشدورمکده دورمیز درست بیزلارگه حکومتیمیز بولغان روس لسانینگ بیلمک حیات و سعادتیمیز اوچون آش و نان کبی کیراکلک نرسه دور لیکن اوز پیرینده ایشلاتمک و سوزلامک لازمدور زغیریاغی سالوب ماشکیچیری کبی قیلوب آرالاش قورالاش قیلمک تیلنینگ روحینی بوزادور یاهو بیزگه نی بولدی بابالاریمیزگه یینوشغان و یاراگان مقدس تیل و ادبیات بیزگه هیچ کملک قیلماس اوز اوییمیزنی قیدیرساک و آختارساک یوقالگانلارینی هم تاپورمیز یوقالسه یوقالسون اوزی باشمگه تار ایدی دیب یاوروپا قالپاغینی کیوب کولگی بولمک زور عیب و اویاتدور پیغمبریمیز ایرلارداه جمال لسان و تیلدور دیمیشلار

ای آنا تیل عزیز قدردانیم
التفات رحیم رحمانیم
توغدیغیم کوندن ایلادینگ الفت
اولگونچه آییلمه ای جانیم
مینگ علم و ادب سن اورگاتدینگ
چین ادیب معلم شانیم
ملتینگ روحینی کوتارگوچی سن
اینگ مقدس کرملی سلطانیم
عمومی مِلّی تیلنی ساقلاماک ایله برابر خصوصی آغیز آراسیده گی تیلنی هم ساقلامک لازم دور چونکی سوز انسان نینگ درجه و کمالینی علم و فضلینی اولچاب کورساتادورگان ترازوسیدور عقل صاحبلاری کیشی نینگ دلیده گی فکر و نیتی نی علم و قوتینی سوزلاگان سوزیدن بیلورلار

For subgroup 4: Text "Forgive" from "Turkish Gulistan or Morality".

<div dir="rtl">

عبداللا اولانى

تورکی گلستان یاخود اخلاق دن

[3, p. 92]عفو

عفو دیب کیچورمکنی ایتیلور بیر کیشی قیلغان کمچیلیک
لارینی بوینیگه آلوب اوکونوب کیچورمکنی سوراسه عفو قیلمک
لازم دور چونکه عفو یاخشی خلقلارنینگ افضلی انسانیت نینک
اکنلی دور

جناب حق قرآن کریمده عفونی ماقتاب مدح قیلمیشدور
عالیجناب کیشی لار عزرنی قبول قیلور بیر کیشی قصور و قباحتینی
بوینیگه آلوب عذر ایتسه عفو قیلور کیچورور کاتته لیک و اولوغ
لیکنینگ لزَتی بیراودن اوچ آلماقده ایماس بلکی عفو قیلماکده دور

مثلا احمد محمودگه بیر یامان ایش قیلوب دیلنی آغریتدی
محمود احمددن اوچینی آلدی احمد ایلا محمودنینگ آراسیداگی
یامانلکده گی فرق نه اولدی حالبوکه هر ایکیسی هم بیر بیریگه
یامانلیک قیلدی هر ایکیسی هم غملیک و پریشان بولدی بیر
یامانلیک ایکی بولدی اگرده احمدنینگ قباحتیگه محمود عفو
مکافاتینی بیرسه ایکیسی هم شاد و مسرور اولور همده

جناب حق عفو و مغفرت قیلوچیدور نوشیروان بیر گناه کارنی عفو
قیلماکدن قاندای لزَت آلگانیمنی هیچکیمگه ایتمیمن دیمیش

اولوغ لارنینگ ایش عفو ایلامکدور
کیچیک لار عذر اوچون بیل بایلامکدور
مسلمان لیغده یوق کین و عداوت
دله عفو عدالت جایلامکدور
بیزیم ایشلار حسد بغض و حصومت
حدوددن چیب چیقوب چیت پایلامکدور
بوتون افعالیمیز بیر بیرگه ضدلیک
اوروب تارتوب آغزنی مایلامکدور

</div>

The groups work on the text for a set amount of time. Assignments for small groups include:

1. Read the text aloud and translate it into the current spelling.

2. Briefly explain the content.

3. Identify a series of words related to the learned layer (Arabic, Persian).

4. Identify difficult words and practice a few lines in your notebook.

Note: In this case, students read the text independently without interaction and translate it into the current spelling. Briefly comments on the content of the text. Identifies a series of Arabic and Persian words used in the text of the work and works on a dictionary. Practice a few lines in a workbook to identify words that are difficult to spell.

The above tasks can be performed based on the following example:

1. The text is read independently by members of a small group and translated into the current spelling:

Abdulla Avloni "Turkish Gulistan or Morality"

Hifzi lison

Hifzi lison means that every nation preserves its native language and literature. Language and literature are the lifeblood of any nation in the world. To lose the national language is to lose the spirit of the nation. Hayhot! We Turkestans are forgetting and losing day by day, let alone preserving the national language. We lack Arabic and Persian connections to half of our language, and we are sticking Russian to one side. True, knowing the Russian language, which is our government, is as important as soup and bread for our lives and happiness. Adding flaxseed oil, mixing it like a muskrat, and mixing it up spoils the spirit of the language. "Yohu! What happened to us? We went out of our way. Look for a bad house until you get a good one. " We have no shortage of sacred language and literature that was passed down to our ancestors. If we search for our home, we will find the lost ones. "It's a shame and a shame to put on a European hat and laugh", he said. It is said that the Prophet (peace and blessings of Allaah be upon him) said:

Ey ona til, aziz qadrdonim,
Iltifoti ruhim, rahmonim,
Tug'dig'im kundan aylading ulfat,
O'lguncha ayilma, ey jonim.
Menga ilmu adab san o'rgatding,
Chin adib, muallim shonim.
Illating ruhini ko'targuchisan
Ey muqaddas karamlik sultonim.
O mother tongue, my dear,
Compliment my soul, my mercy,
You've been my friend since I was born,
Don't wake up, my dear.
You taught me science and manners,
True scholar, teacher fame.
You lift your spirits
O holy generous sultan.

It is necessary to preserve the common national language as well as the language between the private people. Because the word is a scale that measures a person's level and perfection, knowledge and phase. The wise know the thoughts and intentions of the heart, the knowledge and the power, the dignity and worth.

2. The content of the text is briefly explained:

Abdullah Avloni pays great attention to the issue of language, interpreting the language in relation to the people: "The mirror of the life of any nation in the world is the language and literature of life". In his work, he emphasizes the need for everyone to know their native language perfectly, to use every word in its proper place, and to work hard for the development of the national literary language. "To preserve their language and literature. Abdullah Avloni called on his compatriots to use the inexhaustible resources of the national language, to increase its richness and to appreciate it.

3. A number of Arabic and Persian words used in the text are identified:

MORALITY [4, p. 120] [a. اخلاق - human nature] A book that explains the goodness of good manners, the evilness of bad manners, with evidence and examples, is called morality.

KNOWLEDGE [4, p. 607] [a. علم - knowledge; fan; theory] Science is a very high and sacred quality for man.

RELIGION [4, p. 195] [a. ديانت -din; faith; religious doctrine; belief] Religion is a sacred belief that brings one closer to God, and there is nothing more beloved in the universe.

TEACHER [4, p. 622] [a. معلم - teacher, tutor; teacher] If not, then the teacher says, "Which teacher? 4. Spelling words are practiced in several lines:

حِفظ   عفو ....

لِسان..

عربى...

فارسى..

حکومت ....

اخلاق..

and so on.

To save time, leaders are selected from among the group members, who share the basic information about the studied text with their group members.

Leaders' opinions are filled by group members.

Once all the groups have mastered the text, the texts are swapped between groups.

In the above order, students will master the whole text, which will cover the essence of the topic.

The second step in applying the method is as follows:

• Each group will be asked to give two opinions on the topic to be mastered, namely the passages from Abdullah Avloni's "Turkish Gulistan or Morality" ("Education", "Physical Education", "Thought Education", "Moral Education").

Note: Each group takes turns commenting;

• 1st group students on the topic of "Education":

1). Abdullah Avloni in his book "Turkish Gulistan or Morality" describes "Pedagogy" as "the science of child rearing";

2). Abdullah Avloni discusses the types of education under the heading "Education";

• 2nd group students on the topic "Physical Education":

1). According to Abdullah Avloni, it is necessary to cultivate the body in order to have a sound mind, good morals, and enlightenment;

2). "A healthy and strong body is the most important thing for a person;

• Group 3 students on "Thinking Education";

1). Abdullah Avloni entrusts the intellectual development of the child not to the family, but to the school, to the teachers;

2). Thought makes a person virtuous and zealous;

• Students of subgroup 4 on the topic "Morality":

1). Abdullah Avloni in his time wanted to inculcate in the younger generation true human moral qualities;

2). In this work, Abdullah Avloni focuses on the great role of upbringing before moving on to the issue of good and bad behavior, and says that children should be brought up from an early age, and so on. list their thoughts.

• *The ideas expressed are written on the board.*

• *The teacher then distributes the text to the groups, highlighting the essence of the new topic we mentioned above.*

• *The groups review the text to determine the extent to which the text and the ideas they express are consistent (similarities and differences are represented by special symbols).*

• *Team members express their personal views and the number of special characters is summarized.*

• Leaders present the group results to the group.

• The approaches of the groups are summarized and a final conclusion is drawn.

Conclusion

To conclude, we can say that the teaching of the old Uzbek script in the field of education of the Uzbek language and literature is a reflection of the rich literary heritage we have mentioned above, that is, the manuscript sources. It is a very important step in learning. Teaching students the old Uzbek script on the basis of various interactive methods is of practical importance in developing skills and competencies in this field. Because it is impossible for a student to reach the level of a modern specialist without an analytical study of the historical development of our language and classical literature.

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WORK ON WORD FORMATION IN NATIONAL GROUPS OF PHILOLOGICAL FACULTIES OF UNIVERSITIES

Abstract: *The article describes how the work on word formation is carried out in the national groups of philological faculties of universities. By instilling in students the skill of a thoughtful attitude to the morphemic structure of a word, to the ways of word formation, the teacher enriches the theoretical knowledge of students, develops their speech and mental abilities, develops spelling vigilance.*
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РАБОТА ПО СЛОВООБРАЗОВАНИЮ В НАЦИОНАЛЬНЫХ ГРУППАХ ФИЛОЛОГИЧЕСКИХ ФАКУЛЬТЕТОВ УНИВЕРСИТЕТОВ

Аннотация: *В статье говорится о том, как проводится работа по словообразованию в национальных группах филологических факультетов университетов. Прививая студентам навык вдумчивого отношения к морфемной структуре слова, к способам образования слов, преподаватель обогащает теоретические знания студентов, развивает их речевые и умственные способности, вырабатывает орфографическую зоркость.*
Ключевые слова: *структура, слова, образование, филология, орфография, исследование.*

Введение

Академик В.В. Виноградов писал: «Словообразование является предметом и грамматического, и лексического исследования… словообразование тесно сближается с морфологией и в то же время оно неотрывно от лексикологии».

В курсе «Современный русский литературный язык» совершенствование преподавания морфемики в её различных аспектах является актуальной проблемой. Однако языковые факты и явления в сфере русской морфемики представлены и истолкованы в учебниках недостаточно полно, мало описываются системные отношения морфемных единиц, их семантика, функционирование. Фактически русская морфемика ещё не получила учебной адаптации. В учебниках и учебных пособиях по современному русскому языку в соответствующих разделах в основном характеризуются виды и типы морфем, иллюстрируемые немногочисленными примерами, что несомненно, влияет на усвоение изучаемого материала.

Структуру лекционного курса можно построить следующим образом:

1. Введение.
2. Семантика русских морфем.
3. Полисемия, синонимия, антонимия морфем.
4. Ядро и периферия системы морфем русского языка.
5. Морфемы русского языка с точки зрения их происхождения.

Во вводной части необходимо показать, что морфемный уровень современного русского языка

представляет собой обширный состав единиц, находящихся в разнообразных системных отношениях между собой, сопоставить существующие в русистике теоретические взгляды на сущность морфем, осветить семантическую природу этих единиц, их функции. На конкретных примерах рассматривается соотношение семантики морфем и слов.

Студентам сообщаются традиционные воззрения на природу морфем, традиционная их классификация – деление морфем на корневые и аффиксальные, аффиксальные в свою очередь на префиксальные, суффиксальные и т.д.

Раскрывая семантику морфем, следует показать нередко наблюдаемую близость их значений лексическим значениям слов.

«… Существует синонимия аффиксальных и корневых морфем. Так, флексия глаголов I лица единственного числа – у синонимична местоимению I лица единственного числа я, приставка прилагательных пре – синонимична наречию очень (ср.: премилый – очень милый), глагольная приставка за – слову начать (ср.: забегал, закричал – начал бегать, кричать), суффикс существительных – ик синонимичен слову маленький (ср.: домик – маленький дом, столик – маленький стол). »

Н.М. Шанский отмечает вещественное значение определённых аффиксов: «- ина суффикс со значением «мясо» (баранина, говядина), - льня – суффикс места (читальня, спальня, гладильня), - оват – суффикс неполноты качества (беловатый. длинноватый).»

Системность морфем проявляется и в наличии определённых структурно-семантических связей. Можно выделить три основных типа таких взаимоотношений: 1) одни и те же морфемы имеют разное значение, 2) разные морфемы имеют одинаковое или близкое значение, 3) разные морфемы выражают противоположные значения, то есть можно говорить о морфемной полисемии, синонимии и антонимии.

Описание многозначности морфем, морфемной омонимии, синонимии и антонимии существует в лингвистической и лексикографической литературе.

Говоря о полисемии аффиксов, следует отметить, что в русском языке преобладают многозначные морфемы: за – 1) с другой стороны (Закавказье), 2) доверху (засыпать), 3) попутное действие (заехать за кем-либо), 4) начало (запеть); -ок 1) действие (бросок, кивок), 2) предмет (звонок, движок).

Значительно реже морфемы характеризуются однозначностью, однозначны, как правило, заимствованные морфемы (а - , анти -, - фии, -фоб и др.), а также некоторые исконные морфемы (без-, вне-, через-, чрез- и др.).

В отличие от полисемии существует и морфемная омонимия, когда значения сходных по форме единиц ни исторически, ни с современной точки зрения не вытекают друг из друга: в сфере русских аффиксов это выделяется сравнительно нечасто: (возить – возвести, в доме – прочитав, отрезать – доброта и т.д.)

Синонимия охватывает большинство аффиксальных морфем. Так, приставки а- , без-, дис-, им-, не- имеют значение отрицания, отсутствия (аполитичный, безнравственный, дискомфорт, имморальный, неуклюжий); суффиксы – тель, - ник, -чик, - ец, -арь, - ант и др. значение лица (учитель, плотник, летчик, пекарь, боец, курсант); суффиксы –н-, -ан, -ов - отношение к веществу (сахарный, кожаный, медовый) и т.д.

Главным средством выражения морфемной антонимии являются словообразовательные аффиксы (приставки и суффиксы). Регулярно коррелируют по антонимии приставки, ообозначающие признак действия (в - -вы-: входить – выходить, недо - -пере-: недовыполнить – перевыполнить, при - -у-: приезжать – уезжать и др.); признак признака (за- - под-: заоблачный – подоблачный, над - - под-: надводный - подводный). Иногда можно говорить об энантиосемии – антонимии среди разных значений одной морфемы: под- 1) вверх (подбросить, подпрыгнуть), 2) вниз (подложить, подставить); с – 1) удаление (срезать, спилить), 2) соединение (склеить, связать).

Значительно менее, чем приставкам, явление антонимии свойственно суффиксам. В антонимические отношения вступают суффиксы субъективной оценки: - к - -ищ- (бородка - бородища), - ик- -ин- (домик-домина); суффиксы родовой принадлежности: -ак- _ -ын- (гусак - гусыня); суффиксы числа: - онок - _ -ат- (медвежонок - медвежата).

Антонимичными могут быть заимствованные морфемы – как приставки, так и суффиксы: приставки поли - - моно- (полисемия - моносемия), макро - - микро- (макромир - микромир), про- - анти- (профашистский - антифашистский) и т.д.; суффиксы –фин – фоб (славянофии - славянофоб), -ат –ант (адресат-адресант) и др.

Целесообразно обратить внимание студентов на деление морфемных значений на основные ядро и неосновные (периферийные): профессионализмы, диалектизмы, жаргонизмы, архаизмы, неологизмы. Такая классификация нацеливает студентов на конкретную речевую дифференциацию значений морфем.

К профессиональными относятся аффиксы, принадлежащие к определенным номенклатурам: -ит –«воспаление» (бронхит, гастрит), -ий – «химический элемент» (курчатовый, германий).

Диалектизмами являются приставка ко- (закоулок, коверкать), суффикс – ак в словах коршак (коршун), лешак (леший) и др.

К архаизмам следует отнести суффикс – арь в словах лекарь, знахарь, рыбарь, поскольку он употребляется для обозначения лица по профессии преимущественно в прошлом и мало в настоящем (аптекарь, библиотекарь).

Неологизм –аффикс – гораздо более редкое явление, чем неологизм – слово. Источником образования неологизмов – аффиксов являются заимствования последнего времени из других языков (мини-, макси-, миди-), а на русской почве – корреляция между предлогами и приставками (вдоль рядов – вдольрядный, вне конкурса - внеконкурсный).

По происхождению различаются исконно русские и заимствованные морфемы. Большую часть составляют морфемы первой группы. Морфемы – заимствования представлены старославянизмами: пре- (предобрый, премилый), пред- (предвидеть, предложить,) - тель (сеятель, учитель) – и заимствования из европейских языков – французского: дез-(дезинформация), - ат (арбитраж), -ёр (боксёр); английского: - инг (прессинг, кроссинг); немецкого: - ир (кассир), - итет (генералитет); греческого: анти – (антивоенный), -дром (аэродром); латинского: де- (дешифровка), интер – (интернациональный).

Необходимо отметить, что заимствуют из одного языка в другой не аффиксы, а слова, содержащие их. Аффикс, заимствованный вместе со словом, затем (при определённых условиях) начинает восприниматься как значимый, чем и обусловливается его дальнейшее функционирование в словообразовательной системе языка.

В ряде случаев значение заимствованного аффикса остаётся затемнённым (чайхана, патронаж, почтамт), тогда он воспринимается как асемантичный (и иногда классифицируется как унификс).

Между тем в языке – источнике этот элемент имеет вполне определённое значение. Так, -хон-а в тюркских языках обозначает «помещение – кутубхона (библиотека), ошхона (столовая)».

Существующие упражнения по морфемике нацеливают студентов на разбор слов по составу, на определение места мофемы в слове. С точки зрения обучения русскому языку нерусских важно обратить внимание на то, как зависит постановка аффикса в слове от его семантических свойств, от его роли в высказывании. Выполнение упражнений должно способствовать оптимальному усвоению студентами системы морфемных единиц русского языка и усвоению лингвистической теории вообще, умению учитывать их при восприятии речи и следовательно, совершенствованию речи в целом.

Этой цели могут служить следующие типы упражнений.

1. Произведите морфемный анализ слов. Объясните значение каждой морфемы.

Такого рода упражнения следует выполнять в аудитории, дав студентам небольшое время для подготовки обоснованного ответа, поощряя их пользоваться при этом лекционным материалом и толковыми словарями. Однако во время подготовки ответа следует избегать обращения к словообразовательному словарю. Его можно использовать лишь в конце, как своего рода ключ, проверяя правильность выполнения.

2. К данным словам дайте аналоги слов или словосочетаний родного языка. Установите, какой компонент слова или словосочетания в аналоге родного языка соответствует каждому компоненту русского языка.

Цель этого упражнения – ещё раз обратить внимание на семантику русских морфем, на осознанию её, в частности, посредством соотнесения с семантикой отдельных слов или частей слов родного языка.

3. В данных словах выделите корень. Подберите к ним однокоренные слова, в которых имеются варианты того же корня (брать – беру, собирать, разбор). С выявленными словами, имеющими варианты корней, составьте высказывания.

4. Выделите корень в каждом слове приведенных пар, определите, в каких случаях в паре имеются варианты одного корня, а в каких – разные корни (лгать-ложь, зрение-зоркий).

5. Объясните значения приставок в данных словах (втолкнуть, выбежать, дописать); в тех случаях, где это возможно, приведите однокоренные слова с антонимичными приставками.

6. Объясните значения приставки с- в данных словах; отметьте слова, в которых приставка с- без контекста может быть понята по-разному, т.е. иметь разные значения.

7. Среди значений приставки пере- (их более десяти) отмечаются следующие: 1) направление действия через что-нибудь;

2) повторение действия заново; 3) чрезмерность, излишек в действии. Приведите примеры из глаголов с приставкой пере-, значения которых без контекста могут быть понятны по-разному.

8. Образуйте из данных словосочетаний производные слова, используя суффиксы –ун. – ант,-тель,-чик, - ок, -арь, -ник. (тот, кто читает – читатель, тот, кто бегает-бегун).

9. Пользуясь словарём, распределите данные существительные на две группы:

1) со значением лица;

2) со значением механизма (писатель, взрыватель, паяльник, наследник).

10. Определите значения суффиксов в нижеприведённых словах. Сгруппируйте слова с синонимичными суффиксами: материнский, отцов, сестрин, дедушкин, слесарев, медвежий.

11. Установите значения омонимичных суффиксов и распределите слова по смысловым рядам (хворстина, свинина, мамин).

12. отметьте и истолкуйте заимствованные морфемы в следующих словах. Замените, где возможно, заимствованные морфемы исконно русскими (славянофии, интернациональный, квазинаучный).

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QR – Issue   QR – Article

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OXYMORON-AN UNUSUAL COMPOUND

Abstract: *This article discusses the features of the oxymoron method, which is formed in a phrase template and serves to express unusual phrases or ideas.*

Key words: *oxymoron, unusual phrases, syntactic pattern, valence, control, adhesion, adaptation, semantic relation.*

Language: *English*

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Introduction

Every branch of society, every activity has its own rules and membership of origin and development. As in all disciplines, linguistics has its own rules. One of the main functions of language is for people to interact with each other, to pass information on to the next generation. To achieve this goal, rules such as the chain of sounds between the speaker and the listener, the combination of words, the sequence of sentences, the logic of thought are followed. First of all, it is necessary to attach words that complement each other in content for oral communication. Because words are logically connected to each other and have specific rules for achieving a specific goal. Such rules, the connection of words with each other for a specific purpose and purpose, are studied in the grammatical part of linguistics.

The main part

Grammar includes morphology and syntax. Morphology determines the structure of the word: word forms, ways of their formation, the rules of change of the word in speech, teaches word categories. Syntax, on the other hand, examines the ways in which parts of speech are joined in a sentence and in a sentence, the types of sentence structure.

Hence, it is clear that morphology and syntax are inextricably linked. Because as the morphological sign of words changes, so does their syntactic function. For words to be interconnected, they require internal grammatical consistency. This internal compatibility - the introduction of words into a grammatical relationship - serves to ensure that external compatibility is related.

From the above considerations, it can be seen that the internal and external compatibility of the components is of great importance for the formation of various conventional word combinations, conventional constructions using words. For example: *kitob oʻqimoq, chiroili gum, baland bino (reading a book, a beautiful flower, a tall building)*. Here, the components of a book-reading phrase are combined based on each other's semantic-grammatical compatibility. Because the word *read* itself is like *a newspaper, a book, a magazine, a letter*; and the word *building* is combined with words denoting signs such as *high, low, large, small, beautiful*, creating semantic-syntactic valence.

However, language does not always follow the rules so that people can convey their thoughts and opinions to the listener as much as possible. Sometimes it is necessary to deviate from the rules of language in order to achieve the intended purpose, and to express its intention even by attaching words that cannot be semantically connected. H. Abdurahmanov and N. Mahmudov in the work "Aesthetics of words" conditionally call such connected compounds in speech conditionally unusual compounds [1]. This intention is more and more reflected, especially in literary texts. Because the use of words in a literary

text in clear lexical meanings alone is not sufficient to reveal the full and varied semantic aspects of thought. Therefore, often, the rules of language are not always fully followed in the speech of the phonetic, lexical, grammatical units of the language when the speakers enter into a verbal communication with each other, choosing the appropriate one based on the speech situation and expressing the inner experiences of the speaker. Sometimes it is necessary to violate certain grammatical rules in order to increase the effectiveness of the event described by the speaker. We cannot call such a speech illogical. Often, in the coverage of an event, or in the characterization of something, the listener or reader has to resort to a few words to describe it in a way that is understandable, clear. At such times, the speaker or creator uses linguistic means that can make the idea clearer. Because the expression of thought through linguistic means helps to reveal even the subtleties of a brighter, more understandable, creative inner experience than non-linguistic expression.

"Fiction loves originality and variety. The use of special means of artistic imagery makes the language of a literary work juicy, colorful and attractive" [2]. Because in his work, the artist skillfully uses the special pictorial means of language, trying to convey the hidden logical-philosophical thought and idea to the listener in a short, concise, understandable, captivating way, captivating the reader. The proper use of the methodological means of language serves to fully achieve the ideological and artistic goal of the author.

Special means of artistic expression are not only the poetic decoration of the work, but also a realistic means of concretizing the idea of the work. The true depiction of life in the play, the typicality of the characters, the importance of the aesthetic ideal interpreted by the artist, the popularity of the work, the writer's skill in achieving unity of form and content, the strong educational and aesthetic impact of the work - all depend on the art of skillful use of artistic means [2].

Methodological tools of language are studied in linguistic and literary works under such terms as tropes, syntactic figures, stylistic figures, stylistic devices, figurative expressions, poetic syntax, rhetorical syntax, poetic movements [3;4;5;6;7;8;9;10;11].

One of the means of increasing the attractiveness, emotional expressiveness of a literary text is the oxymoron. Despite the fact that many opinions have been expressed about the oxymoron of world linguistics and literary criticism, this issue has not yet been sufficiently studied in Uzbek linguistics. A certain aspect of the oxymoron: its structure, the connection of the parts, the functional-semantic relations between its components are not widely considered. In linguistics, a syntactic device is a syntactic device formed as a result of the connection

of two (or more) independent words that interact grammatically and semantically with each other and form a whole. Oxymoron is a special type of phrase that differs from the usual phrase. This is why oxymoron is considered an unusual phrase.

Oxymoron components are semantically abnormally linked to each other in contrast to the usual connection of words. Such a connection occurs only in the context and expresses a specific aesthetic content in the literary text or speech. Even though such unusually connected compounds (oxymorons) are difficult to understand directly, their ideological interpretation is conveyed to the reader through a series of applied sentences that are intellectually and semantically related. These statements unite around the semantic nucleus expressed by the oxymoron and reveal its essence. As a result, the artist has the opportunity to embody the main idea of the whole work, which he wants to express in an extraordinary way through an oxymoron. Oxymorons can emerge not only in a work of art, but also in other areas by combining logically contradictory concepts, forms, events, and processes at some point. With their help, the intention intended by the author is realized. For him, too, even though the oxymoron parts are formed on the basis of a contradictory bond, it is expedient to evaluate them as a compound in a logical bond rather than an illogical one, given that they serve a specific purpose.

Oxymorons can be studied in two ways:
1. Simple oxymorons;
2. Complex oxymorons.

In the Uzbek language, oxymorons, like ordinary phrases, are formed on the basis of seemant-grammatical relations of subordinate clauses, ie the process of formation of oxymorons corresponds to ordinary phrases, but the meaning of expression is unusual, ie the semantic relationship "object and its sign" is unexpected, different. will have edges of emotional meaning. Oxymorons consist mainly of words with two independent meanings, the construction of which consists of syntactically related attributive, objective, relativistic, predicative relations, in which the meaning of the first component is logically the meaning of the second component or, conversely, the meaning of the second component is the meaning of the first component. can deny: for example, ***sassiz nola, otashin muzlar, tobutdan tovush, soqov ko'p gapirdi, cho'loq ko'p yugurdi, siniq jilmaydi (silent moaning, fiery ice, the sound of a coffin, the dumb spoke a lot, the lame ran a lot, a broken smile)***.

Simple oxymarone components are bonded by adhesion, control, and adaptation:

managed connection: ***tobutdan tovush, ataladan suyak;***

adaptation*: **coqovning baqirig'i, o'limning sovuq labidan o'pich olguniga qadar azob jomini***

sipqorib, hayotdan to'yishiga imkon yaratiladi (Tohir Malik);

adhesive bond: **qora olovn, ulkan sukunat**.

Sometimes oxymorons can also expand with a word with several independent meanings. For example, **baland martabali dastyor** (high-ranking assistant), **Shivirlab aytilgan gapning jarangi vujudni larzaga keltirdi** (The sound of the whisper shook the body) (Tohir Malik). Such compounds are called complex oxymorons.

"Oxymoron compounds in the text consist mainly of two components and interact with each other and are formed on the basis of grammatical models such as adjective + noun, adjective + noun, noun + noun, number + noun, ie the main part of unusual compounds are noun compounds [12]. True, oxymorons are mostly composed of equine compounds, but verb compounds are also found in speech. For example: *Ko'zi Bo'ronda to'xtab, unga tikilib qoldi. **Mayus jilmaydi**. (Tohir Malik). Hakimjon yana ham bo'g'ildi, lekin non yopayotgan Muhayo eshitmasin uchun **qattiq shivirladi**. (Abdulla Qahhor). Bu savolni eshitib, adib **siniq jilmaydi**. (Tohir Malik).*

According to the syntactic pattern, oxymorons can be divided into two types:

1. Oxymarons in the form of a phrase.
2. Oxymarons in the speech pattern.

The following examples can be given for an oxymoron in a phrase. For example:

Lov-lov yonayotir quyosh-ul najot,
Osmon chorlayotir, chorlar yuxak tog'.
*Shunday yuragimda **tovushsiz faryod**. (R. Parfi)*

Hech narsa yupatmas shoir, hech narsa,
***G'arib baxtiyorlik** endy yupatar.*
Yulib vujudimni titib axtarsam
Dunyoviy alamni toshlari yotar. (R. Parfi)

Oxymarons, which are fully formed like a sentence, are oxymarons in the sentence pattern.

Sensiz dunyo menga nimadir, gulim,
Har ne unut bo'lur har neki ezgu.
***Qonimni muzlatar tirilgan o'lim**. (R. Parfi)*

Mayus edi sening ko'zlaring g'oyat,
Go'yo yo'lsiz o'rmon barglarin to'kib,
Qora yolqinlikda shivirlar oyat,
***Ko'zlaringni tinglayapman entikib**. (R. Parfi)*

Oxymarone can be divided into two according to the morphological nature of the dominant components, just like the usual phrase:

1. Equestrian compounds: *Balki o'sha sovuq palla yer yuzasidadir? Bu **sovuq do'zax** o'sha g'azab mayi sochilganda yuzaga kelgandir? (Tohir Malik). Shu so'ngi **so'zsiz nido** bilan yurak to'xtadi. (Tohir Malik).*

2. Verb compounds.

The expressive material of oxymarons, the constituent components of which are verbs, is formed as follows: horse + verb, form + verb.

Tuproqdan taralar mayin, hush nafas,
Yerning nafasi bu, sirli hovur bu.
*Ha, u orzularin **aytmoqda besas**,*
Uning armoni bu, unsiz g'ovur bu! (Oxunjon Hakim)

*- "So'na" ... otam sevgan kitob ... – dedi armonli ohangda. - Qayta-qayta o'qiyverarkanlar. Hatto ... - endi **alamli jilmaydi**, - chimildiqda ham o'qigan ekanlar. (Tohir Malik*

Conclusion

In conclusion, we can emphasize that oxymorons are formed in the pattern of ordinary phrases and serve to express an unusual concept or idea, abnormality is the main characteristic of oxymorons and is a distinct manifestation of migratory (trop) species.

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Clarivate
Analytics indexed

QR – Issue   QR – Article

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THE USE OF EXPRESSIVE PHONETIC MEANS IN FARIDA AFROZ'S WORKS

Abstract: This article discusses the possibilities of individual style in the development of art, as well as the phonetic means and phenomena that serve to increase expressiveness. Thoughts on the subject are evidenced by the poetic works of Farida Afroz.
Key words: aesthetic function, methodological tools, language of the work of melody, fusion, sound acquisition, articulation.
Language: English
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Introduction

It is easy to imagine that a person perceives the external world in his own way, by recalling the myriad metaphors of language. This determines the individual style of speech of each language speaker. Individual research is important in identifying findings that enrich and expand the potential of our language.

In the field of stylistics in Uzbek linguistics the merits of such scientists as A.Shomaqsudov, E.Qilichev, I.Rasulov, A.Mamajonov, A.Abdullayev, R.Qo'ng'urov, N. Mahmudov, M.Mukarramov, U.Abdurahmunov, M.Mirtojiyev, B. Yo'ldoshev, M.Yo'ldoshev are great.

The main part

In the history of world linguistics, it can be observed that different and different approaches to the phenomenon of language have emerged. Of course, for these approaches a certain aspect of language is taken as a basis, an attempt is made to reveal this same aspect more deeply, all the peculiarities of the whole complex essence of language are studied from this point of view ... The existence of aspect does not deny the existence of aesthetics (beauty, art). Therefore, all these features must be taken into account when revealing the essence of language[9, 3]. The fact that language is multifunctional shows just how serious an approach is to small research within a particular language. Man has not only the language to which he belongs, but also an individual way of perceiving a certain national-cultural mentality and reality. Language also reflects a person's mental, inner world, mental level, and linguistic personality. Therefore, in recent years, there has been a significant increase in the anthropocentric study of the role of language units in the relationship between man and the world, the psyche of the linguistic person, the expression of thoughts, dreams and hopes.

While the current stage of development of linguistics requires an anthropocentric approach, it can be said that "anthropocentrism is not just a concept or paradigm attributed by linguists to the study of language, anthropocentrism is a phenomenon directly related to the essence of language."[9, 6] The fact that man is at the heart of this paradigm increases interest in research into the aesthetic or expressive function of language. The fact that textual research plays an important role shows that much attention is paid to this very function of language.

In recent years, textual research has focused on the stylistic, sociolinguistic, psycholinguistic and methodological aspects of the communication process. The researches of A.Nurmonov, Z.Tohirov, D.Lutfullayeva, Sh.Iskandarova, S.Muminov,

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Sh.Safarov, M.Hakimov, I.Khojaliyev, M.Saidkhonov, S.Maksumova, A.Kochiboyev, D. Khudoiberganova, E.Ibragimova, S.Kurbanova, M.Kurbanova, M.Gaziyeva, N.Kazakova and others are also noteworthy.

To date, much research has been done on the aesthetic function of language. As a result of his research, a number of textbooks and manuals on stylistics, as well as a large number of studies devoted to the study of methodological tools have emerged. Many stylistic advances have been made in these studies. In particular, L. Abdullayeva in her monograph discussed the problems of lexical stylistics of the language of Uzbek literature. In Abdullayev's research, he tried to show the methods and means of expressiveness at all levels of language. In his book "Lexical means of artistic image" E. Kilichev focuses on the lexical means involved in the creation of artistic image, their possibilities of expression. B. Umurkulov's monograph "Vocabulary of Poetic Speech" (1990) explores issues such as lexical sources of modern Uzbek poetic language, poetic lexicon, traditional poetics, word variants, their aesthetic significance. In the works of M. Yuldashev the text and its types, ways of methodical analysis of the literary text are considered in detail. The books of N. Mahmudov and H. Abdurahmanov also contain valuable ideas about the possibilities of lexical units that have an aesthetic effect. It should be noted that the book "Methodological tools" by A. Mamajonov and U. Mahmudov contains valuable ideas about a number of methodological figures, such as antithesis, parallelism, counting, gradation, inversion.

"Literary text, unlike any non-fiction text, performs a special task - an aesthetic task, which is manifested in a complex interaction with the communicative task and is a decisive factor in the specific structure of the text." [6, 5]. M. Yuldashev says: "In the works devoted to the study of the language of fiction, along with the term" expressive function "of language," poetic function of language "," artistic function of language "," aesthetic function of language " terms such as However, it should be noted that the term "aesthetic function of language" is used relatively often in the philological literature. This is natural, because the concept of aesthetic task can generalize them, including a number of concepts such as expressiveness, art, poetics. In other words, the scope of the concept of aesthetic function is much broader than these concepts.[3, 7-8]

"Everything that makes a speech brighter, more moving, more impressive is expression. So, expressiveness of speech is a means of making speech bright, effective, and imaginative" [5, 99]. From this point of view, one can see the infinite possibilities of expressiveness at all levels throughout the hierarchical system of language.

Speech sounds are one of the most important units in the formation of speech and serve as one of the most important tools in the analysis of literary text. Phonetic stylistics studies the expressive-stylistic possibilities of the interconnection of sounds, in general, the laws by which speech sounds can serve as an effective means of language.

In the process of analyzing a literary text, special attention should also be paid to the aesthetic features of phonetic units. In a poetic text, the aesthetic possibilities of speech sounds are quickly and easily perceived. Because the poem has a unique melody. This melody is achieved through the methodical use of sounds[2, 45].

Typically, in fiction, more lyrical works, sounds, accents, and tone are important methodological tools in increasing emotional sensitivity. The various forms and methods of melodic speech, by their very nature and essence, are peculiar to poetic speech. Poetic speech is an exciting rhythmic speech that is organized in terms of tone and emerges as an expression of emotion. Poetry is characterized by the widespread use of certain means of regulating the tone of speech (for example, rhythm, rhyme, radif, band, etc.). Therefore, the structure of the poem stands out as a special branch of phonetic stylistics.

It is known that as a result of the aesthetic use of sounds, phonetic methods such as alliteration, assonance, gemination are used in poetry. In prose, expressiveness is provided by phonetic methods such as stretching vowels, folding consonants, repeating sounds, mispronouncing words, adding or subtracting sounds [1, 85]. However, the possibilities of individual styles are so wide that phonetic methods such as lengthening vowels, folding consonants, repeating sounds, changing the pronunciation of words: gaining, lowering or subjugating words are also widely used in poetic speech.

Today's interdisciplinary integrative research shows that "since ancient times, the pronunciation of a word and the problem of transcribing it into writing have attracted the attention of thinkers. Even though this was not related to the art of oratory, the harmony of the tones associated with the pronunciation of the word, the sounds in the word, was an inspiration to the great philosophers. They wanted to "give a special meaning to sounds that have not yet been absorbed into the word structure and acquired a specific meaning and tone." [7].

Sounds have their own peculiarities in terms of their use in speech, so in a poetic text the euphonic (euphony - melodic, melodic) [11] features of sounds are the leading ones. This feature can be caused by dropping certain sounds or syllables from the root morpheme, adding sound to the root morpheme, or repeating sounds or syllables.

The sound content of any core morpheme cannot be changed. When sounds are distorted or mispronounced, the meaning of words is distorted and their effectiveness is impaired. Sounds are not always inseparable from thought, thought occurs in relation to

sound, how the sound is related to the sound, the amount of sound is expressed in less or more, it is closely related to methodological factors.[13, 82] According to J. Mamatov, due to the desire for ease of pronunciation, various phonetic changes occur in the chain of sounds in speech[8, 61]. In addition, phonetic phenomena can be caused by factors such as a tendency to be concise in speech, a lack of emphasis on the syllable, a hurried pronunciation, or difficulty in pronouncing words in other languages. For the above purposes, R. Yusubova notes that phonetic savings are common in speech, but there are also cases of vocalization in the core. For example, we can confirm our opinion with examples from the work of Farida Afro'z:

Hirotning samoviy minoralari,
Temurbek naslining *chinora*lari,
Mirzo Ulug'bekning sitoralari –
Sohira begimsiz,
Gavharshod Begim.

Here, the speaker added a to the root of the word maple to create a melody and to highlight the quality of the image of a woman (to express the gender), to emphasize the respect for women inherent in our mentality. There is no rod category in our language. However, this phenomenon is understood without exception in some words borrowed from other languages (for example: Karim – Karima).

In the following part of the speech, the author chooses to ensure the harmony of the melody by adding the vowel a at the core of the word **chor** (Persian "thorn") and to emphasize the "tormenting" undertone in the sense of the word, kindness to the poetic image, has achieved a strong expression of grief:

Termulding, ko'zingga kirdi *xora*lar,
Bir yonda majnunlar, ul bechoralar,
Bir yonda munofiq, yuzi qoralar,
Ayol! Oh, Ayol!

As mentioned above, the phenomenon of phonetic saving is more common in poetry. There are other reasons for the use of phonetic saving, in addition to the simplification of pronunciation, the saving of the use of language tools: 1) change with poetic requirements - a deviation from the norm. For example, changing the scale in poems to adjust; 2) phonetic diversity serves to strengthen the content, expressiveness, expression of emotions, to characterize the character in a work of art in terms of speech, individualization - serves a stylistic purpose [15, 367].

The phenomenon of fusion often occurs in the middle or at the end of a word. Sound in the middle of a word:

Bosh egding, yutganing qahr bo'ldi-ku,
Osh berding, qaytgani *zahr* bo'ldi-ku,
Haq eding va haqqing mahr bo'ldi-ku,
Ayol! Oh, Ayol!

In the example, the vowel in the second syllable of the word *zahar* poison is omitted to form a rhyme that matches the words anger and dowry, as well as to exaggerate the negative tone of the word. Because there is music in the flour, and the drop of the flour in this place reduces this gentle tone, and the negative undertone appears.

Joning bo'lsa
sadqa bo'lsin, e'tiqoding yo'lida.
Oring bo'lsa
qilich bo'lsin, xiyonatning to'yida.

At this point, the vowel in the second syllable of the word sadaqa is taken down by the logical demand of the word of faith, which is logically connected to that word. This form of fusion is more common in classical literature.

Dropping the last sound in the stem (apacopa):
a)   Hasrat
demang, jonim qolmadi,
Umr emas, bu umr emas!
Bu bir
o'choq, tutab, yonmadi,
Bu bir *xotir*, rangi yo'q, elas!
b) Har tong qaytib gullaydi,
Chaqin urgan *xotirim*.
Oti bor-u o'zi yo'q,
Ertakdagi botirim –
Kel, ey, mening mensizim.

In both examples, the same sound at the end of the memory word is recorded to create both semantic and formal harmony according to the meaning of the word. In other words, the form of the word "elas," "lightning," "trauma," which means memory, has also deteriorated. This is explained by the style owner's skill in using language units.

As mentioned above, for methodological purposes, sometimes not only the sound in a word, but also a syllable or a combination of sounds is omitted:

Og'lim,
ko'zlaringda yosh ko'rmay sira,
Senga yarashadi kulmoqlik faqat.
Sening tushingga ham kirmagay urush,
Sening tushunchangga sig'magay urush.
Murg'ak yurakchangga solurman faqat
Bir durkun qo'shiq,
Bu qo'shiqni ikkimiz ayturmiz *albat*.

In a poetic passage, of course, the omission of the last syllable of the word occurs in poetic speech. It's a scene bound to endear you and excite your senses.

Below, the combination of "on" sounds at the end of the word **nigoron** is dropped, the melody in the verses is enhanced, and the word "eyes" is intended to be embodied as an image of a person (or person) as important. The meaning of the word **nigoron** (expectant) [14, 36] is superimposed on the meaning of the word **nigor** (beloved, beautiful) [14, 37]. That is, the meaning of the word is enriched by the use of the word "expectant beauty":

Kech kuzakning behilariday,
Qaydan keldi bu nasim, ifor.
Qayda eding, qirq yil yig'ladim,
Qirq yil kutdim, ko'zlarim *nigor.*

Sometimes a special intonation is created by joining a word that expresses an idea:

Ey, g'anim,
Mard bo'lsang gar, maydonga kel,
Nayza ot, ko'ksim tutay, nishonga kel,
Qirga kel, daryoga kel, istasang osmonga kel,
    Faqat,
        Teg-ma!
            Do'stimga!!!

In the following verse, the form of the word is divided into syllables according to its meaning, that is, the word is divided into "forty parts" according to its meaning:

Yomg'ir – mening sog'inch yoshlarim,
Tinay desam, chaqnar chaqin,
Go'yo osmon bo'lar *chil-parchin*
Va
Uzilib Yerga tushadi.

Conclusion

From the above examples, it can be seen that the more appropriate the form and content, the more expressive. As a continuation of a number of studies in the field of methodology, the study of the style of Farida Afroz's poetic works plays an important role in opening up individual-stylistic possibilities.

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MICRO FIELD OF LEXEMES WHICH DENOTE UZBEK PEOPLES' HOLIDAYS AND WORK CEREMONIES

Abstract: This article analyzes the issues of national holidays of the Uzbek people and their special role in the field of ethnography.
Key words: Ethnographies, customs, national traditions, religious holidays, khashar, Navruz, microdistrict, seasonal holidays, lexical units.
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Introduction

Holidays can give clear imagination of social, economic and cultural condition of the country. Because holidays are one of the clearest reflections of social life. Holidays of a developed country are well established by all means.

Like many countries Uzbek people have ancient and at the same time, modern festivals. Among these holidays there are religious beliefs, work and sporting events that are related to connected ceremonies, naturally, the words which denote these events are various. Special ethnographic words have significant position in the sphere of traditions and customs.

The main part

Due to the Independence, opportunities to explore Uzbek customs are expanding. National traditions, several studies of people's holidays are studied thoroughly. The time has come when Uzbek people's holidays are investigated from special and general point of views. In addition, the underestimated heritage is being researched deeply from historical, political, philosophical, moral, study of countries and cultural point of views.

"Work" and "holiday" lexemes have a lot of meanings from the perspectives of customs and traditions. In particular, "work" unity stands out with the following definitions: *job, joy, profession,*

craftsman. It is worth to mention the words which are related to volunteer work *khashar*, volunteer worker *khasharchi*, do not be tired *hormang*, God bless you *bor boling* etc. All of these words have their unique content and meaning.

Khashar lexeme contains the following meanings "work", "customs and traditions", "nationality", "majority", "help", "volunteer work" lexemes can be used as the substitution for this word. Khashar can be defined as one of the wide spread traditions of kindness. In case anyone is going to organize a wedding party, building a new house all relatives, neighbors come to assist with the certain amount of work. It is significant to note that this lexeme has a meaning of "ceremony" as well.

The phrases like 'hormang", "bor boling" can be used if a person has been working for a long time. *Hormang* is addressed to a working person while *bor boling* is a polite answer to it. In many cases the usage of these phrases have become common so lexeme khashar may be separated:

"Do not be tired"-takes away tiredness
"God bless you"-gives inspiration (proverb)
We can divide words which are related to work and holidays into micro fields groups:
1 Seasonal and work holidays
2 Religious holidays
3 Modern holidays

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Seasonal and work holidays serve to reflect our national customs and traditions. "The names of seasonal and work holidays are usually formed with connection to the climate, local conditions and of course culture and work of the people. These holidays are linked to change of seasons of the year and transformations of nature" [1, 13].

Dandelion party, Navruz, Silk cocoon party, Flowers party are spring holidays; Summer fiesta, Grapes party, Watermelon party, Harvest party are summer holidays; The First snow, Winter meetings are connected with winter nature and occupations. Each holiday or party are characterized by certain inner notions. In addition, spring holidays and celebration and work parties which are connected with vocabulary unities there are lexemes like" ceremony", "national", "holiday", "seasonal", "work", "natural", "social", "ancient. For instance, let's analyze the words which are connected with widely celebrated holiday Navruz.

Navruz- beginning of the year (Persian new day) beginning of the spring, equinox-when day and night are equal, it is a celebration of the start of field works.

Each day can be Navruz

Each day must be Navruz

There are certain words which are connected with changes in nature, customs and traditions, people's games, dishes. The lexemes that are related to the holiday of Navruz are the following: green, field, silk weed, earth, renovation, day, work. Some of them (green, new, day) are connected to authentic natural events while others (field, worm seed, earth) are concerned with spring field works.

Quoted lexemes from one perspective of time, condition and from another point of view the words that are related to Navruz stand out. For example, green vocabulary unit is correlated with "time", "season", "time of the year", "renovation" these word have common characteristics, also they have particular connection with "Navruz".

There are special customs and national games which are celebrated in Navruz, so the names of certain words denote particular notions. Also, "Navruz is celebrated widely" is closely connected with Navruz lexeme.

Kurash, goat-skinning, horse races have various vocabulary meanings. Above mentioned lexemes as types of sport have meanings like "sport", "national", "race" they have "holiday", ceremony" meanings.

It is true that Uzbek people's culture of celebrations are so colorful and rich in content that they reflect natural, labor, religious beliefs, family life, socio-political, cultural, art and sport these notions can be divided into many categories and studied.

Sumalak, halim, mint somsa, green ravioli, wheat bread can have various meanings.

In the given table we will investigate lexemes which are related to the previous comments

Table 1.

lexemes	Ethnographisms	
	sumalak	*Halim*
dish	+	+
national	+	+
seasonal	+	+
healing	+	+
regional	-	+
requires long preparation	+	+
wheat	+	+
flour	+	-
meat	-	+

So "sumalak" and "halim" lexemes are combined in the following meanings "dish", "national", "healing", "requiring long preparation", "with wheat" in the content meaning with wheat (sumalak), meat (halim) these lexemes are particular differentiate. It is important to state that these lexemes as the name of the dishes denote food and regarded as one micro field words, from another point of view they have connection with national holidays and can be accepted as custom and traditions lexemes. As a result, they take place in micro field of ethnography.

"The notions which are related to the celebration of summer holidays and parties, originates from summer season, such as "sandy party" is celebrated as a holiday. "There are certain words which are associated with this holiday "sand", "sandy"[2, 76], "sandy hills", "salty sands", "fiesta", "heat", "going into the jug". The paradigm field the word "sand" can be used in the following meanings "thing", "little", "shallow", "grey" and in addition can denote the meaning "healing". "*Last year he went to the sands with his father just heat started.*" T.Parpiyev.

There are a lot of fruit and vegetable parties in autumn, general Harvest holiday has its own position as well. The following fruit unities are connected with it: figs, pomegranates, grapes; name of berries:

watermelon and melon; caravan and cotton; stock and harvest.

There are events and parties that are related to winter season: The first snow, A freezing night, A Yaldo meeting. For example, a Yaldo meeting is regarded as a winter event. For example, A Yaldo meeting is presented widely in the East poetry. (U.Qoraboyev)

There are a number of words that are connected with Yaldo party such as winter, conversation, feast, joy and laughter, chatting, advice. In particular, the lexeme conversation has the following meanings "dialogue", "meeting", "relax" at the same time it can have certain meanings like seasonal, winter, night. There is no relation to work in winter holidays, as a result no words that are related to this theme.

Holidays which are related to religion and beliefs have been formed due to the superstitious. Uzbek people celebrate Eid al-Adha as a Muslim holiday. This holiday is celebrated twice a year.

1 Eid al-Adha

2 Eid al Fitr

Both of these holidays are celebrated officially in Uzbekistan. Eid al Fitr is described in the book "Uzbek people holidays": "As the end of fasting there is a greatest Islamic holiday-Eid al Fitr, it is the final part of a month of fasting, is celebrated on the first three days of Shavval, the tenth month of Islamic calendar.

There are certain ceremonies that are linked with the celebration of this holiday. The vocabulary words that are associated with this holiday: arafa, Eid al Fitr, praying, donation, charity, visiting, wearing best clothes, bride greeting (Tashkent). As it was mentioned before these words can be used as nominal words, also as a group of words they may have "holiday" and "religious" meanings as well [3, 86].

For example, the lexeme of arafa forms the same paradigm with the semes of "time", "before", "after" "in old times", with the semes of "religious", "day" forms the same paradigm with lexemes "holiday", "khayit".

Furthermore, there are special ceremonies which are connected with Eid al Fitr. Most of them are celebrated in holy month Ramadan. They are *iftar*, breaking the fasting, call for Eid al Fitr, Fitr-donation, Laylatul Qadr, Tarovih pray.

There are modern holidays such as Independence day, Constitution day, New Year, Women's day, Navruz, Remembrance day, Navruz can be regarded as an ancient and up-to-date holidays.

Those holidays are valued as official holidays. They have vocabulary units such as "ceremony", "holiday", "modern" that are united in meaning by this lexeme. For example, the population of Fergana celebrated Independence day with the sounds of karnay ("Fargona Khaqiqati")

There are lexic word that are related to this holiday: holiday, karnay, party, independence, joy, prosperity as a result they are combined. Also, independence, prosperity in the abstract and spiritual meanings are linked to freedom and wealth in the paradigm of these lexemes "holiday" and "celebration". However, the meaning of customs and traditions do not lead, but there is relationship with holidays in its semantic structure. According to this, there is a limit of such lexemes.

Conclusion

In conclusion, it is worth to say that investigation and research of Uzbek people's holidays and ceremonies and micro field of lexemes of words that are related to them is one of the actual issues of linguistics.

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QR – Issue

QR – Article

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INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE PROCESS OF TEACHING FOREIGN LANGUAGES AS THE BASIS OF AN INNOVATIVE APPROACH TO LEARNING

Abstract: *The article reveals the concept and features of the use of information and communication technologies in teaching students a professionally oriented foreign language, defines a direct link between the use of ICT and the development of critical thinking of students, the activation of their cognitive and creative activities, motivation for further education and self-education.*

Key words: *information and communication technologies, computer technologies, training platforms, podcasting, digital educational resources, learning management system, Internet technology, innovative approach.*

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ИНФОРМАЦИОННО-КОММУНИКАЦИОННЫЕ ТЕХНОЛОГИИ В ПРОЦЕССЕ ПРЕПОДАВАНИЯ ИНОСТРАННЫХ ЯЗЫКОВ КАК ОСНОВА ИННОВАЦИОННОГО ПОДХОДА К ОБУЧЕНИЮ

Аннотация: *Статья раскрывает понятие и особенности применения информационно-коммуникационных технологий в обучении студентов профессионально-ориентированному иностранному языку, определяет прямую связь между использованием ИКТ и развитием критического мышления студентов, активизацией их познавательной и творческой деятельности, мотивацией к дальнейшему образованию и самообразованию.*

Ключевые слова: *информационно-коммуникационные технологии, компьютерные технологии, обучающие платформы, подкастинг, цифровые образовательные ресурсы, система управления обучением, интернет-технология, инновационный подход.*

Введение

Использование новейших информационных технологий на занятиях иностранного языка позволяет применить интерактивную образовательную технологию, способствует преодолению психологического барьера в использовании иностранного языка как средства общения, повышает эффективность и качество образования. Например, при работе с компьютерными технологиями меняется роль педагога, основная задача которого – поддерживать и направлять развитие личности учащихся, их творческий поиск. Такой принцип сотрудничества и совместного творчества и являются основой модернизованного образования.

Основной целью обучения иностранным языкам является свободное ориентирование в иноязычной среде и этому в большой степени способствуют новые мультимедийные инновации, которые определяются как «информационные технологии обучения, интегрирующие аудиовизуальную информацию любых форм (текст, графика, анимация и др.), реализующие

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интерактивный диалог пользователя с системой и разнообразие форм самостоятельной деятельности по обработке информации». Под информационной технологией понимается процесс, использующий совокупность средств и методов сбора, обработки и передачи данных (первичной информации) для получения информации нового качества о состоянии объекта, процесса или явления (информационного продукта).

В последние годы термин «информационные технологии» часто выступает синонимом термина «компьютерные технологии», так как все информационные технологии в настоящее время так или иначе связаны с применением компьютера. Однако, термин «информационные технологии» намного шире и включает в себя «компьютерные технологии» в качестве составляющей. При этом информационные технологии, основанные на использование современных компьютерных и сетевых средств, образуют термин «Современные информационные технологии». Под информационно-коммуникационными технологиями понимаются программные, программно-аппаратные и технические средства и устройства, функционирующие на базе микропроцессорной вычислительной техники, а также современные средства и системы транслирования информации, информационного обмена, обеспечивающие операции по сбору, продуцированию, накоплению, хранению, обработке, передаче информации и возможность доступа к информационным ресурсам локальных и глобальных компьютерных сетей.

Использование информационно-коммуникационных технологий в образовательном процессе вызывает значительные изменения в его организации, методах, формах. Одним словом, ИКТ претендуют на моделирование процесса обучения в целом. Например, обучающие платформы, в отличие от компьютерных программ, не работают с конкретным содержанием, а лишь задают формы, в которых может разместиться каждый учебный материал.

Одним из широко используемых видов информационных технологий являются цифровые образовательные ресурсы. В процессе обучения иностранному языку широко применяются разнообразные цифровые образовательные ресурсы (презентации в Power Point, On-line тесты, обучающие программы, электронные учебники, учебные Интернет ресурсы и т.п.), которые нацеливают учащихся на успешные результаты. В отличие от традиционных методов применение информационных технологий гарантируют эффективность восприятия и запоминания учебного материала, экономии учебного времени.

Лидирующее положение среди интернет-технологий с точки зрения дидактики занимают системы управления обучением (LMS – Learning Management Systems). Их называют также системами дистанционного обучения (СДО), обучающими платформами, платформами электронного обучения. В рамках этих платформ используется широкий спектр интернет-технологий. Обучающие платформы – это образовательные среды для предоставления учебных курсов online, обслуживания и управления ими, администрирования процесса обучения. Обучающийся имеет возможность доступа к образовательной среде в любое время, в любом месте, где есть выход в Интернет, что обеспечивает реализацию принципа индивидуализации обучения: обучающийся проходит материал в своем темпе, у него есть возможность выбирать последовательность выполнения заданий. Интернет - технологии как основная форма информационных технологий играют позитивную роль в формировании иноязычной коммуникативной компетенции обучающихся, т.к. эффективное изучение иностранного языка строится на работе с аутентичными аудио-, видео - и печатными материалами. Одним словом, частью общего процесса информатизации образования является электронное обучение.

Очень актуальной интернет-технологией именно для целей обучения иностранным языкам является подкастинг. **Подка́стинг** (англ. *podcasting*, от iPod и англ. *broadcasting*— повсеместное вещание, широковещание) — процесс создания и распространения звуковых или видеофайлов (подкастов) в стиле радио- и телепередач в Интернете (вещание в Интернете). Обычно в формате MP3, AAC, Ogg/Vorbis (для аудио), Flash Video и AVI (для видео) подкастов. Как правило, подкасты имеют определенную тематику и периодичность издания. *Подка́стом* называется либо отдельный аудиофайл, либо регулярно обновляемая серия таких файлов, публикуемых на одном ресурсе Интернета, с возможностью подписки. Аудирование – важнейшая часть обучения иностранным языкам. Подкасты дают возможность подойти к ее организации по-новому. Тематика подкастов чрезвычайно разнообразна. Преподаватель не «привязан» к аудиоприложениям к учебникам. Преподаватель - новатор всегда работает с актуальными новостями. Их можно прочитать в газете или послушать по телевидению и радио. Но теперь новости, опубликованные на сайтах в формате радиопередачи, можно и читать, и слушать. При этом не надо записывать теле- или радиопередачу, чтобы иметь возможность

прослушать ее многократно, ведь <u>подкаст</u> можно «прокручивать» сколько угодно.

Системное использование информационно коммуникационных технологий в процессе преподавания иностранных языков имеет следующие результаты:

✓ улучшение организации занятия,

✓ повышение познавательной активности учащихся,

✓ активизация творческого потенциала ученика и учителя.

✓ экономить время (не надо идти в библиотеку);

✓ получать актуальные новости;

✓ использовать более широкий спектр периодических изданий;

✓ экономить время преподавателю при подготовке занятия (некоторые тексты уже дидактизированы: к ним есть словари, вопросы и задания).

Таким образом, использование ИКТ в процессе преподавания радикально меняет содержание системы обучения. Организация учебного процесса становится индивидуализированной, позволяет ориентировать его на каждого обучаемого, повышает положительную мотивацию обучающихся к учению, качественно изменить самоконтроль и контроль результатов обучения, своевременно корректировать и обучающую деятельность, и деятельность учения.

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EXTRA-LINGUISTIC REASONS FOR SEMANTIC VARIATION OF PHRASEOLOGISMS

Abstract: *The extralinguistic causes are determined by the social nature of the language: they are observed in changes of meaning resulting from the development of the notion expressed and the thing named and by the appearance of new notions and things. In other words, extralinguistic causes of semantic change are connected with the development of the human mind as it moulds reality to conform with its needs. The article dwells on the process of research of variativeness of phraseologic semantics out of a certain context and its usage in different conditions.*

Key words: *semantics, phraseolocgical unit, pragmatics, occasional meaning, inner form, idiomaticity, semantic actualization.*

Language: *English*

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Introduction

The process of research of semantic variation of phraseological units (PhU) consists in the study of stable combination on the strength of a certain context and its usage in different conditions (geographical position, customs and traditions, climate factors).

Elaboration of effective ways of considering stylistic peculiarities of phraseological units becomes more and more important both with positive and negative shades of meaning. Apprehension of phraseological unit on the pragmatic level is also directed to the factors that influence variativeness of PhU from semantic point of view.

Stability of combinations, consisting of two and more linked words in PhU is of great interest, first of all, in a modification plan of semantics of PhU in a wide context of usage, where understanding of every element of phraseological units leads to the frequency of its usage.

The following A.V. Koonin's quotation is rather fair: "Phraseologic semantics goes hand in hand with lexical one, however, it has a deal of characteristic peculiarities. The subject of consideration are: types of meanings in phraseologic sphere, phraseologic reconsideration, phraseologic abstraction, inner form of phraseologisms, aspects of phraseological meaning". While analyzing the meaning of phraseologisms it is important to articulate semas as well as semantic elements that are less than any aspect of phraseological meaning.

No doubt, various researches in the sphere of actualization of separate words, show impossibility of the analysis of PhU by the same methods due to specifics of such basic features of PhU as:

1) reproduction of PhU in speech, i.e. their systematic repetition;

2) separate formation of PhU, i.e. their representation by two and more constitutes;

3) stability of PhU, i.e. solidness of meaning, impossibility of semantic division of PhU into separate constitutes;

4) idiomaticity of PhU, i.e. imput of semantics out of the meanings of its components.

In the case of actualization of PhU, the context of a minimal stretch is invalid for expression of semantic meaning. Its limited frames don't allow to reveal originality of modification of PhU. While studying conformity of interpretation of PhU with modern conditions, it is important to take into consideration not only the specifics of its

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interpretation, but individual characteristics of those who use PhU with all their shades of meaning as well. Such characteristic features as age, sex, social position, level of education influence the formation of semantic actualization of PhU in the process of its speech usage.

The following extra-linguistic factors play an important role as well:

1) time, when PhU is used in a certain situation. Later, PhU can acquire new meanings that leads to appearance of polysemy. As a result we get a rise in quantity of semantic variants.

The new meanings can so differ from original ones that give birth to a significant changes during their translation and comprehension in the context.

For example: "red letter day" – in the dictionary by Br. Lockett "The English language: yesterday, today and tomorrow" means some holiday or a day, associated with joy. The dictionary provides the information of pointing holy days by red color in church calendars.

On Friday I got a new job, passed my driving test and won a lottery. All in all a red letter day [B. Lockett. Set Expressions].

Electronic Urban Dictionary produces the meanings of this PhU with transaction from a general to a more concrete meaning:

1. Peculiar days noted by red letters in past.
2. Any day that has a personal significance.
3. A day that is made wonderful by you using different methods.

1. Oh look, it's the queen's birthday tomorrow. Better get ready for the red letter day!

2. Oh look, my girlfriend's birthday is coming up. Better get ready for the red letter day!

3. I went with my girlfriend shopping and bought her everything she wanted, then we had a candlelit dinner and finally, I sang her to sleep under the stars. All of this because it was her red letter day [UD].

As we see from the third meaning, PhU "red letter day" with days gone by, changed its general meaning of "holiday" to "a peculiar day", "especial day for another person".

2) territory, where the act of communication takes place and influences the actualization of meanings of PhU. As a territory we can mean a separate country, city or more limited places as a street, etc.

The importance of extra-linguistic factors is testified by A.V. Koonin in "The course of phraseology of modern English": "The problem is more complicated in the sphere of phraseology than in lexis due to the difficulty of semantic structure of PhU (simple and compound reconsideration), structural variety of phraseological prototypes, highly relative weight of inner form and connotation in the structure of phraseological meaning and complication of staff component of phraseologisms". It's of great importance to take into account the character of phraseologic prototype as well as extra-linguistic factors preceding the appearance of PhU while analyzing reconsideration.

Variativeness of phraseologic semantics is also caused by poly-aspect character. Majority of phraseological units actualize their meaning due to not a single reason, but a totality of both linguistic and extra-linguistic factors.

For example: "Uncle Tom" in the dictionary of A.V. Koonin is used in old meaning of "submissive, suffering black-skinned slave". The appearance of this phraseological unit is connected with the name of a main hero of a novel by H.B. Stow "Uncle Tom's cabin". Another meaning of this phraseological unit has a scornful feature with interpretation "betrayer of his people, black skinned man too respectful to the whites".

Concerning this article, we can conclude that culture, temporal and territorial factors totally influence the formation of the meaning of phraseological unit and its possible modifications. Semantics of phraseological units is also varied being caused by poly-aspect character.

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THE ROLE OF METONYMS IN THE FORMATION OF TEXT STRUCTURE

Abstract: Metonymy and related figures of speech are common in everyday speech and writing. Synecdoche and metalepsis are considered specific types of metonymy. Polysemy, the capacity for a word or phrase to have multiple meanings, sometimes results from relations of metonymy. Both metonymy and metaphor involve the substitution of one term for another. In metaphor, this substitution is based on some specific analogy between two things, whereas in metonymy the substitution is based on some understood association or contiguity

Key words: metonymy, phenomena, dictionaries, different aspects, exophoric referencing refers.
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Introduction

Researchers of textual phenomena have tried to describe this phenomenon from different perspectives. The famous Russian stylist I.R. The work also consists of "titles and separate units connected on the basis of lexical, grammatical, logical, stylistic connections" (Galperin 1981: 18).

In our opinion, the tradition of considering the text as a "literary reworked work" is one of the ideas that does not justify itself to the end, and the reason for this can be explained by the following:

1) the written form of communicative activity is secondary to the oral form of speech, and the fact that the text is considered a written product removes it from the scope of speech activity;

2) this interpretation prevents the inclusion in the text of fairy tales, epics, epics, proverbs, parables, etc., which are the product of folklore;

3) as a result of giving the text the quality of a "literary work", speech structures such as personal and official correspondence, business documents are excluded from this category.

Materials and Methods

Hence, there is no doubt about the validity of researchers who have proposed to analyze not only the written speech activity, but also the product created in the process of oral communication in the form of text (Dressler 1978: 114). In order for a speech structure to acquire the status of a text, the units within it must form a chain of semantic connections in a complex structure. Semantic and syntactic connection is a constant and obligatory feature of the text. Underlying the interdependence of the organizational parts of the text, which is an ontological feature, is the interconnectedness of events in reality and their interconnectedness on the basis of the principle of generality-specificity (Shahobbidinova ......). V.I. Karaban, who included the phenomenon of connection in the list of grammatical categories of the text, considers this phenomenon as an important ontological and organizing feature of the chain of sentences. This feature, in turn, indicates that the text has an internal structure (macrostructure) in proportion to reality (Karaban 1978: 25).

Psycholinguist A.A. Leontev, interpreting dependence as a linguistic concept, lists the following features of this concept:

a) grammatical signs: abbreviations under the influence of syntactic parallelism and syntactic austerity;

b) sinsemantism;

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c) location of theme-rema structures;

G) the emergence of intonation variants in the context;

d) semiotic relationship of parts;

e) symmetrical nature of the relationship of speech (Leontev 1973: 42).

Apparently, there are different approaches to studying the structure of a text, the interdependence of its parts. However, the most important of these is to describe the integrity of the text in terms of grammatical and semantic content.

Dictionaries note the different aspects of these terms. Cohesion is derived from the Latin word cohaesus "connected", which refers to the interconnection of parts of text in their external structure. Cohesion, on the other hand, is derived from the Latin adjective cohaerens "interconnected," which refers to a connection that occurs when several processes occur simultaneously (Jeribilo 2008: 152; Crystal 2008: 85). Representatives of the London School of System-Functional Linguistics M. Holliday and R. Hassan played a significant role in the introduction of these terms. Their book Cohesion in English, published in 1976, ushered in a new era in textual studies. The authors note that the phenomenon of cohesion has a more logical basis, noting that this concept suggests that parts of the text have a functional connection. The concept of cohesion, on the other hand, serves to describe a set of linguistic tools that are relevant to the grammatical analysis of a text and provide for the interconnection of parts (see Crystal 2008: 85). However, such a description should not lead to the idea that mano relationships are not important for determining cohesion. Indeed, according to Holliday and Hasan, cohesion "represents the relationship of meanings that exist in the text and gives it textual status," and "cohesion describes the description of any element in the

discourse as related to another element in the text" (Halliday, Hasan 1976: 4).

Clearly, when two elements in a text are connected to each other, a specific "cohesive bond" is formed, and this bond affects the integrity of the text. In order for lexical and grammatical elements to take the form of a link, they must interact with other units in the text. The cohesive relationships that occur within these types of links fall into two main types: lexical cohesion and grammatical cohesion (Op.cit., pp. 31-33).

Lexical cohesion is a relationship based on the connection between meaning and concept, which occurs between the lexical units involved in the text. Cohesion in this category has the types of reiteration or "reiteration" and "associative formation" (collocation). In the occurrence of cohesion in the "repetition" method, a lexical unit is repeated in a certain part of the text or a general word referring to the previous unit appears. Repetition may also be replaced by a synonym or its alternative (Op.cit., P. 278). Cohesion of the "associative structure" type is based on the associative proximity of lexical units.

Grammatical cohesion is based on the mutual grammatical interdependence of units in a text, and its four types are distinguished: referential, subatitution (substitution), ellipsis, and connecting. The most common of these is referential, which in this case "allows the speaker to point out that something is repeated from the previous part of the text or that it has not yet appeared in the text" (Thompson 2008: 180). In fact, we would like to point out that other researchers prefer to use the term "coreference" instead of the term "reference" used by Holliday and Hasan (Brown, Ynle 1983). M. Holliday and R. Hassan described the relationship that reflects the occurrence of reference in the following diagram:
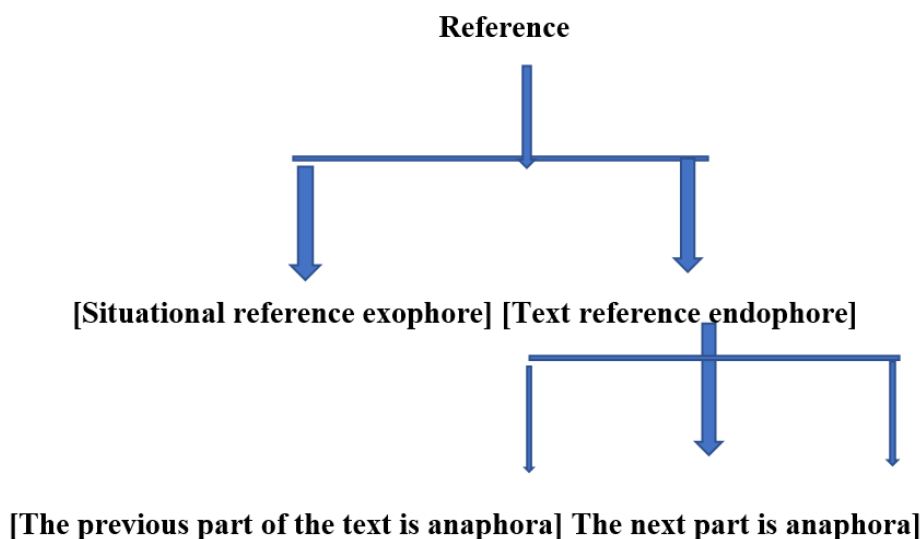
Reference

[Situational reference exophore] [Text reference endophore]

[The previous part of the text is anaphora] The next part is anaphora]

Diagram 1.

Clarivate
Analytics **indexed**

Exophoric referencing refers to relationships in reality, not to meanings that pre-exist or appear later in the text. Therefore, the exophore does not affect the structure of the text and does not serve to link the two units together.

Text referentiality has anaphora and cataphore forms and plays an important role in the organization of the internal and external structure of the text. Hence, the description of one anaphora reflects the connection between two linguistic units that are related to the other (Huang1994: 1). In other words, the concept of anaphora refers to the use of any word or phrase in place of another word or phrase in the text (Kiselev 2019).

The second type of grammatical cohesion is substitution, which is sometimes considered to be dependent on a group of lexical cohesion. Because switching units is very similar to lexical repetition. M. Holliday considers the constitution to be based on the grammatical relations of words. In any case, it should be borne in mind that it is often difficult to distinguish them because the types of cohesive phenomena intersect.

The view of the ellipse as a method of forming cohesion is due to the fact that the element of speech or sound is not completely repeated in the text. This phenomenon ensures the occurrence of grammatical cohesion. Sometimes it is difficult to distinguish an ellipse from a substitution because an ellipse is actually a substitution of an element of text for a zero, i.e., omitted (Holliday 1994). Finally, the next type of grammatical cohesion is called a conjunction. Unlike other types mentioned in this type of cohesion activation, lexical elements also contribute. The connecting elements play the role of a vehicle in the interaction of linguistic units with each other. Such connecting elements "provide consistency, sequence, and cannot be dependent on other structural means" (Halliday 1994: 227). The connecting means usually give the discourse a systematic look and bring the units within it into a logical order.

Results and Discussions

Thus, the analysis of the content of the text, the structural structure allows to determine the logical, semantic and structural relations of the sentences and other linguistic units within it. These relationships are important factors in shaping the textual structure of the text. Therefore, the coherence of the text, T.P. As Tregubovich returns, it relies on a sequence of elements. (Tregubovich 1978: 8).

Researchers are accustomed to noting units that fall into the category of connectors as the main means of linking parts of text, structural sources. Binders, in turn, are divided into different groups according to differences in the expression of logical grammatical relationships between parts. For example, in English, and, nor, neither have the meaning of interjection, while the conjunctions express the conjunction. Similarly, if but, not, that forms a contradictory relationship, for, becouse causes, so, so that, etc., form a consequential relationship. In addition to such binders, it is also capable of performing certain types of forms: besides, again, likewise, further, next, however, yet, still, though, neverthelles, notwith standing, furthermore, otherwise, else, therefore, etc.

The use of some phrases and modal units that are close to the transition to a series of auxiliary words in this task is also noted by the authors (Yusupov 2011: 208; Quirk, Greenbaum 1998: 302): for all that, at the same time, on the contrary, on one side, on the other hand, in other worlds, in a word, above all, in short, indeed, rather, true, etc.

However, the connection between the organizational parts of the text is formed not only by the use of special tools listed above, but also by means of linguistic units. Metaphorical and metanomic units formed on the basis of conceptual-semantic migration are no exception. In this chapter of our study, we plan to study the role of metonymy in the formation of text cohesion. Dutch linguist Van Dyke argues that cohesion occurs in regional and global contexts. (van Djik 1980). The first implies a connection between adjacent sentences in the text, i.e. the connection between these sentences has a semantic and grammatical territorial character. The global nature of cohesion is based on connections that occur throughout the text.

Conclusion

Based on the scientist's description, we will try to analyze the role of metonymy in the structure of media texts at two levels, namely, regional and global. While the main focus is on the relationship between the parts, the integrity of the text is not overlooked.

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THE LIGHTS OF JEWELS OF TURKIC LANGUAGE IN THE WORKS OF ALISHER NAVOI

Abstract: The complexity and diversity of the lexicon of the modern Uzbek language, the stages of its formation and development are closely linked with the history of the Uzbek people.
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Language: English
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Introduction

The lexicon of the Uzbek language, which has undergone constant changes, is the result of long-term historical development. It is characterized by the fact that it is based on its own words, and the fact that such words are still "alive" determines the specificity of the Uzbek language, national traditions, antiquity. Our scholars always emphasize Alisher Navoi's contribution to the enrichment of the old Uzbek language with its own words, which, despite centuries of oppression and discrimination, have come down to us as a sign of the national mentality of our people, because is that Mahmud Kashgari's dictionary for the first time managed to preserve the meaning (original meaning) of his words in the ancient Turkic language both in the works of Navoi and in the modern Uzbek literary language. We analyze some of them.

1. A unit denoting the name of a specific object.

The word beshik exists in the ancient Turkic language and is formed by adding the suffix -k to the verb beshi, which is formed by adding the suffix -shi to the word be, which means "blanket". In his time, the word had only one meaning, and in Alisher Navoi's epic "Farhod and Shirin" it means only "a thing made to put a baby to sleep, adapted to vibration":

(Original version):
Beshik *davrida chiniyu xitoyi,*
  Bo`lub yuz no`shlab dastonsaroyi.

Meaning: In the period of the midwife, turkey and china were all one people.

In modern Uzbek literary language, the word also means "a special device made of willow or mulberry wood for sleeping with a baby in a cradle." (O`TIL, I, 245).

2. The unit of meaning of place.

The word mountain, which means "the part of the earth's surface that rises much higher than the hill", was used in the ancient Turkic language in the form of a tag and had the same meaning in M. Kashgari's dictionary. It is also actively used in the works of Alisher Navoi:

(Original version):
Bu holat ichra paydo bo`ldi xayle,
  *Nechukkim **tog`** ichinda tund sayle.*
Meaning: This situation arose in people, why grief among the mountains.

3. Lexical units representing cereals.

The word wheat, which means "herbaceous plant of the cereal family and its grain" (OTIL, I, 393), is a common Turkic word. In the periodof Makhmud Koshgariy the word was used in the form of "bugday" (=wheat). In the text of Navoi's works, wheat is used in the sense of "wheat grain, grain": The official duty is to be a devoted teacher of two scholars: the annual task of each of them is one thousand two hundred gold coins, twenty-four loads of grain, oats of barley, oats of wheat. (Vaqfiya).

4. The unit meaning waterway.

As the word *"ariq"* in M. Kashgari's work means in the ancient Turkic language, in the modern Uzbek literary language it means "Artificially created waterway, river and water in it" (OTIL, I, 98) retained its original meaning. Some scholars say that there are different opinions about the language of the word. In the later works of Sh. Rakhmatullayev it is stated that the word *ariq* was formed by adding the suffix -iq to the verb ar, which means "flow" in the ancient Turkic language [Rahmatullayev, 2000]. In the language of the great poet, the word *ariq* is reflected in the same sense:

(Original version):
*Kamarda bir **ariq** qozmoqqa mashg`ul,*
***Arig`** topib kamar shakli bila tul.*
Meaning: Preoccupied with digging a hole in the mountain, digging was found and orphaned by the mountain form.

5. The unit denoting the concept of the name of the animal for transportation

The word ot (horse), which means "large working animal" (OTIL, I, 258), still retains its meaning in the ancient Turkic language, and M. Kashgari used and defined the word as "hard pronounced arabic sound "." In the old Uzbek literary language, including in Navoi's works, the vowel sound of the word is pronounced hard:

(Original version):
*Chu nogah **otg`a** ulyon mayl berdi*
Ki, Farhodi hazin timsoli erdi.
Meaning: Suddenly the horse allowed, Farhad was the embodiment of baseness.

6. A unit that means a household item.

The word "hearth", which is a common Turkic word, is given in the works of M.Koshgari in the form of o'chaq (hearth) and means "a device designed to set a boiler and light a fire." In addition to this, it has a connotative meaning as "a place where something appears, takes place, spreads; source, center "(OTIL, V, 188). Usually, the figurative meaning is a derivative meaning, which comes after the denotative meaning, which in the time of Alisher Navoi had its own figurative meaning. Our opinion can be proved by the following example used by Alisher Navoi:

(Original version):
Na`lim ichra dog` uchun qo`yg`on fatila dud ila,
*Dard **o`chog`inda** tutay davronda o`ti yoqilib.*
Meaning: My beloved's metal heel plate was a stain on my state like a smoke, As if burning wood in agony.

In conclusion, it is possible to continue such ancient Turkic words and their preserved meanings in the example of Navoi's works, which shows that the lexicon of the ancient Turkic language has a significant place in the Navoi vocabulary.

Lexemes in the Uzbek language dictionary are colorless or devoid of such a symbol, which expresses the emotional attitude of the speaker. Accordingly, they are divided into colored lexemes and colorless lexemes. Colorless lexemes reflect the phenomenon and do not express the subjective attitude of the speaker to it. In other words, the semantic expressions of the colorless lexeme, which express the human emotional relationship, are zero. However, any colorless lexeme in speech can also be colored.

Alisher Navoi used the words of his time in his works to express the feelings, negative or positive attitude of the lyrical hero. Painting is an important tool in ensuring the effectiveness and artistry of a work of art, especially poetry. That is why we paid attention to the poems of Alisher Navoi. For example:

(Original version):
*Hayotbaxsh esa ul **hur** aksindin boda,*
*Mahalli hayrat emas, **hur** aksidindur ruh.*
Meaning: It's not surprising, as if on the face of a loved one life is reflected, my beloved is just like an angel.

The Arabic word for "*hur"* in modern Uzbek is "free, independent; who loves freedom; (O`TIL, V. 562-page) In the time of Alisher Navoi, the word often meant metaphorically "mistress, beautiful girl." In this verse, he exaggerates the fact that if the lover falls on the opposite side of the body, then the body becomes a living body, in fact, the life-giving soul is a reflection of the hur. The correct choice of the word served to increase the impact and create a figurative image.

(Original version):
*Novaking **paykonini** to chektilar, **nolon** ko`ngul*
***Aylamas afg`on** ko`ngulsizlikdin andog`kim jaras.*
Meaning: My heart sighed by reading your bow, will there be more daggers than that.

Negatively colored lexemes in the expression of the lyrical protagonist express his negative attitude to the being, to the person, and in their semantics the corresponding semantic expressions are negative. The word *nolon* in this verse is Persian and means "moaning, whining; complainant "(OTIL, III, p. 52). When a negatively colored lexeme expresses the speaker's negative attitude to the event, the sema that represents the negative attitude in their semantics swells. In the second line of the example, the word *nolon* is used to mean moaning. The word "afg'on" is a part of compound verb, which has an independent meaning, is also Persian and means "moan, cry" (OTIL.I.119-p). The poet chooses the word carefully, for example, the word *paykon* in the byte is also a stylistic dye, in the old Uzbek language the word *paykon* literally means the look of the yard, poets often in Persian. The word *paykon* is used in the sense that the word has a high degree of color.

(Original version):
Eyki, maydin xoli ermas deb meni ta`n aylading,
*Bori ko`rguz onikim bu dayr aro **ma`sum** erur.*
Meaning: You reproached me that I was not separated from the wine,

those who see this state of affairs call me pure.

Positive coloring is also part of the lexical meaning. A positively colored lexeme represents a positive attitude of the speaker to the phenomenon, and in their semantics the corresponding semantic expressions are positive. The word innocence in this verse means "preserved, inviolable; sinless, pure " (O`TIL.III.567 p.). At this point, we would like to emphasize that in classical poetry, the lover often describes himself as infallible, and the mistress is described as cruel. You scold my lover for not stopping drinking wine (divine love is meant), but he insists that you will not find an innocent, pure person like me in this world.

(Original version):

*Ayni iffatdin o`shul **pokiza** gavhar jismida*
Xil'at ermaskim, binafsh etgan kibi po`lod erur.

Meaning: A word from God which comes out pure in the form of a quintessence, sarpo is not as hard as a violet.

The word *pokiza* in the first line is a Persian-Tajik word, "clean, pure; chaste; innocent; pleasant " (OTIL. III. p. 289). It should be noted that the word, both in its original and figurative sense, has the above-mentioned complementary meanings, not only the meaning, but also the word chastity in the verse served to strengthen the meaning. The word "pure" also

means "pure " because it is a precious, pure stone, which is why beloved is called a pure pearl by the lover and strongly expressed in the sense. Thus, the formation of emotional expressiveness by the metaphorical use of the word is a phenomenon typical of classical poetry. Creating connotativeness in words in this way is a basic requirement for art. In the verses, the poet replaces the stylistic dye with its methodically neutral variant, often dominant, and does not allow unnecessary repetition:

(Original version):

*Iydi **ruxsoring** ko`rub, bo`ldi ulus hayron sanga,*
*Ey ulus iydi **yuzung,** jonim mening qurbon sanga.*

Meaning: Seeing your face, people wonder at you, people face, my soul sanga my sacrifice.

In the first stanza the word *ruhzor* with stylistic dye is used, in the second stanza the dominance of the face without stylistic dye is used, the poet chose this word according to the requirements of the weight of the application.

In conclusion, in Alisher Navoi's ghazals, stylistically expressive words, expressing their own and figurative meanings, served to increase the emotionality of the lover's and beloved's appearance, condition, and description.

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TEXT FEATURES OF COMMERCIAL WRITINGS

Abstract: The existence of language is related to the way people perform speech events, including verbal or mechanical repetitive and recorded speech events. In the process of performing these actions, linguistic units (in the first place - speech) demonstrate the ability to express content such as affirmation, command, warning, promise, in addition to the original meaning. These meanings are the result of the speech activity performed by the speaker. Hence, a speech act is a linguistic appeal of a speaker to a listener in a specific environment, for a specific purpose. This article highlights the text features of commercial writings.

Key words: speech, oral speech, written speech, text, writing, types of letters, commercial letters, service letters, linguistic units.

Language: English

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Introduction

UDC41 (M24)

Any formal letter is a speech work that serves to express in a specific way any speech situation that is a certain part of being. It embodies a specific theme that includes several parts. The linguistic features of official letters, i.e. lexicon, semantics, syntax, constitute its linguistic aspects.

The formal-commercial relationship and the functional direction of commercial correspondence determine its characteristics. First of all, it should be noted that it is formal, firstly, with the state of communication, and secondly, with the nature of the relationship of the partners in correspondence. The formal color diversity of formal speech is that it is usually expressed in the form of non-emotional, logical, expressive calmness.

Materials and Methods

It was found that the largest percentage (14.9%) of the lexical units we analyzed were verb nouns and riding compounds that define the various actions and operations performed during a commercial activity. Perhaps this can be explained by the fact that it leads to the exchange of information on the need to carry out any commercial activities (contracting, transportation of goods, establishment of joint ventures, etc.). Given that the noun emphasizes the static element, the constant essence in the vocabulary, and the verb, on the contrary, expresses the dynamic element, the combination of the above methods of meaning (ottenok) is done in verb nouns with the characteristics of both components.

The texts of service letters also record general features that are specific to one level or another to texts at all levels. The dictionary of service letters is divided into general, special (commercial) terms and scientific and technical terms. Our sample analysis showed that the general vocabulary in weakly formalized single-letter letters is 75.0%, special commercial terms - 19.1%, scientific and technical terms - 5.9%; general vocabulary in strongly executed single-letter letters - 36.3%, special commercial terms - 47.0%, scientific and technical terms - 16.7%; common vocabulary in complex multi-task letters - 42.3%, special commercial terms - 52.8%, scientific and technical terms - 4.7%. The results of the calculations show that the proportion of each lexical layer in different types of letters is different. For example, in poorly formalized single-function letters, a general phrase is represented by most of the text

elements, while a special dictionary is represented by a small number of units. Such letters may be sent with words of condolence on the promotion to a higher position in the service, on rewards, or vice versa. Thus, these are private service letters that mainly serve a social ethical function. Formality, business acumen, and seriousness are minimized in this type of letter. At the same time, the role of emotionally diverse vocabulary grows with both positive and negative evaluations (thanks, appreciation, regret, concern, condolenses, etc.). Condolences, reservation letters are just general phrases because their content is far from a direct business scope. A special dictionary makes up most of the text elements in highly formalized single-letter letters on pure business matters, as they address a wide range of business problems and complex multi-task letters that arise between relevant parties, such as an advertising topic. The language of advertising letters, the purpose of which is to attract the attention of potential buyers, includes many evaluation units, as well as many names indicating the different qualities of the product, its value, terms of delivery, and so on. Thus, we can conclude that the communicative function of service correspondence is the most important extravinational factor that determines the lexical design of a letter.

Results and Discussions

A very large group in our analysis became a group of words formed on the basis of roots and affixes of classical languages: for example, lexical units containing word-forming elements of Greek - character, dialogue, graph, base; LE, which contains word-forming elements in Latin - e.g., instance, facility, cell, exponent.

The second group includes words derived from French: enhancement, entry, check, envelope, and so on.

The third group includes lexical units of German origin (ancient lexicon): finding, head, batch, edge, and so on.

The fourth group includes assimilation words: grande vitesse, per capita, franco domicilium, and others. Latin clichés account for 3.5 percent of our analyzes, and French clichés for 1.5 percent. The components of such units are not accepted from a grammatical point of view, and all clichés are considered as a whole, but alien in nature. Some Latin words and phrases are included in clichéd phrases with an English dictionary (ed hoc expert group, ex-gratia payment, right in rem).

Among the simple noderivative and affixed Latin words, lexical units whose composition has prefixes from the root and foreign are very widely represented. The remaining word combinations of the studied terminology layer include complex noderivative and complex derivative words (counterpart, salesman, way-bill, gate- money, survey expenses, price-sheet, contract supplies, local

expenses, gross price, balance sheet, etc.). It should be noted that uncomplicated and complex words are not as common among the studied LE as simple noderivative and affix-derivative nouns.

The "situational" vocabulary is of particular interest. This vocabulary is provided for specific thematic groups-situations. The situation is understood as the thematic component of the letter, for example, the vocabulary associated with the names of the parties, etc. (parties, seller, enquiry, bargain, trade terms, etc.). In the lexical plan, the stereotypes that create the situation play a special role. They are the main ones, carrying the basic lexical load that forms the semantic critique of the whole situation. The clichéd phrases in the service letter not only save the thought process, but also provide a clear understanding of specific situations, as well as a specific signal of the content that follows them. Clichés in service letters may indicate that the other party's interests and suggestions will be considered or rejected by the sender. Often associated with the positive or negative emotional diversity encountered in the cliché, for example, "to express appreciation, to express thanks, in good time," gratitude has a positive color, while "to express the gravest concern, to note with regret, to note with concern "- has negative and specific signs of rejection. Business standards can also vary in stylistic labeling. For example, service letters are characterized by neutral business standards (with regard to, in compliance with, to call to mind) and conversation (as a matter of fact, a sort of, at any rate). It should be noted that service letters do not have a high biblical lexical character. According to the compositional structure, the specific speech signs noted in the analyzes can be divided into groups of nouns, verbs, and expressions. Noun stamps are produced in N + N, N + prep. + N, Adj. + N (escape clause, delivery of the goods, free sample) molds.

Verbal stamps are represented by templates V + N, V + prep. + N (to register a treaty, to make out an invoice).

The possibilities of synonymous substitution in service correspondence are very limited, as synonyms usually lead to a change in the nature of meaning. This is explained by the fact that only 4 synonymous lines were found among the nouns that make up the special terminological dictionary in this sample. (sample-specimen, goods-items-articles, invoice-account, charges-expenses). The few non-synonymous lines found in service correspondence include only two or three synonyms, which once again confirms the tendency to rule out misinterpretation of the error. In the analysis of abstract nouns, a much larger number of synonymous and synonymous series was identified, such as pity-regret-concern-concern-sorrow, pleasure-delight-place, thanks-gratitude, force-power-intensity.

Thus, lexical and semantic variants with meaning based on explicit concepts have less semantic

potential than lexical and semantic variants based on abstract concepts; for the latter, the context is of particular importance.

There are also some words and phrases that are indicators (signs) of the next content. Consider such signal words and phrases in different situations:

One of the parties does not want to bind themselves with additional obligations. In this case, the following clichés can be used, including:

According to our deal

Duties Send to our option

Our laws At our option

In consideration For the benefit of

Your obligations

2. One of the parties is more interested in concluding a contract than the other:

No further problems Only in the event that

Open points Remaining areas

Our discussions

"Please look at the short Contract, which is based largely on knowing each other and on trust between 2 companies. I am sure there are some open points for discussion, and it will not be long before we are operating on a similar basis with you. " (UK, Electro-flow Ltd.)

Conclusion

The parties exchanging service letters on the basis of focused goals and objectives determine the choice of phrases and the emergence of certain lexical units in the text.

Thus, the predominance of neutral, neutral vocabulary in Uzbek over English; functional type vocabulary, commercial and financial terms, moderate use of formal patterns and stable expressions related to formal written speech, the absence of expressive-emotional vocabulary can be defined as features of official letters.

Formal letters in English and Uzbek are structured according to a certain pattern, and with simple sentences, usually cohesive parts, adjectives, introductory words consisting of nouns, etc., we can conclude that it has become standard by complicating it.

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THE SECRET OF THE HAPPINESS COAST (Based on the story «Happiness Coast» by Khayriddin Sultanov)

Abstract: *The image of Zahiriddin Muhammad Babur, the feeling of homeland, the health of the country and patriotism motives were analyzed in the work of the author Khayriddin Sultanov.*
Key words: *A historical figure, a longing for the homeland, a sense of homeland, an artistic interpretation.*
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Introduction

In the works of Khayriddin Sultanov, special attention is paid to the interpretation of historical figures. In almost every work of the author one can find either full or episodic interpretations of the image of this or that historical figure. His works do not simply shed light on a historical theme or a symbol of a historical figure. The creator in the interpretation of each historical figure is not only his appearance, behavior, he can describe his speech, but he can also paint the world of fantasy, his inner experiences, the mental changes associated with each situation, like a skilled artist.

Materials and Methods

Zahiriddin Muhammad Babur wanted to return to his homeland, but was reluctant to do so. Nevertheless, it can be said that his request was granted anyway. It is as if Hafiz Koyki managed to return to his homeland with consciousness. He returned to his homeland through a representative of the homeland. This was also a consolation to the heart of the eager, patriotic king.

It is noteworthy that Hafiz Koyki was returning home with Babur's last request. In fact, the shore of happiness was in the homeland, not in India, but in Andijan, in the land of the Turks.

Hafiz Koyki did not know how he got into the language of his heart:

- Happiness Coast – in the homeland my king … [1.50]

The poet Babur also acknowledged that the beach of happiness is in the homeland.

Fortune was a disaster for me,
Everything I did was wrong.
Leaving my place, I turned to India,
Oh Lord, what a pity. [2,101]

It should be taken into account that Hafiz Koyki was a scholar, a scientist. Muhammad Babur was a king, a poet. So the poet had met the scientist, in fact. Similar thoughts. The concepts are similar too. I mean, a scientist has a philosophy, and a poet has a high emotion.

Why did Zahiriddin Muhammad Babur think about the beach and why? Because anyone who can't get out of the whirlpool of exile looks for a beach, and he considers the beach a blessing. This happines becomes homeland naturally.

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It is stated with certain facts in "Boburnoma" that during his lifetime Babur measured many rivers from Central Asia to India.

So the concept of the beach is close to Bobur. As Babur became more aware of the concept of the beach, he began to think about the beach of happiness.

The name of Zahiriddin Muhammad Babur has been living with the concept of homeland for centuries. In the works of contemporary poets, he is a good example of the motherland and patriotism.

Who made Kashgar a place,
On the Enasoy side,
Jaloliddin - In Kurdistan,
Your Bobur - In India,
What a sight to behold
They lie in the dark,
You are my ninety-six kins
Dispersed, my homeland… [3.8]

Ninety-six kinsman dispersed. Muhammad Babur is one of our descendants. No matter where he went, no matter what country he prospered, first of all, he aspired for his homeland – his native land.

Babur also remembered the sky of Andijan where he spent his childhood. The stars of the Seven Brothers also circled the Golden Pillar there and sank to the west. There, as the Seven Brothers rose to the horizon, the stars of Hulkar rose to the heights of the sky. As a teenager, he assimilated Hulkar to the kite made of diamonds. The diamond kite, which fluttered its tail merrily, took his mind back to his pure childhood. The fact that the sky was the same all over the world, and that the stars he had seen in Andijan at the beginning of his life were shining in Agra at the end of his life, seemed to be his last consolation. As Babur was lying, looking into the sky, he became a young, healthy young man again, as if lying on the terrace of the Andijan garden, and remembered his homeland:

"These seven white stars were there, going around the Golden Pillar and sinking to the west. There, as the seven white brothers were on the horizon, the Hulkar stars were rising to the heights of the sky." [5.687].

Hafiz Koyki came to this conclusion after listening to Babur's words.

"A pencil doesn't fit to the sheath which the sword does." In fact, Muhammad Babur himself was a king, but he had a special soul. He was first and foremost a man of the heart.

Babur also began to draw conclusions as if he felt that his life was coming to an end, and these conclusions showed that at the age of forty-seven he had become a philosopher with a deep understanding of the universe.

"in this passing world only the truth can be eternal. The palaces will be destroyed, the kingdoms will be cleansed, and the luxuries will be destroyed." [1.39]

During the lifetime of Muhammad Babur, as Hafiz Koyki acknowledged, Amir Temur had high hopes for Kuragani and the heavenly Mir Alisher Navoi. Alisher Navoi had great faith in the poet Bobur. However, destiny did not happen, and Babur spoke of this situation with constant anguish. Luckily, the tombs of the two great geniuses were located close to each other, one in Herat and the other in Kabul, only 150 miles away. This is also called destiny. It is said that it is destiny.

Muhammad Babur was nicknamed the "Kalandar King" in India. And that was exactly the name he found. He always condemned the sultans who fought for the throne and destroyed the country and the people, and wanted their unity.

As Babur says of such kings, "Let the crown of their minds never go out." [1.48]

We know that Sahibkiran Amir Temur Koragoni did not use only the sword in battle. He conquered lands during his lifetime with a sword when necessary and other means when necessary. We are well aware that he carried out nine parts of his state affairs by council, event and consultation, and the remaining part by sword. We can see that Mirzo Babur also relied on the teachings of Amir Temur for many periods of his life:

"You're talking nonsense, Amir Doldoy!" There is a time for everything in the country. If you cut off one head in this country today, two will rise against you tomorrow. Then don't forget… He paused for a moment and said, "Mercy and courage are before the Creator and the people." Do you know who bestowed this wisdom?

- My king…

- Sahibkiran Amir Temur Koragoniy. [1.52]

The fact that the young Khayriddin Sultanov mentioned the name of the Great Temur with great respect as Sahibkiran is a great courage for the time when the work was written.

It should be noted that Muhammad Babur was cruel to those who did not keep their promises. He advocates the use of cruel punishment against them.

"These perverts think that you have the kingdom and that Babur Mirza is dead." Well, let them go - let them see for themselves! Forget the compassion for those who forget the word! [1.60]

Contrary to Bobur's strict rule, the following lyric can be seen below:

You have to behave, you have to be crazy,
We need to forget the forgetful. [2.34]

One of the episodic characters in the story "Shore of Happiness" is the master Binokul. He followed in his father's footsteps to the Indian subcontinent, but later realized that he was more interested in Bobur than in his father. It is the commander - the warrior Bobur, not the poet Bobur. I include Binoqul and Bakhshiturk. Binoqul is a textile symbol, Bakhshiturk is a historical symbol. Binokul

aspired to the father, did not break away from the mother, anyway.

Although Babur won many times, his victories were not always successful. He was well aware of the many beheadings, orphans, and widows left behind by his success. The king was heartbroken by the way the fifteen soldiers of the enemy, who were bound to be captured alive in a battle, killed themselves. "I was amazed at their courage. And then I was hurt by my sinful heart. " [1.56]

Mirza Babur was well aware that if he obeys, he can only subdue the body, but he cannot subdue the human heart. It is beyond his power.

"I realized that in this country, when an alarm can subdue solitary bodies, it can never subdue their spirits" [1.56]

Conclusion
Although Zahiriddin Muhammad Babur conquered vast lands and many other cities, he sees

himself as an ordinary Indian warrior who fought valiantly for the country.

… And again, I realized that they would rather die than lose their lives alive. I, on the other hand, preferred another country to my own. [1.56]

Zahiruddin Muhammad Babur thought deeply, although he could have seized his homeland by force from his enemies. But he did not. Because the people, who had suffered so much, did not want to fight again. His love for his homeland was so great that he wanted to return to the country after the glory of the kingdom, and return to the common man, even in the guise of a potter.

"… I agree, get rid of the royal gratitude to the land where my umbilical cord blood was shed, and return in the garb of a potter" [1.57]

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INVESTIGATION OF HYDRODYNAMIC MODES OF HEAVY FLUID OUTFLOW IN A BUBBLING EXTRACTOR

Abstract: *In the article, as a result of theoretical research, a formula has been derived that calculates the rate of outflow of a heavy liquid, depending on the change in the amount of gas content in the inner mixing zone of the apparatus. Experimental studies were conducted to verify this formula, and the experimental results fully confirmed the proposed formula.*

As a result of the research, a method for calculating the flow rate of heavy liquids supplied to the device was developed. Depending on this value, conditions have been created for the correct choice of the ratio of light and heavy liquids supplied to the device.

Key words: *bubbling extractor, heavy phase, mixing zones, liquid velocity, gas content, resistance coefficient, heavy liquid flow rate, gas velocity.*

Language: *Russian*

ИССЛЕДОВАНИЕ ГИДРОДИНАМИЧЕСКИХ РЕЖИМОВ ИСТЕЧЕНИЯ ТЯЖЕЛОЙ ЖИДКОСТИ В БАРБОТАЖНОМ ЭКСТРАКТОРЕ

Аннотация: *В статье в результате теоретических исследований выведена формула, рассчитывающая скорость истечения тяжелой жидкости, в зависимости от изменения количества газосодержания во внутренней зоне смешения аппарата. Для проверки этой формулы были проведены экспериментальные исследования, и результаты экспериментов полностью подтвердили предложенную формулу.*

В результате исследований была разработана методика расчета расхода тяжелых жидкостей, подаваемых в аппарат. В зависимости от этого значения, создано условия для правильного выбора соотношения легких и тяжелых жидкостей, подаваемых в аппарат.

Ключевые слова: *барботажный экстрактор, тяжелая фаза, зоны смешения, скорость жидкости, газосодержание, коэффициент сопротивления, расход тяжелой жидкости, скорость газа.*

Введение

В настоящие дни и во всем мире процессы жидкостной экстракции широко используются в химической, нефтеперерабатывающей, пищевой, гидрометаллургической, фармацевтической и других отраслях промышленности. Поэтому, применяя поток инертных газов для смешивания жидких фаз, важно создать высокопроизводительные и со способностью экстрагирования, с высокой интенсивностью, компактные, энергоэффективные экстракторы. Исходя из этих требований, мы разработали конструкцию барботажного экстрактора с простотой конструкции, не содержащей механических смесительных частей [1]. Эффективность экстракции легко регулируется изменением расхода инертного газа.

Объект и метод исследования

Объектом исследования является экспериментальная установка барботажного экстрактора, созданная на кафедре «Технологические машины и оборудование» Ферганского политехнического института и установленная на лабораторном стенде кафедры (рисунок 1 и 2).
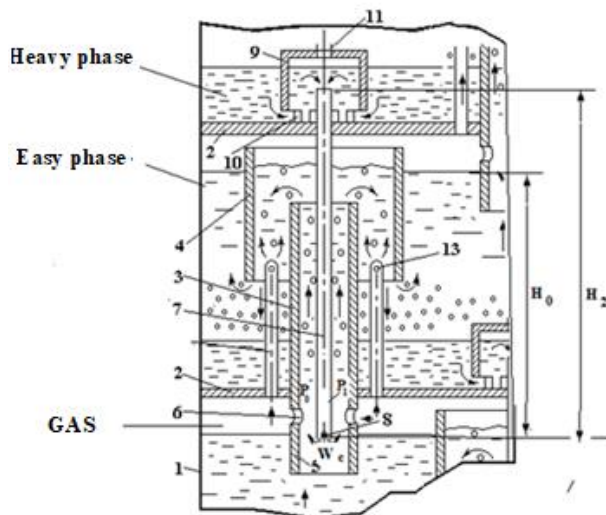
Рис.1. Расчетная схема экстрактора.

Рис.2. Общий вид эксперементалной установки

1-Корпус аппарата, 2-ограждение, 3-патрубок внутренного барботажа, 4-патрубок внешнего барботажа,5-газораспределительного насадка, 6-отверстие для подачи газа, 7-патрубок для слива тяжелой жидкости,8-отверстие для слива тяжелой жидкости,9-кришка, 10-нижнее отверстие, 11-верхнее отверстие, 12-патрубок для подачи газа во внешнюю зону смешивания, 13-отверстие для подачи газа.

Тяжелая и легкая жидкие фазы подаются в экстрактор следующим образом. Легкая жидкость перекачивается снизу устройства к нескольким контактным элементам, расположенным на ступенях барботажного экстрактора, с помощью насосов. Тяжелая жидкость подается сверху устройства через отверстия в специальных патрубках. Скорость тяжелой жидкости вытекаюшей из отверстия, зависит от размера отверстия и его коэффициента сопротивления, разницы в плотностях жидкостей и расхода газа (рисунок 1).

Скорость тяжелой жидкости, протекающей через патрубку, также зависит от количества газосодержания φ_0, образованного скоростями газа и жидкости во внутренней зоне смешения. Приближаясь к максимальному значению количества газосодержания в зонах смешения экстрактора ($\varphi_0 \to 0,3$), можно добиться снижения геометрического давления во внутренней барботажной трубе до максимального значения [2,3,4,5,8; С.158-163].

Это, в свою очередь, ускоряет истечение тяжелой жидкости из патрубки. В результате производительность экстрактора по тяжелых жидкостях увеличивается. Мы анализируем это теоретически [7], (рисунок 1).

Суммарное давление, приходящееся на центр отверстий сливного патрубка, равно, Па:

$$P_0 + P_1 + \Delta P_c \qquad (1)$$

где P_0 - давление легкой жидкости во внутренней барботажной трубе, падающей к центру сливного отверстия тяжелой жидкости, Па; P_1 - давление тяжелой жидкости в сливнойной патрубке к центру отверстия, Па; ΔP_c - потеря давления при истечении тяжелой жидкости из отверстия сливного патрубка, Па;

Давление P_0 определяется по следующим образом:

$$\rho_0 = \rho_{cm} g \cdot (1 - \varphi_0) H_0; \qquad (2)$$

где $\rho_{см}$ - плотность смесей легких и тяжелых жидкостей, кг/м^3; φ_0- количество газосодержания во внутренней зоне смешения, H_0- высота зоны смешения, м, (рисунок 1).

Плотность смесей легких и тяжелых жидкостей $\rho_{см}$, определяется следующим образом, кг/м^3.

$$\rho_{cm} = \rho_0 \cdot \alpha + \rho_c (1 - \alpha); \qquad (3)$$

где $\rho_т$ - плотность тяжелой жидкости, кг/м^3; а-доля тяжелых и легких жидкостей в смеси,%; $\rho_л$ плотность легкой жидкости, кг/м^3.

Количество газосодержания во внутренней зоне смешения φ_0 определяется следующим образом;

$$\varphi_0 = (1 - 0,04\omega_{\text{ж}})\phi' \qquad (4)$$

где $\omega_{\text{ж}}$–приведённая скорость жидкости внутренных перемешивающих зон аппарата, м/с; ϕ' –газосодержание в неподвижной жидкости. Для расчета ϕ' предложен эмпирическое уравнение, [2,3,4,7].

$$\phi' = 2,47 \cdot \omega_{\text{г}}^{0,97} \qquad (5)$$

где $\omega_{\text{г}}$ –приведённая скорость газа в зоне смешения, м/с;

P_1 давление тяжелой жидкости в сливной патрубке к центру отверстия и определяется следующим образом, Па;

$$P_1 = \rho_0 g H_2 \qquad (6)$$

где H_2- высота тяжелой жидкости до центра отверстия, м.

ΔP_c - потеря давления при истечении тяжелой жидкости из отверстия сливного патрубка, определяется следующим образом, Па;

$$\Delta P_c = \xi_0 \frac{\omega_0^2 \cdot \rho_0}{2}; \qquad (7)$$

где ξ_0- коэффициент сопротивления истекающей из отверстия тяжелой жидкости, определяется экспериментально, ω_0 - скорость истечения тяжелой жидкости из отверстия, м/с.

Если мы выразим уравнения (2), (6) и (7) на основе уравнения (1), мы получим следующее, Па;

$$\rho_c g(1-\varphi_0)H_0 + \rho_0 g H_2 + \xi \frac{w_0 \rho_0}{2}; \qquad (8)$$

Выполняя необходимые математические операции в выражении (8), находим скорость истечении тяжелой жидкости, м/с;

$$w_0 = \sqrt{\frac{2g(\rho_0 \cdot H_2 - \rho_{ap} \cdot (1-\varphi_0)H_0)}{\xi_0 \rho_0}}; \qquad (9)$$

В зависимости от этой скорости можно определить расход тяжелой жидкости, протекающей через одно отверстие, м³/час;

$$Q'_c = \pi R^2 \omega_0 3600; \qquad (10)$$

Для эффективного осуществления массообменных процессов в аппарате выберается соотношение легкой и тяжелой жидкости [6-10]. Это соотношение очень важно учитывать при проектировании экстрактора. В зависимости от этого определяется также количество сливного отверстия тяжелой жидкости.

Полученные результаты

Проведены экспериментальные исследования для проверки уравнения (9), которое вычисляет скорость истечение тяжелой жидкости, полученного в результате теоретических исследований. В зависимости от количества газосодержания во внутренней зоне смешения экспериментального устройства φ_0 и плотности тяжелой жидкости ρ_0, а также плотности смеси $\rho_{\text{см}}$ определялся расход тяжелой жидкости, протекающей через отверстие.

Вода была выбрана в виде легкой жидкости и смеси четыреххлористого углерода с бензолом в виде тяжелой жидкости. Плотность смеси легких и тяжелых жидкостей определялась с использованием уравнения (3).

В экспериментах доля тяжелых жидкостей составляла 33%, а доля легких жидкостей - 67%.

1. $\rho_{ap} = 1200 \cdot 0,33 + 1000(1 - 0,33) = 1066$, кг/м³;

2. $\rho_{ap} = 1100 \cdot 0,33 + 1000(1 - 0,33) = 1033$, кг/м³;

Первоначально для определения коэффициентов сопротивления отверстий к патрубке слива тяжелой жидкости образовались отверстия диаметром d = 1; 1,5; 2 мм. Определено время истечения 1 литра тяжелой жидкости из каждого отверстия. В зависимости от этого времени определялись коэффициенты сопротивления отверстий. Результаты экспериментов обработаны на компьютере, получены уравнения регрессии и построен график (рисунок 3).
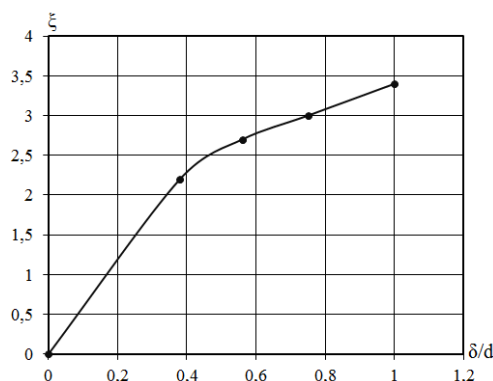
Рис.3. График изменения коэффициента сопротивления в зависимости от изменения толщины стенки отверстия и диаметра отверстия.

Вид полученного уравнения регрессии следующий.

$$1. y = -3{,}3501x^2 + 6{,}6504x + 0{,}0359 \quad (11)$$

$$R^2 = 0{,}9945$$

Для экспериментов были выбраны отверстия в сливной трубе диаметром 1 и 2 мм. Первоначально в трубе откривали отверстие диаметром 2 мм и подавали тяжелую жидкость. Скорость жидкой смеси, подаваемой в зону смешения устройства, передавалась в постоянном $w_0 = 0{,}07$ м/с. При постоянных скоростях жидкости, скорости газа изменяли $w_г = 0{,}06$, 0,09, 0,13м/с и определяли экспериментальные значения количества газосодержания во внутренней зоне смешения устройства. В соответствии с этими скоростями газа экспериментальные значения количества газосодержания изменились на $\varphi_0 = 0{,}1$, 0,2, 0,3. Исходя из установленных режимов, экспериментально определень расход тяжелой жидкости, поступающей в зону смешения устройства.

В зависимости от времени нахождения в зоне осаждения устройства определяли объем тяжелого слоя жидкости, образовавшегося в результате осаждения, h. Установленное время эксперимента составляло 0,25 часа.

Последовательность экспериментов проводилась отдельно для каждого из отверстий диаметром d = 2 и 1 мм в сливном патрубке при φ_0 = 0,1, 0,2 0,3 от количества газосодержания. Теоретические значения количества газосодержания определялся с помощью уравнений 4.

Используя уравнение (9), были определены теоретические значения скорость истечение тяжелой жидкости. Расход тяжелой жидкости определяли с использованием уравнения (10). Теоретические и экспериментальные значения были сопоставлены и проанализированы. Анализ подтвердил правильность уравнения (9), рекомендованного для расчета скорость истечение тяжелой жидкости. Полученные результаты обработаны на компьютере и получены уравнения регрессии. Разница между теоретическим и экспериментальным значениями составила $\pm$ 7%. Построены графики (рисунки 4 и 5).
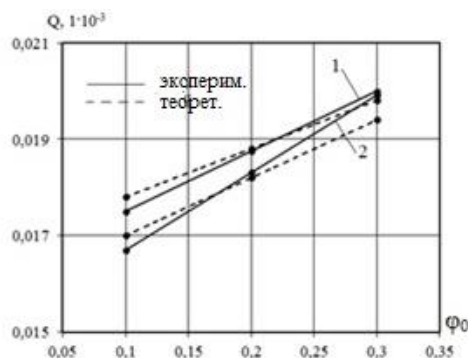
$\xi = 2{,}7$; $w_с = 0{,}07$ м/с, (const).
1. $\rho_0 = 1200$ кг/м^3, $\rho_{ар} = 1066$ кг/м^3; 2. $\rho_0 = 1100$ кг/м^3,$\rho_{ар} = 1033$ кг/м^3;
Рис. 4. $Q = f(\varphi)$ **График изменения расхода тяжелой жидкости в зависимости от изменения объема газосодержания (сравнительный график).**

Вид полученного уравнения регрессии следующий.

$$1. y = 0{,}0125x + 0{,}0163 \quad (12)$$

$$R^2 = 1$$

$$2. y = 0{,}012x + 0{,}0158 \quad (13)$$

$$R^2 = 1$$

Вид полученного уравнения регрессии следующий.

$$1. y = 0{,}004x + 0{,}0034 \quad (14)$$

$$R^2 = 0{,}9881$$

$$2. y = 0{,}004x + 0{,}0036 \quad (15)$$

$$R^2 = 0{,}9776$$

ξ = 3,4; w_c=0.07 м/с, (const).

1. ρ_0 = 1200 кг/м³, ρ_{ap} = 1066 кг/м³; **2.** ρ_0 = 1100 кг/м³, ρ_{ap} = 1033 кг/м³;

Рис. 5. $Q = f(\varphi)$ **График изменения расхода тяжелой жидкости в зависимости от изменения объема газосодержания (сравнительный график).**

Вывод:

В результате теоретических исследований получена формула, для расчета скорость истечение тяжелой жидкости. Для проверки этой формулы проведены экспериментальные исследования. Экспериментальные исследования полностью подтвердили предложенное уравнение. По результатам теоретических и экспериментальных исследований разработана методика расчета расхода тяжелых жидкостей, подаваемых в аппарат. В зависимости от этого значения создавались условия для правильного выбора соотношения расхода легких и тяжелых жидкостей, подаваемых в аппарат.

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THE ROLE OF SCIENTIFIC KNOWLEDGE AND ABSTRACTION IN IT, AS WELL AS PROBLEMS OF LINGUISTIC MODELING

Abstract: This article discusses the role of cognition, scientific knowledge and abstraction in human activity, modeling, and its interpretation in various literatures, its essence and application to linguistics.
Key words: Cognition, vital knowledge, scientific or theoretical knowledge, essence, comparison (comparison), emotional intuition, perception, imagination, abstraction, modeling.
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Scopus ASCC: 1203.

Introduction

In human activity, cognition is manifested in two types, vital and scientific cognitive status. Vital knowledge is primary, in which man strives to satisfy his living needs. The thing about this relationship is that information is formed about the beneficial and harmful properties of events to people. Scientific or theoretical cognition is a high-level activity of thinking in which man now seeks to know the essence of things, regardless of whether they are useful or harmful. The essence is the phenomenon that manifests in any situation the specific quality, the identity of what makes it something, that is, the necessary connections, the integrity of the relationship, which is inherent in its internal structure. For example, the essence of water, or what makes water water, is that in its internal structure, two hydrogen atoms are in contact with one oxygen atom. The essence of the formation of the light bulb is the presence in it of the opposite connection of plus and minus charges. The presence of a sentence is the result of the possession in it and the connection of the cut. Of course, man cannot comprehend the essence of a thing without the intuition, perception, and imagination of the stage of emotional cognition. They can only know (feel) the features that are related to the occurrence (event) of the essence. Man's need to move from event to knowledge of essence creates

scientific knowledge. This process is inextricably linked with people's desire to know the unknown, their desire to create something other than what is natural in life and production, and finally the relatively independent activity of thinking, which is a higher form of consciousness. The basis of scientific knowledge is practice, essence, man's active relationship with the world around him, his influence on it, his attempt to change things and events in the way of his own interests. This process serves as a basis for the gradual development of cognition from the emotional stage to logical cognition, the transformation of vital cognition into scientific (theoretical, scientific) learning.

The main findings and results

Cognition is based on the processes of comparison (comparison) and identification of characters. Memory and comparison have played an important role in the transition from emotional intuition, perception, and imagination to logical understanding, judgment, and inference. Because in the memory (brain) some visual signs and integral images, which are the result of emotional cognition of the thing, were recorded, "caught" and began to be preserved. Later, with the help of these preserved emotional whole images (imaginations), the relatively independent activity of the mind, that is, the

comparison of this image or their signs, and on this basis the understanding of similarities and differences in objects or events began. In this way, the process of thinking shifted to thought. Thinking is the attempt to connect concepts formed on the basis of emotional perceptions on the basis of comparison and to create new concepts (knowledge) on this basis.

In order to compare two objects, first of all, a certain feature of this object is separated from it. In other words, the subject is divided into its constituent parts (signs). This mental process is called analysis. The purpose of this is, firstly, to know the object, to perceive some of its features, and secondly, in comparison, the comparison is made only with a particular or a sign, that is, a person has the ability to compare one sign with another. Because each object combines many characters in the same time and space. For this reason, one object can be compared with another not on the basis of its complete features, but only on the basis of certain features. This requirement of comparison requires that the object, which is a set of different characters, a whole, be divided into parts first. Hence, subject analysis is the beginning or the first stage of logical (abstract, ideal, abstract) cognition. The analysis process is based on a whole-part approach. In this case, the compatibility and similarity of two integers (things) is checked on the basis of their specific parts (signs).

The driving force of comparison is the attempt to know the unknown on a certain basis. Because when a person encounters an unknown thing or reality, he tries to understand what it is. In such cases, the essence of comprehension is to attribute the unknown to the known, to declare the unknown, or to know the unknown only on the basis of the known. In other words, an analogy of the unknown to the known is made. Analogy is the process of determining whether an unknown object contains characters in a particular object. If unknown and known objects contain the same characters, they are called similar. This similarity can be at different levels depending on exactly how many characters are present. Of course, the familiarity of certain characters in an unknown object on the basis of prior knowledge leads to the distinguishing of the remaining unknown characters in that object. In this way, characters that are not familiar with the previous familiar, similar characters are recorded. These signs are now beginning to be seen as distinctive, distinguishing features of the unknown object. On this basis, these characters are now transferred to the series of familiar, learned characters. In other words, the unknown (object) becomes known (object) and the specific need for knowledge are satisfied.

Analysis (separation) is based on synthesis (whole, whole-to-whole). Because the part cannot be imagined without the whole, the whole without the part. Because the part is present in the whole, only in the whole parts. In the analytical-synthetic activity of

thinking, the properties of being are abstracted or generalized. More precisely, these qualities are transformed from emotional, that is, vivid, visual, material imagery into insensitive, spiritual, ideal characters. At the same time, the features are separated from the object of life and begin to be imagined as a sign, an object of independent consciousness (thinking). This ideal sign in contemplation reflects only the essence, the most important aspects, of the attribute or thing that corresponds to it in existence. On this basis, the truthfulness of the perception of thinking, its conformity to reality (the original representation of the universe and its things) is ensured. The transition from emotional concreteness to logical abstraction can be seen in the example of the "white" phenomenon: *white as a physical phenomenon associated with a particular objective thing → white as a sexy form of a particular physical phenomenon → generally white as a characteristic of many things.*

In this case, $white_1$ is a natural feature, $white_2$ is a perceptual form of a natural feature, and $white_3$ is a form of perception. Thus, the separation and abstraction of certain features from the object, certain features from the emotional images, created great opportunities for the human being to know the world in detail and in depth.

Results and discussions

Abstraction has arisen as a result of the continuous development of perceptions from perception to perception, from perception to perception, from perception to perception, which in turn leads to perceptions individually, separately, and more generally and most generally. The highest forms of abstraction are categories and laws. Because they reflect the most general, important aspects of the system and construction of the universe (thing, event, relationship). Therefore, since the dialectic of the stages of specificity → individuality → generality is true, we can carry out the process of knowing in the direction of generality → individuality → specificity through thinking. Therefore, the unity and struggle of contradictions, which reflect high abstractions, generalizations, the transition of quantitative changes to qualitative changes and the laws of negation and the categories that serve them, serve as a methodology (general guide) for scientific knowledge. It follows that both language models and linguistic modeling can be successfully solved only through theoretical interpretations using the basics of abstraction (analysis, synthesis, induction, deduction, analogy), dialectical law and categories.

The term "model" originally came from Latin, which passed into French through Italian, and originally meant "measure" (mera), "sample" (obrazets). In modern times, the term has meanings such as "a sample of a chronically manufactured product "," a pattern, brand, type of construction of

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something ",“ a reduced or enlarged copy of an object ",“ an object depicted in art ",“ a sample of an object made of another material or casting ",“ society and natural process or a scheme for describing or interpreting an event". The Uzbek dictionary explains that the word "model" is French and means "something like or enlarged, a model", "something that will be a sketch for a work of art", "a copy made of wood or metal for casting". The philosophical encyclopedic dictionary explains the semantics of the philosophical term "model" as follows: "Model in logic and methodology of science is an analogue (scheme, structure, system of signs) of a certain social or natural part, human culture, and logical-theoretical product - the original.This analog serves to store and expand the knowledge (message) about the original thing, to design, change or manage the original thing. From the epistemological point of view, the model is the "representative' and "deputy" of the original in knowledge and practice. The results of research and development under certain conditions, explained on the basis of logic and methodology of the types of models and their characteristics in different areas, are applied to the original. From a logical point of view, such an application is based on an isomorphism-homomorphism relationship (an isomorphic or homomorphic image of a particular object is a model of that object) or a more general relationship between the model and the object being modeled. One is that if there is an isomorphic relationship between the M_1^1 and M_2^1 homomorphic images of certain systems, the M_1 system is a model of the M_2 system (isomorphism and homomorphism are special cases of this relationship: the first is the equation of M_1 and M_1^1 and M_2 and M_2^1, will be).

This relationship, similar to isomorphism, is in a state of equality, giving the modal relationship a relative character, i.e. it raises the question of choosing M and the original in terms of a given task (e.g. from different points of view M can be an aerial photograph of the place and the place itself). This situation corresponds to the use of the term "M" in scientific practice: systems of mathematical ideas (axioms, equations) that serve to describe some area or field of real or abstract objects of science, such as physics, cosmology, mathematical linguistics, mathematical economics, and cybernetics. At the same time, in logic and mathematics, this term (model) has the opposite meaning. In them, the term "model" means the interpretation of logical-mathematical laws. The study of such laws is carried out in the model theory of mathematical logic, which understands logic semantics, predicates, and arbitrary multiplicity of elements with specific functions as models. But no matter which member in the analog-original (similar-self) relationship is a model, the model always plays the role of cognition, as a means of explanation, prediction, and heuristics.

In the dictionary "Dictionary of linguistic terms" O.S. Akhmanova explains the application of the term model to the linguistic phenomenon: "1. (scheme). Legitimate sequential placement of segment and super-segment elements in complex language units that are inextricably linked to a particular language structure and its formation in speech: a morphological model. Consistent placement model of English consonants. Gap models. Word formation model. Emphasis model (emphasis diagram). The type of relationship of accented, weak accent, and unaccented syllables in a word that is specific to a particular language. Intonation model. The contour of the intonation is the same. 2. The paradigmatic scheme of the components of the structural elements specific to a particular language; a scheme (or part of it, a compact symbolic representation of the elements) that is the basis of modeling, one of the methods of language learning. Compare. Modeling. Phoneme models. The generating model. A rule or set of rules that allows the construction of sentences in accordance with the laws of a particular language. These rules exclude the construction of incorrect sentences. Taxonomic model. A model that linguistically describes linguistic units and their meaningful arrangement in the flow of speech. The gap in the model. Relationship model. In another linguistic dictionary, a model is interpreted as a diagram or pattern showing the sequence of parts of a language unit.

The modeling phenomenon also has its own special interpretation. In particular, the philosophical encyclopedic dictionary describes it as follows: "Modeling is a method of studying objects of knowledge based on models; to study the design of real existing objects and phenomena (social, organic and inorganic systems, engineering devices, various physical, chemical, biological, social processes) and objects, to improve their characteristics, to study their models, structure in order to understand construction methods. The shapes of the models are varied, depending on the use of the models and the areas of application of the models. Modeling is divided into subject and definite (informative) types of modeling according to their nature.

Modeling is object-based modeling in which research is conducted on a model of a particular geometric, physical, dynamic, or functional characteristic of an object - the original; in the special case of simulation modeling (where the original and the model are in certain mathematical relations, e.g., in the same differential equations), the electrical model is used to study mechanical, hydrodynamic, acoustic, and other phenomena. In symbolic modeling, schemes, diagrams, formulas, sentences based on certain alphabets (belonging to natural or artificial languages) serve as models. The most important type of such modeling is mathematical (logical-mathematical) modeling, which involves the

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deductive and descriptive means of mathematics and logic.

Since the use of symbols is always more or less related to definite constructions and their variations, the construction of definite models or their parts can be replaced by the visual representations of symbols or the process of working on them (thought modeling). The structure and state of the modeling (task performance, the processes that take place in it) differ in terms of the aspect to be considered in object modeling. The structure and function of such differentiation has a clear meaning in life sciences, which are the fundamental basis of research, and in cybernetics, which pays special attention to the function of the system.

Modeling is an epistemological category that is one of the most important ways of knowing. The possibility of modeling, that is, the basis for the application of the results obtained in the construction and study of models to the original, is that the model in a sense reflects (recreates, models) a certain aspect (aspects) of the original. Sufficiently based theories or hypotheses for successful modeling of these aspects must be consistent with the possible simplification in modeling.

Modeling is always used in conjunction with other general and special methods; it is especially inextricably linked with experiment. The study of a particular event in its model (in prepositional, analogical, symbolic models) is a separate experiment - a model experiment, which differs from the usual experiment in that it adds an intermediate link to the cognitive process, i.e. a model that replaces the original and is both a learning tool and an object. In an important special case of such an experiment (model-cybernetic experiment), when performing "real" experimental work with the object under study, there is an algorithm (program) for its performance, and this model performs the function.

Modeling requires processes of abstraction and idealization. This feature of modeling (abstraction, idealization) becomes important when the object of modeling is complex systems, the states of which depend on a large number of interrelated phenomena of different nature. In the process of learning, such systems are described by different models that complement each other. In addition, situations arise that have opposite models of an event. Such contradictions are eliminated in the course of the development of science (later high-level modeling occurs). For example, at a certain stage of theoretical physics, in the "classical" stage of modeling of physical processes, models were used that reflected the fact that corpuscular (particles) and waves could not exist equally. This contradiction was later overcome by the creation of quantum mechanics about the corpuscular-wave structure of physical reality.

Modeling penetrates deep into the areas of theoretical thinking and practical activity. It is not only one of the processes of reflecting reality processes and events, but also a criterion for verifying scientific knowledge through the interaction of models or theories whose relevance is based on practice. The modeling used in close connection with other methods serves to deepen knowledge, to move from relatively less informed models to models that more fully reveal the essence of the object under study.

In linguistic dictionaries, modeling is defined as a scientific method of schematic reconstruction of an object that is not directly observable or of extreme complexity, or "the creation of a model or scheme of a particular linguistic unit".

Conclusion

In general, the descriptions of models and modeling in different variants in different dictionaries show that these tools and methods serve effectively for the development of all sciences. The difference between language and speech in linguistics, the beginning of the study of the features of speech phenomena of linguistic units, makes the issues of modeling and modeling relevant in linguistics as well.

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DFT STUDY OF THE COCRYSTAL BETWEEN FAVIPIRAVIR AND LAMIVUDINE

Abstract: The DFT method was used to analyze some quantum-chemical parameters of known drugs - Favipiravir and Lavimidine and their co-crystals. And also an analysis of the surface of the electrostatic potential of the co-crystal and its main components was carried out. Furthemore, non-covalent interactions of cocrystal is visualized using MultiWFN and VMD program packages.
Key words: Favipiravir, Lavumidine, DFT, QSP, NCI, HOMO, LUMO.
Language: English
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Introduction

It is known that in recent years, computational methods based on density functional theory (DFT) have been widely used to solving chemical problems [1-3]. DFT calculations by modern basis sets can be performed on several computational programs (GAMESS [4], Firefly [5], Gaussian [6], ORCA [7], etc.). In one side, It is possible to directly determine the spatial structure of the compound, the charge distribution on atoms (q_A), the energies of molecular orbitals and the fraction of atoms in them, spectra, dipole moment and other theoretical parameters from the calculation results. In other side, indirectly can be determined the Hirshfeld index, analysis of electrostatic potential levels (ESP), density of states (DOS - density of states), localization and delocalization indices of the molecule, LOL (localized orbital localizer), NCI (non-covalent interactions) [8-9]. Non-covalent interactions (VdV interactions, hydrogen bonds, phase effects, etc.) are of great

importance in chemistry. These interactions play an important role in the formation of single-crystals of compounds and in crystal packing in crystal cells. Therefore, the most useful quantum-chemical parameters (QSP) of favipiravir, lamivudine and their cocrystal were studied by the DFT method.

The objects of our study are cocrystal of Favipiravir and Lamivudine. Favipiravir (Avigan) is a new antiviral medication developed by Fuji Film Company and Toyama Chemical with effectiveness against viral infectious diseases such as Ebola virus [10,11]. Several laboratory studies have shown the effectiveness of favipiravir against Ebola virus. Lamivudine (3TC) is an antiretroviral medication that reduces the amount of HIV in the body. Anti-HIV drugs such as lamivudine slow down or prevent damage to the immune system, and reduce the risk of developing AIDS-related illnesses. Lamivudine is also active against hepatitis B virus (HBV). The latest news and research on HIV treatment Lamivudine is available as part of several co-formulations [12].

Materials and methods.

The geometry of the cocrystal (Fig.) was obtained from the single crystal XRD data (cif file), which will be printed anywhere, and it has been fully optimized by the DFT/def2-TZVP method using

ORCA 4.2.0 program package [13]. The Hybrid method of Becke [14] with three parameters and correlation functions of Lee, Yang and Parr [15] was chosen as a DFT (B3LYP) method. The def2-TZVP method is developed by Ahlirichs group [16] and it successfully used in our previous works [17].

The geometries of favipiravir's tautomeric forms and lamivudine were built using the ORCA modified Avogadro [18] program package. And also, Avogadro program have been used for visualizing frontier electron densities and atomic charges by Malliken.

The surface analysis of electrostatic potential (ESP) and non-covalent interactions (NCI) have been carried out using MultiWFN [19] and VMD [20] program packages.

Results and discussion.

Due to the high biological activity of favipiravir and lavumidine, the compounds were confirmed for experimental and theoretical studies [10-12]. Antonov [21] has investigated the tautomerism of Favipiravir by DFT method and determined relative stability of the enol form. The keto form of Favipiravir is obtained in cocrystal of Favipiravir with Lavumidine. Therefore, we calculated QSP for both tautomeric forms of favipiravire, Lavumidine and their cocrystal (Fig.1).

Fig.1. Optimized cocrystal of Favipiravir with Lavumidine and one molecule of water.

Charge distribution on atoms is one of the important quantum chemical parameters in chemistry, which shows the relative charge density in the vicinity of an atom.

The largest negative charge is located in oxygen atom of keto (q_O=-0.41) and enol (q_O=-0.43) group in

the case of Favipiravir (Fig.2). The largest negative charge is located in oxygen atom of OH group, in the case Lavumidine. A significant change in negative charges on the above indicated oxygen atoms are found in the cocrystal.
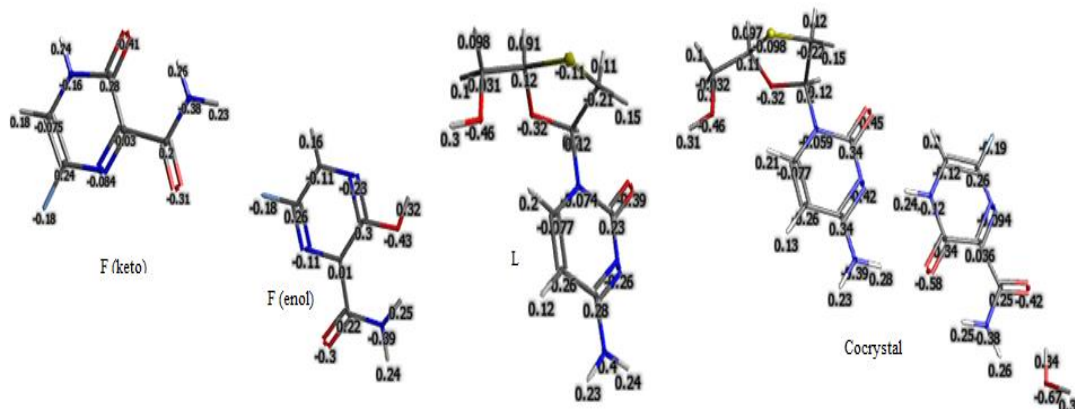
Fig.2. Charge distribution on the atoms of the studied compounds

An ESP is useful parameter about molecules reactive behavior, especially in intermolecular interactions and it indicates electron-rich (nucleophilic) and electron-poor (electrophilic) sites of molecules. The ESP maximum (minimum) value is equal to 61.04 (-5037) kcal/mol in the keto form of Favipiravir, and the maxima is localized in vicinity of H atom of aromatic N atom (Fig.3). The minimum is localized in vicinity of amid O and pyridine type N atoms. In this case of Lavumidine it is equal to 51.28 (-54.02) kcal/mol.

In the case of the cocrystal, the maximum is localized in vicinity of H atom of Lavumidine's -OH group. And The minimum is localized near to pyridine type N and amid O atoms of Favipiravir (Fig.3).

Frontier molecular orbitals (HOMO, LUMO), energy gap between them (ΔE), total energy (Etot), atomic charges on selected atoms (Qi), dipole moment (μ), electronegativity (χ), chemical hardness (η), chemical potential (μp), softness (σ) and electrophilicity index (ω) are considered as quantum chemical descriptors (QCP) in QSAR. According to Koopmans' theorem HOMO and LUMO are equal to ionization potential (I) and electron affinity (A), respectively. HOMO represents the electron-donating ability of molecules, and LUMO is the electron-acceptor ability of molecules in a series of related compounds. Energy gap (ΔE) considered as a stability index of chemical compounds. Therefore, the parameters mentioned above were calculated for both keto and enol tautomers of Favipiravir, Lavumidine and also for their cocrystal (Table 1). It is known that molecules with a small energy gap between (ΔE) HOMO and LUMO are more polarizable and have a higher chemical reactivity. According to Table 1, the co-crystal has a smaller energy gap between the boundary orbitals.

Table 1. QCP for both tautomer form of Favipiravir and Lamivudine and their cocrystal calculated by the B3LYP/def2-TZVP method in vacuum

Quantum chemical parameter	F (Enol)	F (keto)	L	Cocrystal
E_{HOMO}, eV	-7.23	-6.98	-6.15	-6.42
E_{LUMO}, eV	-2.45	-2.94	-0.75	-2.34
$|\Delta E| = E_{HOMO} - E_{LUMO}$, (eV)	4.78	4.04	5.4	4.08
Ionisation potentials, $I = -E_{HOMO}$, (eV)	7.23	6.98	6.15	6.42
Electron affinity, $A = -E_{LUMO}$, (eV)	2.45	2.94	0.75	2.34
Electronegativity, $\chi = (I + A)/2$ (eV)	4.84	4.96	3.45	4.38
Chemical hardness, $\eta = (I - A)/2$ (eV)	2.39	2.02	5.4	2.04
Chemical potential, $\mu_p = -(I + A)/2$ (eV)	-4.84	-4.96	-3.45	-4.38
Chemical softness, $s = 1/(2\eta)$ (eV^{-1})	0.20	0.24	0.09	0.24
Electrophilicity index, $w = \mu_p^2/2\eta$ (eV)	4.89	6.02	1.10	4.70
Dipole moment, μ (Debye)	5.78	5.99	6.49	13.82

F(Enol)- enol tautomeric form of favipiravir, F (keto) - keto tautomeric form of favipiravir and L – lamivudine
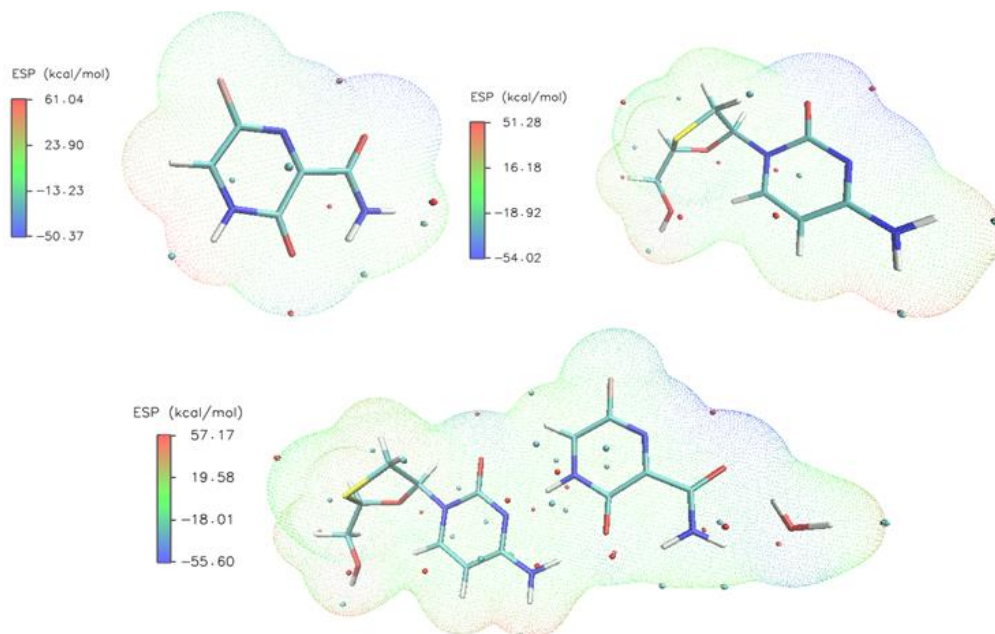
Fig.3. ESP surface for keto form of Favipiravir, Lavumidine and their cocrystal.
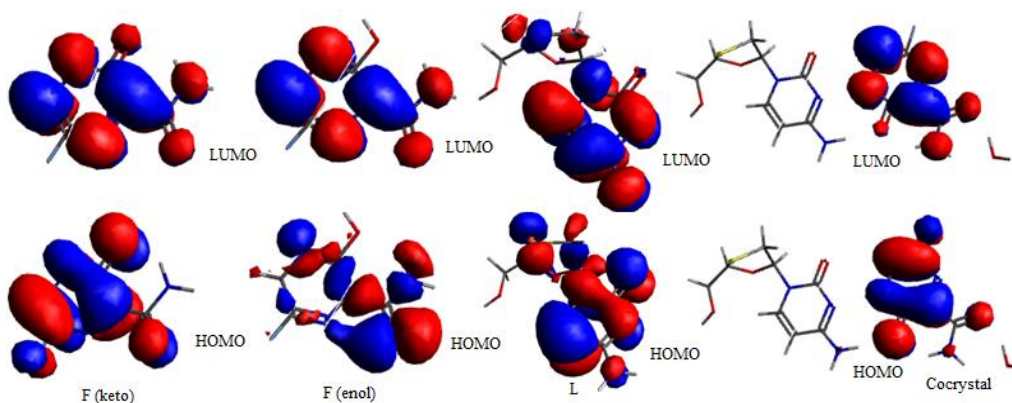
Fig.4. Frontier electron densities for keto form of Favipiravir, Lavumidine and their cocrystal.

NCI analysis shows presence of H-bond, steric effects and also Van-der-Waals interaction in cocrystal obtained by interaction of Favipiravir and Lavumidine (Fig.)
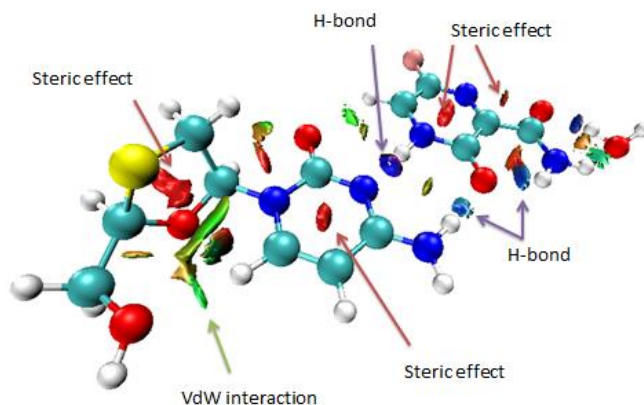
Fig.5. Non-covalent interactions in the cocrystal.

Conclusion.

Thus, the geometry of Favipiravir, Lavumidine and their cocrystal were fully optimized by B3LYP/def2-TZVP method and some quantum-chemical parameters have been calculated. The ESP surface minima and maxima were determined for the cocrystal and its main components. Furthermore, non-covalent interactions of cocrystal is visualized using MultiWFN and VMD program packages

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PROPERTIES OF SECONDARY POLYETHYLENE TEREPHTHALATE ALCOHOLYSIS PRODUCT

Abstract: In the process of alcoholysis of secondary polyethylene terephthalate with diethylene glycol, the conditions for the synthesis of aromatic hydroxyl-containing polyether polyols with known molecular weight and functionality were studied. The conditions of polycondensation were studied at various ratios of adipic acid and aliphatic diglycol (DEG, EG, BD). The technological parameters for the synthesis of aliphatic hydroxyl-containing polyether polyols with known molecular weight and functionality have been determined.

Key words: hydroxyl-containing polyether polyol, molecular weight, functionality, secondary polyethylene terephthalate, adipic acid, diethylene glycol, ethylene glycol, butanediol.

Language: Russian

СВОЙСТВА ПРОДУКТА АЛКОГОЛИЗА ВТОРИЧНОГО ПОЛИЭТИЛЕНТЕРЕФТАЛАТА

Аннотация: В процессе алкоголиза вторичного полиэтилентерефталата диэтиленгликолем были изучены условия синтеза ароматических гидроксилсодержащих полиэфирполиолов с известной молекулярной массой и функциональностью. Изучены условия поликонденсации при различных соотношениях адипиновой кислоты и алифатического дигликоля (ДЭГ, ЭГ, БД). Определены технологические параметры синтеза алифатических гидроксилсодержащих полиэфирполиолов с известной молекулярной массой и функциональностью.

Ключевые слова: *гидроксилсодержащий полиэфирполиол, молекулярная масса, функциональность, вторичный полиэтилентерефталат, адипиновая кислота, диэтиленгликоль, этиленгликоль, бутандиол.*

Введение

Гидроксилсодержащие полиэфирполиолы (ГСП) играют важную роль в полимерной промышленности. Из них производят полиуретан, лакокрасочные материалы [1], различные композиционные полимерные материалы и другие изделия [2-3]. Рассмотрим работы мировых ученых по синтезу, свойствам и свойствам гидроксилсодержащего полиэфирполиола (ГСП):

Был синтезирован поликонденсированный разветвленный полиэфир в присутствии дибутилоксида глицерина и адипиновой кислоты, и его увеличение молекулярной массы (ядерный магнитный резонанс) было доказано методом ЯМР [4, 5]. В последующих исследованиях его молекулярная масса, теплопроводность, температура стекла и реологические свойства были подробно изучены при взаимодействии с различными дикарбоновыми кислотами и диодами [6-10].

Это определяется молекулярной массой и функциональностью ГСП. Поэтому изучение закономерностей образования ГСП с известной молекулярной массой и функциональностью имеет большое теоретическое и практическое значение.

На сегодняшний день разработка полимерных композиционных материалов с заданными свойствами является перспективным направлением. Одним из способов создания таких полимерных композиций является синтез ГСП с определенной молекулярной массой. На этой основе можно производить различные композиционные полимерные материалы, улучшающие их физико-механические свойства.

Следовательно, можно синтезировать ГСП с определенной молекулярной массой, выбрав дикарбоновые кислоты и гликоли и изменив их молярные соотношения [11, 12].

В нашем исследовании термореактивные олигомеры включают блоки разной длины, которые снижают активность реакционноспособных активных групп при синтезе олигомеров, и поэтому синтезируют термореактивные олигомеры с молекулярной массой, в несколько раз превышающей текущую молекулярную массу.

Исходя из вышеизложенного, термореактивные олигомеры могут быть важным шагом в решении фундаментальной проблемы высокомолекулярных соединений, регулируя их молекулярный вес и тем самым увеличивая их молекулярный вес, создавая до сих пор нерешенную проблему - термореактивные олигомеры с высоким молекулярным весом. Положительное решение этой проблемы создаст научную основу для получения высокомолекулярных термореактивных олигомеров.

Следовательно, прикрепление сомономеров разной природы и длины между цепями, формирующих термореактивность, поскольку мономеры абсорбируются между слоями, позволяет регулировать длину цепи линейных олигомеров. В связи с этим были проведены научные исследования по увеличению молекулярной массы фурановых олигомеров на основе алифатических ГСП [13, 14]. Также этим методом можно получить высокомолекулярные фенолформальдегидные олигомеры. Мы проводим исследования по синтезу высокомолекулярных термореактивных олигомеров в результате взаимодействия фенольных спиртов (полупродуктов термореактивной цепи) с алифатическими ГСП. В этом случае синтезированные термореактивные олигомеры обладают способностью изменять механические и теплофизические свойства конечных решетчатых полимеров в широком диапазоне, изменяя природу и длину блоков полиэфирного полистирола между термореактивными цепями.

Методы и материалы.

В исследованиях использовались следующие вещества: диэтиленгликоль (ХЧ) ГОСТ (10136-77), плотность при 20 °C - 1,118 г / см3, показатель преломления - 1,4475, температура кипения - 244,8 °С. Его перегоняли под вакуумом при давлении 101,325 кПа и температуре 244–249°С. Этиленгликоль (ГХ) (ГОСТ 9710-2019), плотность при 20 ºC - 1,113 г / см3, показатель преломления -1,4315, температура кипения - 197,3 º С. Бутандиол (ХЧ) (ГОСТ 30333-2007), плотность при 20 C-1,017 г / см3, температура кипения - 235 С. Адипиновая кислота (ХЧ) (ГОСТ 10558-80), точка плавления - 152 °C, температура кипения - 265 °C (100 мм / рт. Ст.).

Процесс синтеза ГСП проводили в четырехгорловой колбе, снабженной мешалкой, холодильником, термометром и капилляром (для инертного газа). Сначала в колбу добавляли 1,1 моль гликоля, затем 0,18% от общей реакционной массы добавляли ацетата цинка Zn (CH3COO) 2 и температуру повышали до 80 ° C. После полного растворения ацетата цинка в гликоле в колбу добавляли 1 моль адипиновой кислоты. Реакцию проводили при 190 в среде инертного газа (азота) в течение 6 ч. По окончании реакции оставшуюся воду в реакционной массе удалили в вакууме.

Целью данного исследования является синтез гидроксилсодержащих сложных

Clarivate Analytics *indexed*

полиэфирполиолов полиолов с определенной молекулярной массой и функциональностью. Поэтому мы разделили результаты эксперимента на две части.
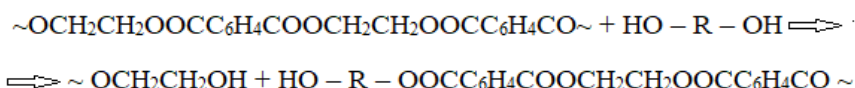
Результаты и обсуждение.

Алкоголиз вторичного полиэтилентерефталата (ВПЭТФ) и изучение молекулярной массы ароматических полиэфирполиолов.

На основании научных исследований [15, 16] мы выбрали вторичный полиэтилентерефталат (ВПЭТФ) в качестве исходного материала. для синтеза ароматических полиэфирполиолов. Выбор ВПЭТФ для синтеза ароматических полиэфирполиолов имеет два очевидных преимущества. Во-первых, это увеличивает сырьевую базу полимеров. Во-вторых, есть хорошее решение проблемы утилизации мусора.

В результате алкоголизации ВПЭТФ дигликолами ароматические ГСП образуются по следующему реакционному механизму [17].

$$\sim OCH_2CH_2OOCC_6H_4COOCH_2CH_2OOCC_6H_4CO\sim + HO - R - OH \Longrightarrow$$

$$\Longrightarrow \sim OCH_2CH_2OH + HO - R - OOCC_6H_4COOCH_2CH_2OOCC_6H_4CO\sim$$

Результаты исследования показывают, что олигомеры с разными молекулярными массами могут быть получены путем изменения молярного соотношения ДЭГ, полученного для синтеза. Исходя из этого, мы синтезировали ароматические ГСП с разной молекулярной массой. Молекулярная масса и функциональность синтезированных ГСП были определены экспериментально по известным методикам . Когда молярное соотношение ДЭГ на моль ВПЭТФ изменяется от 0,3 до 1 моль, средняя молекулярная масса (кривая 2 на рисунке 1) уменьшается с 1950 до 380. Также видно, что температура плавления (рис. 1, кривая 3) снижается от 180 до 50 °C. Однако мы можем видеть, что функциональность ГСП увеличивается, когда количество ДЭГ изменяется с 0,3 до 1 моль по сравнению с 1 моль ВПЭТФ. В то же время количество гидроксильной группы в ГСП увеличилось с 4,5 до 9,9% соответственно (рис. 1, кривая 1).

Основываясь на результатах вышеуказанного эксперимента, следует отметить, что при изменении молярного соотношения ДЭГ, полученного для ВПЭТФ При алкоголизе можно синтезировать ГСП с различной функциональностью и молекулярной массой. Также возможно синтезировать ароматические ГСП с различными функциями путем алкоголизации ВПЭТФ другими дигликолами.
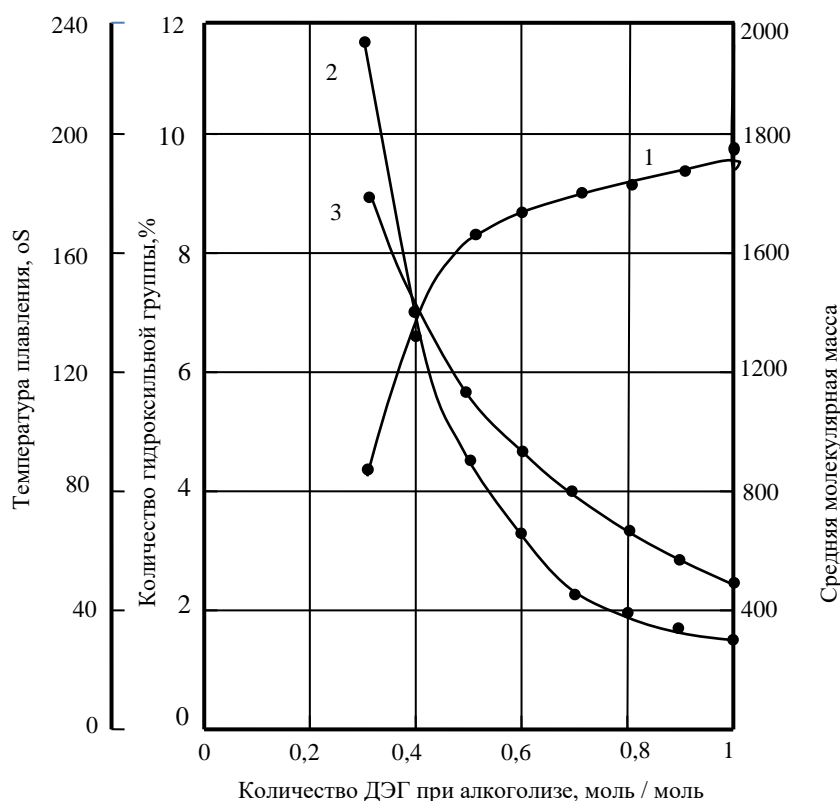
Рисунок 1. Влияние количество ДЭГ на физико-химические свойства алкогольной продукции алкоголиза ВПЭТФ
1- количество гидроксильной группы, %; 2-я средняя молекулярная масса;
3- температура плавления, ºC

Использование сложных олигоэфиров с различной молекулярной массой в производстве ненасыщенных полиэфиров позволяет изменять твердость и пластичность получаемых продуктов, контролируя время отверждения ненасыщенные полиэфиры. Это достигается вставкой алифатических гибких цепей разной длины между цепями олигомеров, которые имеют разные функциональные группы и имеют тенденцию сшиваться [18].

В этом исследовании мы синтезировали ГСП на основе адипиновой кислоты (АДК) и этиленгликоля (ЭГ), диэтиленгликоля (ДЭГ), бутандиола (БД) и изучили некоторые из его свойств.

Известно, что одним из важных факторов, определяющих молекулярную массу олигомеров, образующихся при поликонденсации двух типов мономеров, является соотношение этих функциональных групп. Если молярное количество одного мономера меньше или больше молярного количества другого мономера,

превышение молярного количества одного из мономеров приведет к уменьшению молекулярной массы образованного олигомера. В результате были синтезированы ГСП в различных соотношениях АДК и дигликолей [19].

Результаты исследования показывают, что молярном соотношении 1 моль АДК и 1,05 1.1; 1,2 моль ДЭГ; был синтезирован ГСП, последовательно видно, что количество гидроксильной группы синтезированного ГСП увеличилось на 1,2-2,2-2,7% соответственно (рис. 2. Кривая 1). При тех же соотношениях АДК и ДЭГ количество кислот уменьшилось на 13,5-8,5-4 соответственно (рис. 2, кривая 2). Видно, что молекулярные массы ГСП, синтезированных при молярном соотношении 1 моль АДК и ДЭГ; 1,05 1.1; 1,2; 1,3; 1,4, уменьшились соответственно до 1600–1100–800–700–600 (рис. 2, кривая 3). На основе описанных выше экспериментов нам удалось синтезировать ГСП с молекулярными массами от 600 до 1600 с различной вязкостью.
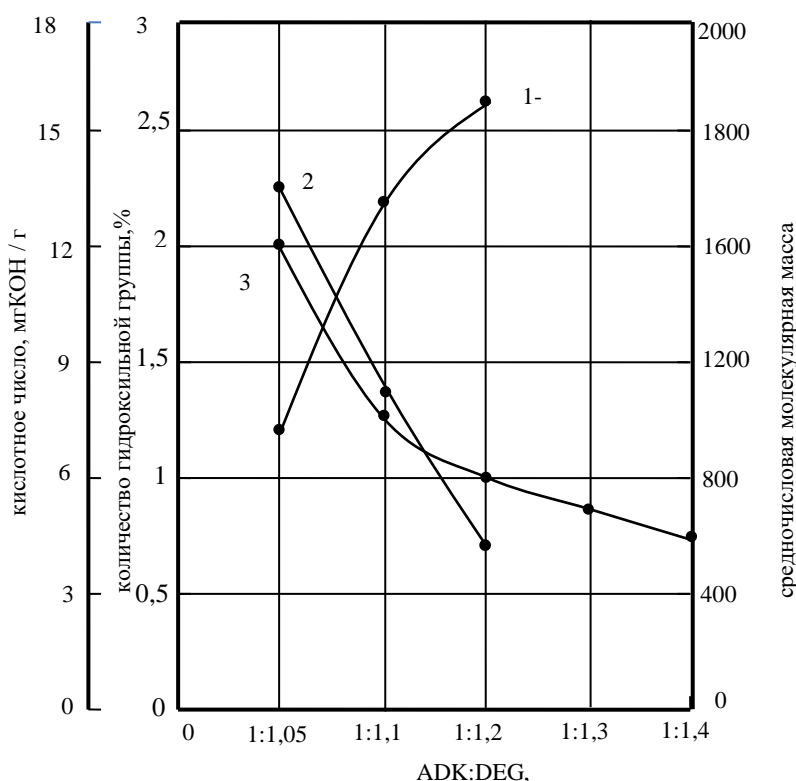
Рисунок 2. График зависимости физико-химических свойств олигомеров от соотношений АДК и ДЭГ, полученных для синтеза

1- количество гидроксильной группы,%; 2-средночисловая молекулярная масса; 3-кислотное число, мгКОН / г

Выводы

Изучены условия синтеза вторичного полиэтилентерефталата с диэтиленгликолем, то есть условия синтеза ароматических гидроксилсодержащих полиэфирполиолов с определенной молекулярной массой и функциональностью.

Изучены условия поликонденсации при различных соотношениях адипиновой кислоты и алифатического дигликоля (ДЭГ, ЭГ, БД) и определены технологические параметры синтеза алифатических гидроксилсодержащих полиэфирполиолов с определенной молекулярной массой и функциональностью.

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TRADITIONS AS AN INTEGRAL PART OF ETHNOCULTURE

Abstract: This article analyzes the fact that traditions are an integral part of ethnoculture and the history of its development on the basis of historical sources.

Key words: ethnoculture, customs, ethnolinguistics, ethnography, colonialism, aggression, missionary, indigenous people, lifestyle.

Language: English

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Introduction

Today, science has become an important component of culture that has a profound impact on all aspects of the spiritual life of society. Therefore, in-depth study of the relationship between science and society is of great importance.

Various currents have emerged in assessing the role of science in the life of society, in its historical development. The basis of any scientific research in the correct and reliable interpretation of the object under study is to decide on which scientific thinking to rely and determine the methodological principles of this scientific thinking.

The main part

To date, two directions have emerged in the evaluation of the philosophical foundations of any science. While the first direction denies the role of science in the development of society, the second direction praises its role. Proponents of the first line themselves form two opposing camps.

One of them is called "scientism" and requires scientific research to be conducted without any philosophical laws. The latter, in contrast, emphasizes the need to rely on the spontaneous mental experience of the individual in the process of scientific research. That is why this trend is called "anthropology". Both streams merge according to the negation feature of the science methodology.

In fact, any science can have real knowledge about an object only if it can reflect the object as it is, that is, objectively. For this, it is necessary to rely on a certain methodology.

In our view, the object under study can be adequately interpreted only on the basis of a dialectical philosophy that recognizes the objectivity of being, that it is constantly growing - in change. In dialectical philosophy, science is seen as a kind of "spiritual product", a specific reflection of a being that is constantly evolving and changing. Contrary to metaphysical cognition, dialectical cognition of the universe recognizes its unity, dynamism, divisibility of wholeness, and is based on the connection between divisions.

These basic principles of dialectical cognition play a constructive role in the development of a number of modern sciences. Linguistics is no exception. Every nation has its own ethnoculture. Ethnoculture as a whole is made up of various components that are inextricably linked. One of these components is tradition. "From ancient times traditions are the best and most exemplary lessons of human life, his social activities, labor. It would not be wrong to call them enlightening lessons for future generations."

The set of traditions of a nation is an integral part of the ethnoculture of that nation. Any ethnoculture finds its expression in the language of this people. Hence, it is also a means of expressing the culture,

lifestyle, customs of the speakers of that language. This feature is reflected in its cumulative function.

If we consider all the peoples and nations living on earth as a single system, the individual ethnoses in this macrosystem are distinguished by certain characteristics, in particular, language, origin, material and spiritual culture, lifestyle and psychology. This means that all the nations of the world have unique characteristics, as well as general ones. One of these distinctive features is their traditions.

While customs play the role of a differential sign in the whole ethnographic system of a particular ethnos, the study of their linguistic expression is of great importance not only for linguistics but also for ethnography.

Each language has specific lexemes that represent ethnographic concepts, which form a group of ethnographic lexicons, and this microsystem is considered to be part of that language macrosystem.

Later, a separate branch of linguistics, which studied the linguistic means of expressing folk ethnoculture, emerged and became known as ethnolinguistics. Today, ethnolinguistics is a branch of science that studies the ethnoculture of a particular nation with the help of linguistic methods.

Ethnolinguistics as a separate branch of linguistics was separated from ethnography in the early twentieth century and developed in America in the 1920s. This direction initially focused on ethnographic materials specific to Hindu tribes in North and Central America. Ethnolinguistics as a pure linguistic direction was formed in the first quarter of the twentieth century. F. Boas is recognized as its founder. One of the main tasks of ethnolinguistics, founded by F. Boas, is to determine the issue of genetic kinship of Hindu tribes.

Later, to the scale of its problems were included the interaction of languages, bilingualism, and the influence of ethnoculture on language development. In the process of studying the influence of ethnoculture, special attention was paid to the customs of ethne and their naming, since the existence of common name and common language, customs and traditions of each ethnos have been recognized as important features that distinguish them from other ethne. Hence, traditions are recognized as an integral part of ethnoculture of ethnos and key factor which determine its existence, and the study of its names is an important area of ethnolinguistics.

As mentioned above, the task of any science is to adequately define the object under study. The traditions of our people exist objectively. These traditions have their expression in our language. So, traditions and its names are expressed in our language through the mind. In other words, the notions of tradition are reflected in our minds as concepts, and these concepts are manifested through the elements of language.

Apparently, the semantic triangle specific to lexemes also relevant to custom names. However, it is peculiar that the denotation of such names are customs.

The study of Uzbek ethnoculture also has a long history. The ethnolinguistic materials of the peoples of Central Asia began to arouse interest in the implementation of Russia's policy of aggression in the XVIII-XIX centuries. Because, it is easier to penetrate to the nation through studying their language and traditions.

"Of course, ethnographic work is in the interests of public policy. Most of them were prepared in the interests of the tsarist government. Because the government wanted to take over the country and settle down here."

Russian scholars and ethnographers went on expeditions to collect materials on the way of life, customs and language of the Turkic peoples and reported on the results of the expedition.

These expeditions were controlled by the state administration. For example, according to ethnographic sources, in 1858 the famous orientalist V.V.Radlov came to Turkestan and published valuable ethnographic information about the population of the Zarafshan valley, on the basis of which he wrote ethnographic pamphlets about local peoples.

According to V.V.Radlov's report on the results of the expedition in 1860-1870, in the 60's and 70's he traveled several times from Barnaul, where he lived, to the places where Turkic ethnic groups lived, in order to study Turkic languages.

It is clear from his report that the study of the language and ethnoculture of the Turkic peoples was aimed at aggression and missionary work. In particular, a resident of the Zarafshan oasis describes the Uzbeks as thinking about the spiritual world and the struggle of two elements in this world: the popular Turks; an element of Persian-Arabic Islam. Of course, the latter prevails and is holding back the progress of the people. Now that the popular spirit of the people is stronger in the deserts, it is not difficult (by the Russians) to influence them more quickly.

The second half of the 19th century and the beginning of the 20th century were also marked by attempts by local Turkologists to write generalized ethnographic essays on individual peoples. For example, the work of N.P. Ostroumov "Sartlar" was published three times. This was unusual for the period, as evidenced about the growing interest of the audience with the way of life of the peoples of Central Asia. Of course, in the content of Ostroumov's general essays, extreme curiosity and self-affirmation prevail, because as a student of the Kazan Religious Academy he remained faithful to the principles of the Kazan Academy and treated other non-Russian peoples in the missionary spirit.

As a result of such efforts, a number of works compiling ethnolinguistic materials of the Turkic peoples were created. Among them are the work. of A.N. Samoilovich and P.A. Falev, a collection of Crimean Tatar proverbs and sayings, the work of V.P. Nalivkin and M.V. Nalivkina, reflecting the lifestyle of women in the Fergana Valley are of great significance.

Young officer V.P. Nalivkin, who arrived in Turkestan, took part in a trip to Khiva and Kokand. After learning of all the negative aspects of the colonial wars, he resigned in 1878 and moved with his family to Nanay district of Fergana province to learn the language and way of life of the local population.

Conclusion

The works mentioned above are valuable in that they are the first examples of Turkish ethnolinguistics, regardless of the purpose for which they were written. The fact that the latter work was awarded the Gold Medal of the Russian Geographical Society shows how important it was for the scientific life of that period.

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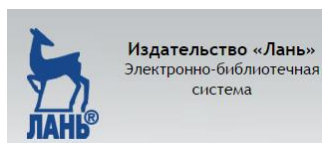
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