CONTENTS

MODERN PROBLEMS OF PEDOGOGY AND PSHYCHOLOGY

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THE USE OF INFORMATION TECHNOLOGY AND EDUCATIONAL ENVIRONMENT IN THE DEVELOPMENT OF STUDENT'S COMPETENCY IN THE SUBJECT «COMPUTER SUPPLY»

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Annotatsiya. Ushbu maqolada talabalarning "Komp'yuter ta'minoti" fanidan kompetentligini rivojlantirishda axborot-ta'lim muhitlaridan foydalanish muammolari, ularni bartaraf etish usullariga oid taklif va tavsiyalar berib o'tilgan.

Kalit so'zlar: Komp'yuter ta'minoti, axborot-ta'lim muhiti, kompetensiya, kompetentlik, axborot-kommunikasiya, texnologiya, masofaviy ta'lim.

Аннотация. В статье представлены предложения и рекомендации по проблемам использования информационно-образовательной среды в развитии компетенций студентов по предмету «Компьютерное обеспечение» и пути их преодоления.

Ключевые слова: компьютерная поддержка, информационно-образовательная среда, компетенция, компетенция, информационно-коммуникационные технологии, дистанционное обучение.

Annotation. This article discusses suggestions and recommendations on the problems of using information and educational environments in the development of students' competencies and ways to overcome them in the subject of "Computer Supply".

Keywords: Computer supply, information technology and educational environment, competence, information and communication, technology, distance learning.

Introduction. The scope of practical works carried out in higher education institutions for the development of student's competencies in the field of computer science and the attention paid to it is not at the required level despite the rapid penetration of computer technology in all spheres of human activity, the introduction of information technology in the educational process [1, 2, 3]. Therefore, the widespread use of information technology and educational environments has become a serious need for the further development of professional disciplines in the training of computer science specialists in higher education institutions, in particular in the field of "Computer Supply".

Literature review. Today, due to the widespread use of information and communication technologies (ICT) in human activities, they are becoming increasingly important for solving personal and professional problems [4,5]. Therefore, the preparation of highly qualified personals in the field of information and communication technologies is becoming one of the priorities of the government. Scientists such as I.M.Bashtanar, L.V.Bocharova, V.V.Buchelnikov, L.R. Votyakova, N.A.Goncharova,

D.V.Daxin, A.A.Mukasheva, A.V.Ovcharov, E.A. Kozlova, L.N.Palamarchuk, T.V.Pankova, A.A.Kuznetsov, V.Yu.Nikishina, O.N.Griban carried out researches in the development of student's competence in the field of information and communication technologies.

According to A.A.Kuznisova, information and communication technology competence is determined as an ability of a person to effectively apply modern technical knowledge and skills into real-life [6]. Due to V.Yu. Nikishina, the professional information competence of a specialist is "Integral characteristics of a person" that allow him to solve various professional problems relying on knowledge, skills, and abilities to use modern technologies and computer networks [7].

According to L.V Otverchenko, the formation of professional information competence is defined as "students' theoretical understanding and managed achievements in the development of relevant information (computer) processes and technologies"[8]. According to O.N Gribani, ICT competence is the ability of an individual to use ICT in solving various problems to live and work successfully in the society of information technologies [9].

Due to the above mentioned, it can be pointed out that there is a lot of scientific and methodological literature for researchers on the formation of students' ICT competencies. Our research is devoted to the development of competencies of future teachers of computer science at pedagogical higher education institutions through the analysis of these sources in the field of "Computer Supply".

In this regard, according to D.V. Luchaninova, one of the most effective ways to form the competence of future computer science teachers is the usage of interactive and distance learning methods of teaching and it was proved based on analysis. According to her, taking into account a wide use of information environment in higher establishments it can be determined that exploitation of distance learning is more productive in shaping students' creative information competence [10]. Taking wide use of information into consideration one can conclude that distance learning in higher education is the best optimal method of teaching. Today, the adopted normative-legal documents on education are directed to the reduction of classroom classes and serve to increase the number of independent study hours. The use of information and educational environments via the internet is considered in Independent Study. According to this approach, the most logical transition is the transition from a traditional form of education to a comprehensive form. The concept of comprehensive learning involves the possibilities of learning by necessary technical means anywhere The conclusion is that a significant part of the material is transferred to the distance form, leaving time in the classroom for various interactive forms, which, in addition to the increase of their effectiveness, it will be possible to organize online consultations, group discussions with professors-teachers and students [10].

In this regard, the research of scientists of our country and the CIS such as A.Abduqodirov, M.A.Yuldashev, A.A.Ibragimov, A.S.Djuraev, E.V.Yakushina, G.A.Gareeva, A.V.Karmanovskiy, A.A.Skvortsov, G.M. Kuleshova, O.V.Mirzabekova, V.V.Polovinkina showed that it is advisable to use distance learning,information-educational environments in independent learning activities for the development of information competence of pupils and students.

An information-learning environment is an online learning system that combines various components. However, today such an environment is more typical for higher education institutions. This is connected with the State Standard of Education of the Republic, according to which the information-educational environment of the educational institution includes: information education resources that incorporate digital learning resources; communication networks, a system of modern pedagogical technologies that provide teaching using modern e-learning tools [11].

Research methodology. Organizational forms of teaching: lectures, seminars, consultations, practical, laboratory and independent work, trainings, tests can be organized using information-educational environments. It is connected with the widespread use of electronic education for full-time learners. There will be significant changes in the organization of lectures, practical and laboratory classes through the use of information-educational environments. There are four main components in the formation of a learning process using interactive means of information-educational environments: theoretical materials as an object of study (manual, book, etc.); as a subject of professor-teacher education; as a subject of student education; information as an object of learning from interactive means of educational environment

This component serves as a mediator in "Student-professor-teacher" and "student-theoretical material" relations (look at Picture №5).
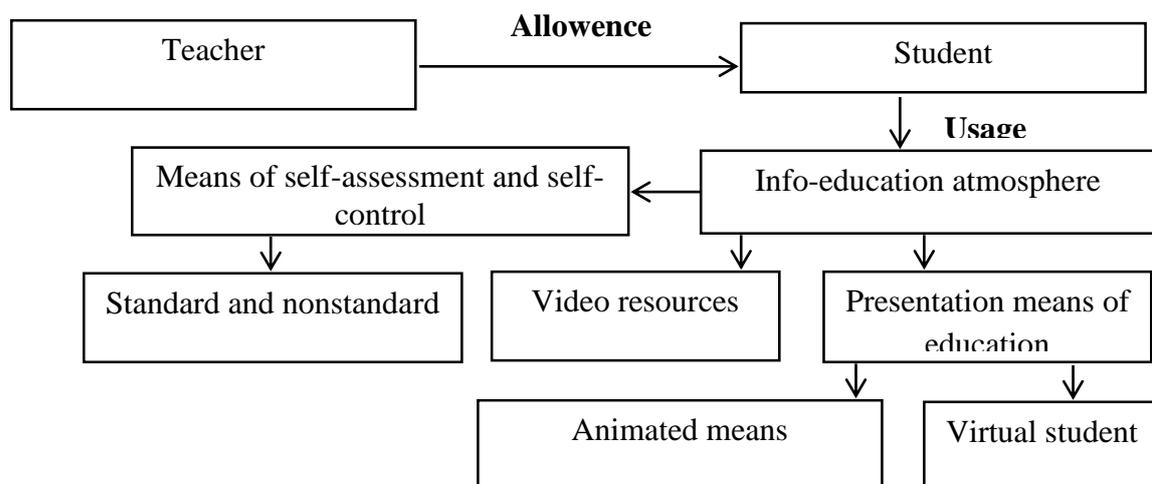
Picture 1. Components of the use of informational learning environments.

The above structure provides the following opportunities to increase the effectiveness of teaching in the subject "Computer Supply":

Flexibility. Students do not regularly participate in lectures, practical and laboratory classes when they learn how to use the information-learning environment, but they work in a place that is convenient for them, at a comfortable pace, which allows them to learn with the help of task simultaneously.

Modality. Learning resources in the information-educational environment are based on the modular principle. Each individual course creates a holistic view of a particular field of science. This allows the curriculum to be studied individually or in groups independently.

Economic efficiency. Due to the inclusiveness of education, it is cheaper than traditional education. There is no limit in the number of students.
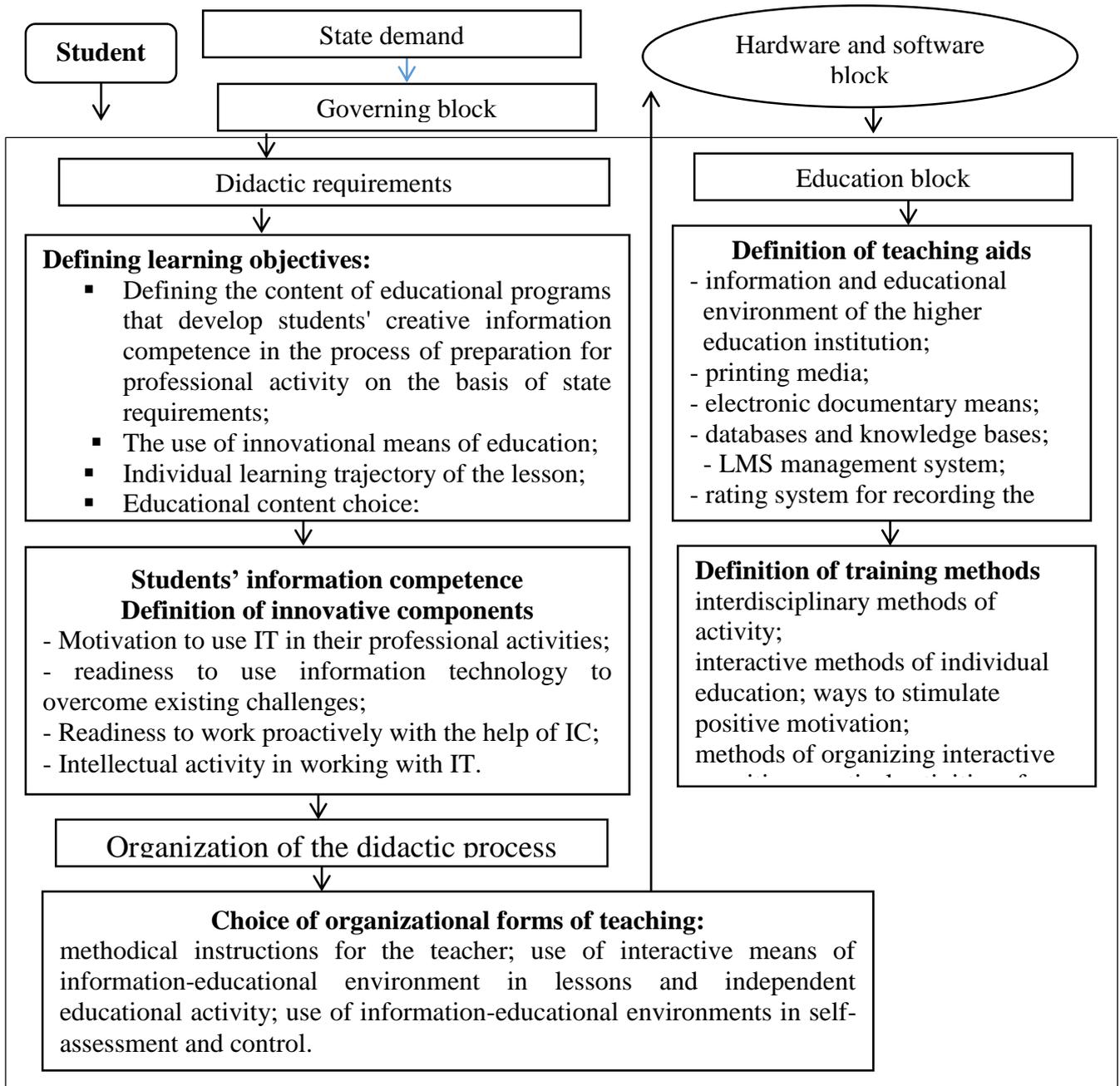
2.- Formation of students' competence in the subject "Computer Supply".

Basing on this structure, the development of students' competence in the subject "Computer Supply" requires the creation of an information and educational environment on the Internet. This information learning environment should include the followings: subject related State Standards and the corresponding sample program created according to it; topics of the exemplary course and final qualification work on the subject; assignments aimed at developing students' competencies; interim and final control questions; guidelines for the organization of independent learning; science textbooks, textbooks, manuals and electronic versions of similar training information; guidelines on the methodology for the use of modern teaching technologies and information technology in the classroom; availability of audio, video, virtual stands,

presentation teaching aids related to science; a set of online tests to assess knowledge, skills, and competencies in science.

Analysis and results. According to the above-mentioned system, an information and educational environment comp-edu.uz was created to develop the student's competence in the subject "Computer Supply" and experimental work was carried out to determine its level of effectiveness. Students of the departments "Methods of teaching computer science" and "Mathematics and Informatics" of Navoi State Pedagogical Institute were involved in the experiment. The students of the experiment were divided into experimental and control groups. The control group was trained in the traditional way, and the experimental group was organized using the information and educational environment (comp-edu.uz) created as part of the research. The results of the students involved in the experiment were analyzed mathematically and statistically on the basis of the Student-Fisher criterion. The formula of appropriate mean value of the selections when using this criterion

$\overline{X} = \dfrac{1}{n} \sum\limits_{i=1}^{4} n_i X_i$, and determining the capturing knowledge indicators $A\ \% = \dfrac{\overline{X}}{3} \cdot$ $100\% - \dfrac{\overline{Y}}{3} \cdot 100\%$ were used in this experiment. According to the calculated results, the performance of the experimental group increased by 8% compared to the control group.

A new role of the professor-teachers. Provides opportunities for the teacher to coordinate the educational process, update and improve the course, manage educational projects. It also manages online study groups, ensuring that students learn their knowledge of professional subjects independently.

Education quality control. Remote examinations, interviews, practical work, course and project work, intelligent computer test systems are used in the information-educational environment as a form of quality control. It should be noted that solving the problem of audience control, its compliance with educational standards is important for the success of the effectiveness of the entire system in the information-educational environment.

The use of distance learning is effective in organizing the interactive cognitive and practical activities of students. In this regard, the connection between teacher and student is carried out online [10]. As a result, students develop the ability to make decisions independently and study subject-related topics through self-study.
Therefore, we came to the conclusion that the structure shown below in Picture №1 should be used in the development of students' competence in the subject "Computer Support" (Developed by DV Luchaninov) [10].

Conclusion and recommendation. The use of the information educational environment in higher educational institutions also leads to changes in the organizational forms and methods of teaching in the educational process, as well as the improvement of new methods in it. It also considers the use of modern information technologies aimed at achieving pedagogical and psychological goals of education and also provision of practice and methodology of their creation in the field of education

Based on the above analytical data, we can conclude that the use of information learning environments is recommended to develop students' competence in the subject

"Computer Supply". At the same time, students have the opportunity to study independently by searching for educational information on the subject. As a result, students' creative thinking increases and their competence will be developed.

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PROBLEM SITUATIONS IN TEACHING FINE ARTS CLASSES

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Аннотация. В статье представлена информация о методиках обучения изобразительному искусству, проблемных ситуациях, которые могут возникнуть при обучении изобразительному искусству. Также анализируются способы решения этих проблем и эффективные способы обучения изящным искусствам. Также на уроке есть информация о репродуктивном мышлении.

Ключевые слова: методика обучения изобразительному искусству, уроки изобразительного искусства, проблемные ситуации, репродуктивное мышление, мыслительная деятельность, научные выводы.

Annotatsiya. maqolada tasviriy san'at o'qitish metodlari, tasviriy san'at mashg'ulotlari o'qitishda yuzaga kelishi mumkin bo'lgan muammoli vaziyatlar haqida ma'lumotlar keltirilgan. Shu bilan birga bu muammolarni hal qilish usullari, tasviriy san'at o'qitishning samarali yo'llari tahlil qilingan. Bundan tashqari dars davomida reproduktiv fikrlash haqida ham ma'lumotlar keltirilgan.

Kalit so'zlar: tasviriy san'at o'qitish metodlari, tasviriy san'at mashg'ulotlari, muammoli vaziyatlar, reproduktiv fikrlash, fikrlash faoliyati, ilmiy xulosalar.

Abstract. The article provides information on the methods of teaching fine arts, the problematic situations that may arise in the teaching of fine arts. It also analyzes ways to solve these problems and effective ways of teaching fine arts. There is also information about reproductive thinking during the lesson.

Key words: methods of teaching fine arts, fine arts classes, problem situations, reproductive thinking, thinking activities, scientific conclusions.

Introduction. Today, the task of the teacher is to organize the learning process in a way that shapes not only reproductive thinking, but also creative thinking in students. This is a challenging way to teach. Problem-based learning is a method of teaching a learning material in a way that creates learning tasks and problems in the student's mind based on scientific research. Problem situations arise in the student's thinking activity, and they encourage the child to explore objectively and draw logically correct scientific conclusions. Problem is a subjective form of expressing the need to develop scientific knowledge. It is an objective contradiction between knowing and not knowing in a problematic situation, that is, in the process of social development. Problem situation is a specific mental state of a student. This is due to the perception of contradictions in the process of performing certain tasks (problem solving, finding answers to questions). Understanding this contradiction makes students need to seek new knowledge about the way or conditions of doing things. The problem is that, unlike the problem, it involves the student. The most important ways

and means of creating problem situations have been developed based on the classification of problem situations in the literature on didactics and psychology.

Literature review. M.Makhmutov describes the types of problem situations, as well as the following main ways of their creation [1].

1. Exposure of students to events, facts that require theoretical understanding, as well as external inconsistencies between events, motivates them to try to explain these inconsistencies, and this desire leads to the active acquisition of knowledge.

2. Take advantage of the educational and life situations that arise when students perform practical tasks at home or in the workplace. In this case, the problem situations create the problem themselves as the student tries to achieve the practical goal independently [2].

3. Assign challenging learning tasks to explain the event or find ways to apply it in practice.

4. Encourage the student to analyze facts and events with real-life ideas.

5. State hypotheses, conclusions and check them in experiments [3].

6. Encourage students to compare and contrast facts, actions, and events.

7. Encourage students to summarize and compare new facts. This usually creates a problematic situation, because the comparison reveals some special, inexplicable signs and features of the new facts [4].

8. Organization of interdisciplinary relations.

Analysis and results. Often, the learning material provides a problem-solving situation. In this case, it is necessary to use the facts and materials related to the material studied in other disciplines. Therefore, it is appropriate to view the educational process as a conscious, goal-oriented activity in which the teacher and the student work together. Its components are: goal orientation, needs and aspirations, content, activities, process, follow-up, and evaluation of results. In a problem-solving lesson, the collection, comparison and analysis of facts about the newly studied rules, the study and consolidation of knowledge are carried out in parallel [5].

Every teacher working in the education system, in order to apply the problem-based teaching method in the classroom, must first know the following sequence:

- problem-solving;
- study the conditions that characterize the problem;
- solve the problem;
- substantiate the correctness of the solution [6];
- understand the new knowledge that emerges in the process of finding and solving a problem;
- systematize, motivate and generalize the problem;
- to study the solution of the problem, to look for more concise and convenient ways.

Everything that is done on educational technology has its own practical basis. The preparation of an educational project predetermines the future activities of the teacher and the student. In the implementation of an educational project, the teacher should, first of all, consider the creation of problematic situations in the student's thinking activity that encourage logical and correct, scientific conclusions and mastery. In fact, any education is a problem for the student [7]. Because in the process of

learning, the student gets acquainted with something that is not yet known to him, and acquires a certain understanding. Therefore, the teacher should cultivate in students such personal qualities as curiosity, independence, interest in reading and aspiration to be creative by creating problematic situations in their thinking activities. Creating a problem situation, creating ways to use it, the disciplines studied at each stage of the education system, their characteristics, taking into account the age characteristics of students [8].

Students of the same age have different abilities to understand, think, and do things according to their physical and mental characteristics. Therefore, it is important to prepare the student mentally before creating a problem situation. Psychologists argue that thinking always begins with a problem or question, surprise or misunderstanding, and conflict (S.O. Rubinstein), and that in the course of the lesson one should focus on analyzing, evaluating, and then making decisions in solving problem-solving tasks.

The main leading functions in problem-solving methods are:

- The teacher: is based on determining the relevance of knowledge.

- Developer: develops analytical thinking, the ability to see events and patterns through individual facts [9].

- Educator: develops communication skills. Hence, the problem situation is based on the improvement of students 'independent work, the formation of scientific concepts, practical skills and competencies in them, and the in-depth and logical analysis of other materials.

Discussion. If you want to solve a problem in lesson, you first need to know how to create problem situations.

Here are some things to keep in mind:

- Ask specific questions: encourage students to generalize, prove, and think logically;

- Ask students questions that encourage them to think and offer them to solve them independently;

- Encourage students to compare, generalize, draw conclusions, and compare facts given through theoretical and practical assignments;

- Explain the need to look at a question from different perspectives and encourage them to justify the answers;

- Encourage students to look at events through a variety of situations and identify conflicts they may encounter in practice [10].

Thus, the problem cannot be posed directly without any preparation. It is described as a major issue throughout the lesson. The complexity of the problems, of course, should be appropriate to the level of the students. Presentations should not be large. Only when students are able to solve materials, especially problems, will their ability to solve them increase. Problem-based questions should be structured in such a way that the student fills in the gaps in the answer to the question, identifies the unknown, finds similarities and differences, and expresses his / her opinion. Creating a problem situation is organized using research, heuristic conversations, demonstrations, problem statement, and reproductive techniques.

The research method focuses on students' research, solving a new problem for them, and it is carried out in the following stages:

1. Observation and study of facts and events;

2. Clarification of incomprehensible phenomena;

3. Propose a hypothesis;

4. Planning and implementation;

5. Find a solution and test it;

6. This method is used in oral and press speeches, visual aids, practical work, written and graphic work, laboratory classes.

The heuristic method is a way of organizing a conversation from interrelated questions in which the student should not only use his knowledge, but also do research. The essence of problem statement is that the student poses the problem, solves it on his or her own, and demonstrates to the students the importance of the solution through clear contradictions. This means that challenging assignments enhance students' independent learning.

Conclusion. Differentiated education, which is one of the most effective forms of modern pedagogical technologies, plays an important role in increasing the effectiveness of art lessons in secondary schools. Differentiated education contributes to the dynamic development of knowledge and skills of all students by studying students individually and in groups, organizing their independent work correctly and purposefully. In doing so, the teacher can increase the effectiveness of the lesson by organizing the lessons, taking into account the interests, abilities and abilities of each student. It is well known that the knowledge imparted and the methodology based on it do not have the same effect on all students because all students have different abilities, scientific interests, psychological and aesthetic characteristics. As a result, they do not assimilate the learning materials in the same way.

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METHODOLOGY OF IMPROVING THE TEACHING OF HISTORY OF FINE ARTS IN HIGHER EDUCATION

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Annotatsiya. Maqolada oliy ta'lim tizimida tasviriy san'at tarixi haqida, bu fanni o'qitish usullari, hamda takomillashtirish metodikalari haqida ma'lumotlar keltirilgan. Shu bilan birga tasviriy san'at darslarida zamonaviy texnologiyalardan foydalanish, ularning foydali tomonlari haqida fikrlar keltirilgan. Bundan tashqari yangi pedagogik texnologiya asosida o'qitish, ularning didaktik va metodik sohalarini takomillashtirish haqida ham aytilgan.

Kalit so'zlar: tasviriy san'at tarixi, o'qitish usullari, takomillashtirish metodikalari, zamonaviy texnologiyalar, yangi pedagogik texnologiya, didaktik va metodik sohalar, o'qitish didaktikasi.

Аннотация. В статье представлена информация об истории изобразительного искусства в высшей школе, методиках преподавания этого предмета, а также способах совершенствования. В то же время есть идеи об использовании современных технологий на занятиях по искусству и их преимуществах. Речь также идет об обучении на основе новых педагогических технологий, совершенствовании их дидактических и методических аспектов.

Ключевые слова: история изобразительного искусства, методика обучения, методы совершенствования, современные технологии, новые педагогические технологии, дидактические и методические направления, дидактика обучения.

Abstract. The article provides information about the history of fine arts in higher education, methods of teaching this subject, as well as methods of improvement. At the same time, there are ideas about the use of modern technologies in art classes and their benefits. There is also talk about teaching on the basis of new pedagogical technologies, improving their didactic and methodological aspects.

Key words: history of fine arts, teaching methods, methods of improvement, modern technologies, new pedagogical technologies, didactic and methodological areas, teaching didactics.

Introduction. The changes and rapid development of the country in the field of education require the teaching of each school subject on the basis of new pedagogical technologies, the improvement of their didactic and methodological areas. Accordingly, it is time to teach school subjects, including fine arts, on the basis of new pedagogical technologies. This process, in its didactic and methodological aspects, necessarily requires the creation of conditions that will make a positive difference. Because the organization of any teaching and ensuring that the knowledge and skills given are in a predetermined standard, mainly teaching aids, didactic and visual aids, teacher speech and its teaching it depends on the perfect, correct, reasonable use of didactics and methodologies'. After all, a lesson will never be effective if it does not meet the didactics of teaching science and its principles.

Literature review. The pedagogical technology of teaching fine arts is a pedagogical activity that provides students with knowledge of fine arts, based on the principles of personal development, which guarantees a pre-planned result, its didactic process and how is the methodological direction interpreted? Pedagogical technology as a complex process consists of a number of stages of teaching, and each of these stages, in turn, consists of specific actions [1]. If we use a lesson in fine arts, that is, 45 minutes, using all the opportunities, conditions, tools, didactics, methodical methods (regardless of the level), all the activities carried out for a guaranteed result will be visual art. There will be pedagogical technology of horse lessons.

Analysis. The main task in the technology of teaching fine arts at school is the opportunity, conditions, tools, methods and techniques for the guaranteed result, and the organization of the link is one of the main tasks of the didactics of teaching fine arts and its principles. Because the didactics of teaching fine arts in the school ensures that for each lesson, first of all, the knowledge and skills provided are based on science [2]. The principle of science is to ensure that every piece of information given to students about the nature, object, subject, event, or work of art being drawn is based on scientific and scientific information. Then the knowledge and skills are provided in a systematic, sequential manner, which is based on the principle of easy or difficult pedagogy or didactics. This process is based on drawing simple objects that are easier to describe first and gradually complicating them in later lessons [3]. These will be reflected in the sequence of topics covered in the Fine Arts curriculum. In addition, the teaching of fine arts to students is carried out in accordance with the educational

principles of didactics. Because the subject of school art teaches students to respect artistic and moral, aesthetic work, their people, their homeland, and the work of their ancestors. In addition, in accordance with the requirements of technology and didactics of teaching fine arts, each lesson - the knowledge and skills given to students have the opportunity to apply in practice in the same lesson, the new knowledge and skills provided in the main part of the lesson [4]. The drawing operation is performed on the basis of the data. Given this opportunity and the conditions of this science, there will be positive changes in its teaching technology. Another important didactic principle in the teaching of fine arts is to create the conditions and opportunities for teaching in accordance with the visual abilities, knowledge and skills of your students [5].

This principle allows all students to be involved in drawing and painting. Special attention is paid to the creative, active, independent and enterprising skills taught to students in the visual arts school. Demonstrative teaching of didactics is the most basic didactic principle in educational technology, ensuring that the knowledge and skills in fine arts are given to students in an easy, concise, understandable, scientific manner. All teaching materials in the state program of fine arts taught in schools require visual teaching. It is often said that "the only subject that cannot be taught in school without an exhibition is the fine arts." Therefore, in the technology of teaching fine arts, demonstration is the most basic and most effective didactic principle that can guarantee the achievement of a previously defined goal. The Didactic Process in School Fine Arts Teaching Technology V.P. As Bespalko points out, the introduction of a new course material, that is, the preparation of a student for a new course material begins with the process of motivation. This not only increases students' interest in the new lesson material, but also allows them to be active, independent, enterprising and creative throughout the lesson [6]. Didactics and methods of teaching fine arts play a key role in the technology of teaching fine arts at school. Because methodology and didactics are the most basic and final pedagogical process of imparting knowledge and skills to students from school fine arts. Methodology is the easiest, most effective pedagogical tool for imparting knowledge and skills to students in the visual arts, a process that can guarantee pre-determined learning outcomes.

It should be noted that one of the modern teaching methods used in the technology of teaching fine arts in schools is [7]:
• The method of oral presentation;
• Demonstration teaching method;
• It is a method of practical work, each of which is divided into a number of methods.

Although the most widely used method of teaching fine arts in school is the "Oral Narration" method, the "Demonstration Teaching" and "Practical" methods are also used in every lesson. Because the study of fine arts, by its very nature, is a subject that cannot be taught without an exhibition. Also, according to the pedagogical technology of the subject, more than half of the 45-minute lesson is provided with practical work. In art classes at school [8]:
• From the methods of "oral presentation" such as conversation, story, question and answer, lecture;

• Demonstration teaching methods, working with illustrations and reproductions, board drawing and field trips;

• The method of "practical work" is used in painting, sculpture, art and composition, work on compositions, analysis of works of art, essays on works of art, essays.

Interdisciplinary links in the teaching of fine arts.

In the theory of pedagogy and in the didactics of education, Y.A. Comenius said, "In school it is necessary to teach the object itself and how it arises, that is, how it is connected." Comenius's phrase is often used. This is because in order for students to have scientific, truthful and accurate information about things and events, didactics should be given that general concepts should be given along with the roof moments that connect all the causes of what is being studied and the event, emphasized by all eminent educators. Indeed, pedagogical experience has shown that the information provided to students in each subject must be scientifically sounded, that is, well-founded, with all the causal aspects [9]. Only then will the knowledge imparted be free from all appearances and insecurities and be based on the law of didactics.

It is one of the basic rules of Y.A. Comenius didactics. These principles are the most important, well-founded and effective tool in the teaching of fine arts. Because there is no science that is not related to and does not use the visual arts. Any teacher who knows how to draw or understand works of art will have the opportunity to increase the effectiveness of their lessons. This conclusion has been observed in the work of many teachers. The teaching of fine arts is also directly and indirectly related to all school subjects. This connection is present in all types of fine arts: perception of nature, construction, creation (design), drawing on the basis of nature (pencil, painting), sculpture on nature, art and applied arts , working on thematic compositions, studying the works of artists and works of art, both didactically and methodologically, are scientifically linked with other educational disciplines. Special scientific research has been conducted in the country on the connection of school fine arts with other educational disciplines, and relevant pedagogical, didactic and methodological conclusions and recommendations have been developed [10]. One of the most important ways to increase the effectiveness of art classes is to link them to other subjects in the teaching of fine arts at school. This connection is expressed in two ways: theoretical (didactic) and practical (methodical).

Theoretical connection is used in the teaching of fine arts in a new educational class, as well as in other classes and extracurricular activities. In the classroom, the teacher uses theoretical knowledge and didactic materials from other disciplines to provide analytical information about the objects and events being drawn and to explain the rules of drawing. Or the theoretical-didactic connection is expressed in the study of the works of artists and in the analysis of works of art in the process of the teacher's use of theoretical knowledge of other academic disciplines. This is done in accordance with the purpose and objectives of the topic. The subject of the lesson is determined by the content of the lesson. This connection follows the principle of easy, concise and thorough teaching of didactics, without any difficulty for both the teacher and the student. Interdisciplinary links in the teaching of fine arts form the scientific basis of the lesson. The fine arts teacher makes that connection [11].

In other words, the teacher agrees with the teacher of the subject, receives advice from him, and receives methodical instructions on the creative use of didactic and visual materials of the subject. The obtained scientific data will be used creatively in the presentation of new topics in the field of fine arts lessons from didactic and visual materials. For example, in Grade 6, K.P. Bryullov's analysis of "The Last Day of Pompeii" is related to "Natural Geography", "Volcanoes", "Ancient World History" and "Ancient Italian Art". This link provides a complete scientific basis for the analysis of the last day of Pom Pey's fine arts and serves as a scientific basis (see color illustrations). Both bird painting classes for grades 4-7, or fruit, vegetable, grass, and tree painting classes are linked to geography, botany, and zoology.

Drawing lessons on the basis of thematic compositions are directly connected with such disciplines as language and literature, history, geography, biology, astronomy, labor, physical education. Art studies are more closely linked to subjects such as biology, geography, history, literature, labor, and astronomy. This boogie is a major factor in providing scientific information for art classes. Works of art reflect more historical events, celebrities, and natural landscapes, individual countries of the world, their nature, peoples, living conditions, labor and creativity of these peoples. As a result, art studies are often linked to subjects that are studied and not taught in school. Only highly qualified, knowledgeable, thoughtful and creative teachers of fine arts will realize this in time. The theoretical (didactic) nature of the relationship between the visual arts and other disciplines suggests that, depending on the nature of the subject matter, it is the subject matter that determines which subject this subject is related to. This is because there is a need for scientific material to express the subject matter to be studied in the lesson, which makes it necessary for the teacher to relate to a particular subject. For example, in Grade 4 Drawing a Cube, a teacher must first provide accurate and scientific information about geometric shapes, then about size, and then about the geometric shape of a cube. It is obvious that in this lesson, the teacher needs to focus on mathematics, geometry, and drawing. From these disciplines, geometric shapes, the first of which is taken as a unit of volume, all sides of a cube are equal, have a 6-sided geometric shape, the scientific material on the content of the laws of perspective in its description are obtained. Based on this information, the content of this lesson can be easily explained.

The second aspect of the connection between the visual arts and other disciplines is the practical, that is, the methodological connection. This connection is mainly made when students use the knowledge they have acquired in other subjects in the visual arts classes with the help of a teacher. This can be seen in the questions and answers or conversations between the teacher and the students during the drawing period, in the analysis of the students 'creative work, or in the study of the works of art by mature artists.

Conclusion. In short, the main task of the teacher is to make the best use of the didactics and methodology of teaching the subject in order to achieve the predetermined goal of the technology of teaching fine arts in school. To do this, the teacher of fine arts, first of all, pedagogical technology, its role, place, content in the teaching of school fine arts, and then the didactics of teaching school fine arts, its It is

necessary to know the principles and teaching methods, to master them when, where and in what context.

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METHODOLOGY OF FORMATION OF CONCEPTS OF ARTIFICIAL INTELLIGENCE IN GENERAL SECONDARY SCHOOL STUDENTS

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Annotatsiya. Ushbu maqolada umumiy o`rta ta`lim maktabi o`quvchilarida sun`iy intellekt tushunchalarini shaklantirish metodikalari haqida so`z yuritilgan. Ilm-fan va axborot-kommunikatsiya texnologiyalari jadal taraqqiy etib borayotgan bugungi sharoitda dunyoning rivojlangan mamlakatlarida davlat va jamiyat boshqaruvi, iqtisodiyot, sanoat, ijtimoiy himoya, ta'lim, tibbiyot, bandlik, qishloq ho'jaligi, mudofaa, xavfsizlik, turizm va boshqa sohalarda zamonaviy axborot texnologiyalari va sun'iy intellekt imkoniyatlaridan keng foydalanish urfga kirmoqda.

Kalit so`zlar: sun`iy intellekt, metodika, texnologiya, axborot-kommunikatsiya, ekspert tizimlar, strategiya, algoritm, dastur, funksiya, kompyuter.

Аннотация. В статье рассматриваются методы формирования концепции искусственного интеллекта у школьников. В современном мире стремительно развиваются наука и информационные и коммуникационные технологии в развитых странах мира в сферах государственного управления, экономики, промышленности, социальной защиты, образования, медицины, занятости, сельского хозяйства, обороны, безопасности, туризма и других. Широкое использование современных информационных технологий и искусственного интеллекта становится традицией.

Ключевые слова: искусственный интеллект, методология, технология, информация и коммуникация, экспертные системы, стратегия, алгоритм, программа, функция, компьютер.

Annotation. This article discusses the methods of shaping the concept of artificial intelligence in secondary school students. In today's world of rapid development of science and information and communication technologies in the developed countries of the world in the fields of public administration, economy, industry, social protection, education, medicine, employment, agriculture, defense, security, tourism and others. extensive use of modern information technologies and artificial intelligence is becoming a tradition.

Key words: artificial intelligence, methodology, technology, information and communication, expert systems, strategy, algorithm, program, function, computer.

Introduction. In recent years, our country has adopted and is implementing a number of legal documents on the development of information technology, the introduction of digital technologies in industries and sectors, the expansion of the use of "smart programs".

In today's world of rapid development of science and information and communication technologies in the developed countries of the world in the fields of

public administration, economy, industry, social protection, education, medicine, employment, agriculture, defense, security, tourism and others. extensive use of modern information technologies and artificial intelligence is becoming a tradition. The resolution of President Sh.M.Mirziyoyev dated 17.02.2021 "On measures to create conditions for the accelerated introduction of artificial intelligence technologies" was adopted.[1]

At present, the draft decree of the President of the Republic of Uzbekistan "Strategy for the development of artificial intelligence in the Republic of Uzbekistan in 2021-2022" is being discussed on the portal for the discussion of draft regulations. Because artificial intelligence is so relevant in today's information age, humanity will find positive solutions to the global problems of the 21st century through the discovery of new possibilities in science through artificial intelligence. It will also increase access to quality services in medicine, education, energy, agriculture, urban planning and all other areas.[2]

Literature review. According to scientists, artificial intelligence is an intellectual artificial system that performs the logical and creative functions of man.

The concept of artificial intelligence and research in this field - a scientific approach to the development of "smart machines" first appeared in a scientific circle founded in 1956 on the initiative of John McCarthy, a professor at Stanford University (USA). The circle includes Marvin Minsky, an honorary professor at the College of Electronics and Computer Science at the Massachusetts Institute of Technology, and Allen Nbüell and Carnegie-Mellen, the creators of the "universal problem-solving" and "logic theorist" intellectual programs. Herbert Seyman, a well-known psychologist in the United States; Arthur Samuelb, Oliver Selfridge, Manshenon, and others. It was in this circle that the concept of "artificial intelligence" appeared.[5]

Research Methodology. The role of educational institutions in the development of artificial intelligence is growing from year to year. In general, the demand for artificial intelligence in the world and its application is growing. In 2021, the Russian Ministry of Education will begin testing "Artificial Intelligence" training modules in schools. By 2024, artificial intelligence classes will be taught in half of all schools under the regular curriculum.

Artificial intelligence classes will be introduced in Korean schools from the second semester of 2021. When topics are included in the school curriculum next year, high school 2nd and 3rd graders can take an artificial intelligence course or take artificial intelligence math classes.[10]

Chinese technology companies are partnering with schools to provide training programs in robotics and artificial intelligence to nurture more talent in the future.

Analysis and results. Problems solved on the computer, even if some of them are very complex, are not considered intellectual. This raises the question of whether the arithmetic operations performed at school are intellectual. There is some vague element to this issue in the expression. The solution to this problem is that the exact algorithm of c is unknown or non-existent. For a student who does not know the c method of solving a problem with some standard materials, the search for an answer is an intellectual process that requires a clear mental effort. A student who knows the style will solve this type of problem automatically.[6]

Thus, no matter how complex the problem, if the solution, the exact method (algorithm) is found and the appropriate program is developed, it can be considered as an intellectual or truly creative solution. For a computer, it's usually just a matter of doing mechanical work. But that's not the case at all.

There are times when the problem-solving algorithm c is not found at all and cannot be solved on a computer, even if it takes a long time. Such issues are not rare. These include finding images, creating chess programs, and automating translations. When a person is faced with such problems, he does not try to find a single solution or an effective method, but tries to use different methods and ways, sources of information in the process of solving the problem. He uses logic, laws, mathematical relationships, ways to break down a complex problem into smaller problems, or to think in a similar way to problems he has encountered before. In short, this is where the flexibility and versatility of human thinking comes into play.[9]

The work in the field of artificial intelligence is mainly to "teach" the computer to use more effectively the methods and techniques that are currently less common.

To date, a lot of work has been done in this area, that is, programs have been created to solve intellectual tasks. Experts are working hard to make the software more accurate and error-free.

The optimal solution to the problem on the computer is selected. Because if the optimal option is not selected and the problem is solved directly, it will take a lot of time. For example, you may have several options for going to school from home. The first time you go to school, you will definitely need help to find the closest way.

There is a general similarity in such problems - they can be solved by random search. The variants of solution c increase exponentially. This means that finding the most suitable solution out of a large number of solutions remains the main problem, and the solution to this problem requires choosing the optimal option.

The advent of computers and software has led to the emergence of new types of knowledge. An intelligent system can be considered as one of these types. The basic principle of an intelligent system is that a person's logical thinking is used to solve a problem.[4]

In the search for solutions to complex problems, man relies on the knowledge of certain laws. It uses mathematical theorems or rules derived from practice, divides complex problems into simple problems, and applies other methods.[7]

In the early 1980s, an independent trend in the development of artificial intelligence emerged, known as "expert systems." Intelligent systems that could replace an expert (or group of experts) and make recommendations on how to solve complex problems in a short period of time were needed, first by the military, then by medical personnel, and then by the introduction of such systems. began to be engaged in by specialists in all fields of human activity. The goal of the development is to create a program that is effective in performing complex functions and does not lag behind the solutions proposed by an expert or a group of experts in terms of quality and efficiency.

Artificial intelligence is the basis for simulating human cognitive processes by creating and applying algorithms in a fast computing environment. Simply put, artificial intelligence is a technology that makes computers think like human beings and find solutions.[3]

Three main components are required to achieve this goal:
• Computing systems (high capacity computers)
• Big data and their management
• Artificial intelligence algorithms (program code)

The closer the result is to the human mind, the more data and computing resources (power) are required.

Today, the amount of data generated as a result of human and machine activities far exceeds the ability of humans to assimilate, interpret, and make complex decisions. Artificial intelligence is the foundation for teaching computers and is the future of finding complex solutions.

Conclusion. The role of computer technology and modern information and communication technologies in the training of highly educated specialists at the level of modern requirements is great. today, the role of artificial intelligence systems and intelligent systems in the management of the national economy of the developed countries of the world is growing. The practical application of artificial intelligence systems has enormous economic benefits.[8] therefore, universities in developed countries are training specialists who can develop intelligent systems in the fields of "computer engineering" and "software engineering". the transition to a market economy, joining the ranks of developed countries, requires the preparation of students with higher education at the level of modern requirements. from this point of view, it can be said that it is expedient for students majoring in information technology to be able to use their intellectual systems in solving economic problems and to work with artificial intelligence programs.

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EFFICIENCY OF LEARNING THE BASICS OF PROGRAMMING IN PEDAGOGICAL UNIVERSITIES

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Annotatsiya. Ushbu maqolada dasturlash tilini o'rganish xususiyatlari, shuningdek, buning uchun zarur bo'lgan professional xususiyatga ega bo'lgan bilim, ko'nikma va qobiliyatlar va dasturlash sohasida mutaxassislarni tayyorlashga qaratilgan tadbirlar muhokama qilinadi.

Kalit so'zlar: Dastur, ta'lim, axborot texnologiyalari, o'qitish, dasturlash tili.

Аннотация. В данной статье рассматриваются особенности изучения языка программирования, а также необходимые для этого знания, навыки и умения профессионального характера и мероприятия, направленные на подготовку специалистов в области программирования.

Ключевые слова: Программа, образование, информационные технологии, обучение, язык программирования.

Annotation. This article discusses the features of learning a programming language, as well as the knowledge, skills and abilities of a professional nature required for this and activities aimed at training specialists in the field of programming.

Key words: Program, education, information technology, teaching, programming language.

Introduction. Today, scientific and technological progress leads to an accelerated rate of aging of technical equipment and scientific and methodological resources of the education system. At the same time, modern information technologies act as tools for solving the problems of science and education. Informatization of education and society as a whole allows developing the intellectual and creative abilities of students and implementing comprehensive information and methodological support of the educational process.

The basis of the process of teaching information technology in pedagogical institutes is - teaching the basics of programming to increase the level of assimilation of educational material to students when studying a computer science course.

Teaching the basics of programming in universities is fraught with a number of problems. First, modern programming is a complex and rapidly developing science. At the same time, the real hours allocated in university programs for learning the basics of programming have remained practically unchanged. Secondly, the training of students carried out in this area by the school is very different: from a complete lack of any knowledge subject to relatively fluency in any programming language.

In addition, programming is a science that is inextricably linked with practice. You cannot learn to program without spending many hours composing algorithms, writing and debugging programs. Moreover, it is advisable to combine educational and

practical work with the process of studying methods of developing programs and mastering the features of a particular programming language. Consequently, the elements of programming technology and algorithms should be studied in parallel with the programming language. Thus, one course, as it were, includes several courses.

Literature review. Modern programmers have to deal with a huge number of different programming languages of various levels and purposes. But it is still advisable to start learning programming on the basis of Pascal, since when using this language, a future programmer quickly develops clear algorithmic thinking [1,2,3].

A weighty argument in favor of learning the basics of programming based on Pascal is also the existence of a professional visual software development environment Delphi, which uses Pascal as the base language. Practice shows that the transition to software development in this environment after studying the basic course is painless enough, although it requires some additional knowledge [10].

Currently, when developing complex software, one of two technologies is usually used: structured programming or object-oriented programming [4,11].

The first technology for the development of complex programs recommends breaking (decomposing) the program into subroutines (procedures), decisive individual subtasks, i.e. based on procedural decomposition.

The second technology uses a more complex approach, in which separately functioning elements are distinguished in the problem domain. The behavior of these objects is programmatically modeled using special tools, and then, from ready-made objects, again in a special way, a complex program is assembled. Thus, the second technology is based on object decomposition.

In theoretical terms, the foundations of the professional readiness of the future teacher are highlighted in the works of domestic researchers A.A. Abdukodirov, M.Kh. Allambergenova, M.M. Aripov, A.D. Askarov, U.Sh.Begimkulov, R.Kh. Dzhuraev, F. I. Zakirova, M.Kh. Lutfillaeva, N.A. Muslimova, N.I. Taylakova and others.

As well as the formation of the content of the training of a future teacher of informatics, his readiness for the use of ICT in professional and pedagogical activities, updating the methodology and methodology of teaching informatics in pedagogical universities are studied in the works of foreign scientists from the CIS M.M. Abdurazakov, V. A. Romanov, S. Yu. Kupchinaus, Zh.K. Nurbekova, N.N. Nepeyvoda, I.N. Skopin, M. I. Bashmakov, G. A. Bordovsky, G. G. Vorobiev, N. I. Gendina, A. P. Ershova, E. S. Polat, V. G. Razumovsky, V. A. Dalinger, T.V. Dobudko, as well as foreign scientists I.V. Robert, O. Erstad, O. Jennifer and others.

In addition, at present, the problem of finding new ways and methods of studying disciplines that contribute to the formation of meaningful ways of activity on the application of the knowledge gained in practical activity is urgent [4,5,6].

Research methodology. Learning about object technology requires basic knowledge, so in the first steps we will adhere to the principles of procedural programming.

In the process of developing programs using a procedural approach, the following stages can be distinguished:

• statement of the problem - determination of requirements for the software product;

• analysis - the implementation of a formal statement of the problem and the definition of methods for its solution;

• design - the development of the structure of the software product, the choice of structures for storing data, the construction and evaluation of algorithms for subroutines and the determination of the features of the interaction of the program with the computing environment (other programs, operating system and hardware);

• implementation - writing a program in the selected programming language, testing and debugging it.

• modification - release of new versions of the software product.
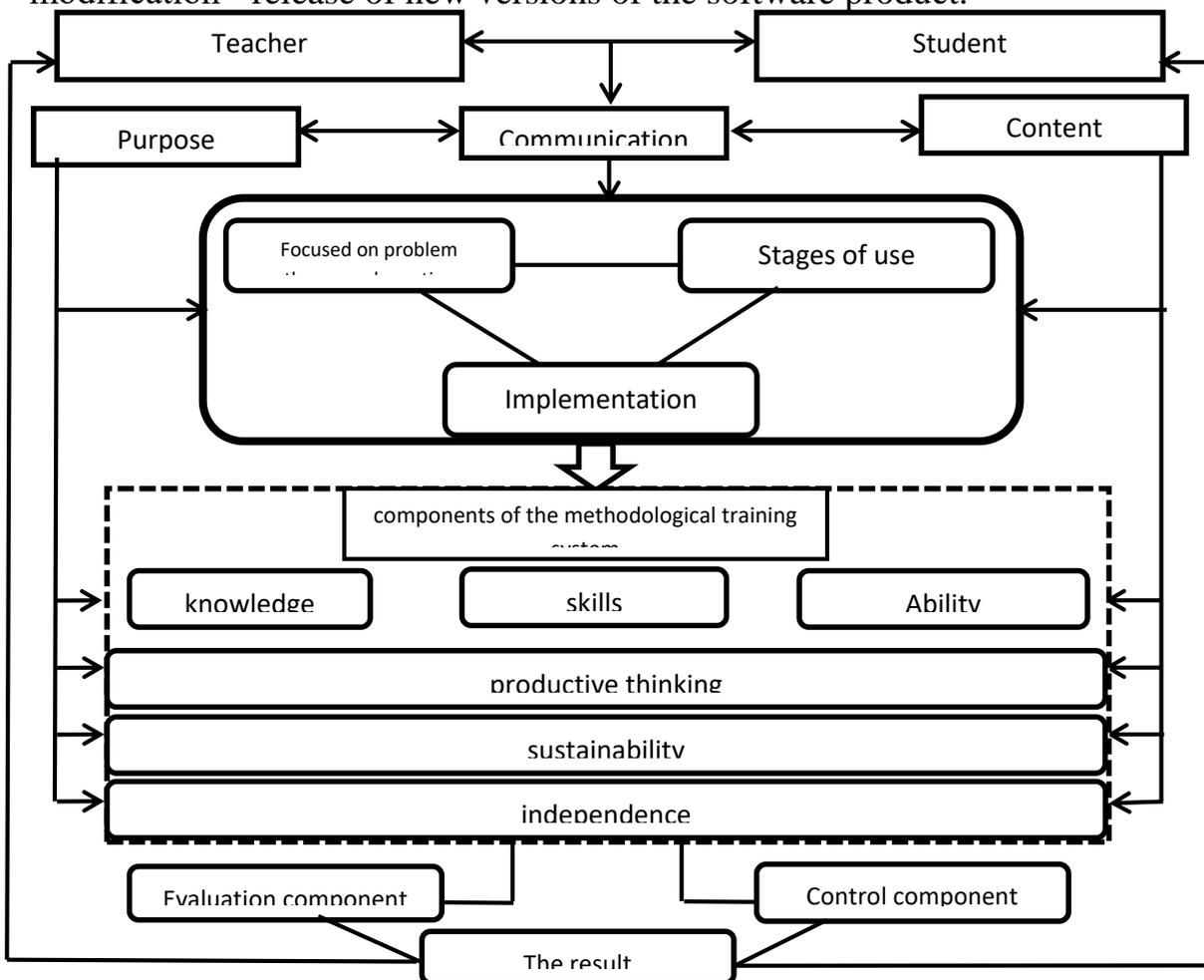
Figure 1 - Model of the learning process programming language in universities

The process of teaching a programming language (in our case, object-oriented programming language C ++) in universities, aimed at the development of software-algorithmic thinking, can be represented in the form of a learning model shown in Fig. 1.

Thus, on the one hand, in many studies, psychologists, teachers, methodologists emphasize the need for the development of productive thinking of future teachers, including teachers of informatics, and on the other hand, there is no work on researching the ways and methods of its development in the process of studying pedagogical universities of disciplines of the subject area of informatics [12]. This determines the relevance of the study, which is associated with the need to develop productive thinking of future teachers of informatics as one of the aspects of improving the quality of education in higher education.

The proposed model represents a necessary and sufficient description of the process of teaching a language to object-oriented programming, aimed at the development of algorithmic thinking of university students, based on modern conditions and specific problems solved in the classroom in this academic discipline. On the basis of this model, it is possible to analyze all the components of the system of training specialists, its goals and objectives, the conditions characterizing this process, as well as the content and structure of general scientific and professional pedagogical disciplines.

The main goal of studying any discipline is not so much the study of the theory itself, but its practical application. That is why during lectures it is necessary to dwell on examples of problem solving. When considering typical tasks, the practical significance of the material under study is visible.

Thus, learning object-oriented programming languages requires the development of new teaching and learning methods. Therefore, it is necessary to use the latest teaching methods in the classroom (lectures, practical and laboratory work) on programming, to use more convenient, widespread and accessible programming systems [6,7,8].

The first part is the goal of teaching this discipline, which is determined by the state educational program of the specialty and is reflected in the working program of the course.

The second part of the model reflects the content of the academic subject, the methodology of teaching the general theoretical foundations and the issues of studying individual sections, the topic of the course and the number of hours per week for one or two semesters.

The third part of the model is a set of methods for increasing the educational motivation of students when teaching object-oriented programming, since motivation stimulates students to study the discipline.

The fourth part of the model means the use of modern educational technologies in teaching programming languages.

The fifth part of this model reflects the learning outcomes, which show the effectiveness of teaching object-oriented programming and the development of algorithmic thinking of university students in the process of teaching programming.

The purpose of the course we are studying is to increase the level of knowledge of students on the main theoretical and practical aspects of programming technology (C ++ language), the ability to solve problems of various categories of complexity in console and visual programming systems, at the level of program development, based on the development of algorithmic thinking of students through programming in the object-oriented programming language C ++, which meets the requirements of the state standard of higher education in the specialty "5110700 - Methods of teaching informatics" and other specialties of the direction of information and communication technologies.

The content of training refers to the body of knowledge that students acquire in the classroom on a specific subject. Learning content generally refers to facts, concepts, theories and principles that are taught and learned in specific academic courses.

As shown, the improvement in the quality of teaching computer science will be ensured if:

• to organize the interaction of a teacher and a student, characterized by dialogic and reflectiveness, carried out through task-problem lectures and the use of the project method, which involves differentiation, taking into account the level of development of productive thinking of students;

• use in the educational process a system of computer science tasks aimed at developing students' productive thinking.

The selection of the content of the programming course and the general logic and sequence of its study can help students to gradually solve various problems on a computer, set a problem and independently develop an algorithm for its solution, use applied programming systems, develop basic program documents, work with modern programming systems, especially object-oriented oriented. These skills require the acquisition of knowledge on the theoretical and practical aspects of programming technology, modern technologies for the development of algorithms and programs, the main methods of debugging programs in modern software development environments, object-oriented programming and design.

Today, in the organization of training in various disciplines, including teaching the language of object-oriented programming, educational motivation of students plays an important role. Learning motivation is a process that initiates, directs, and sustains efforts to carry out learning activities. Learning motivation of students is one of the most difficult pedagogical problems of our time. It is a complex, integrated system formed from the motives, goals, perseverance and attitudes of the students. Motivational processes in teaching students can and should be controlled, but for this it is necessary: to create conditions for the development of internal motivation, to stimulate students. In order to motivate students to study an object-oriented programming language, it is necessary to take specific steps that help to increase the learning motivation of students and lead to an increase in learning efficiency [6,9]:

- set the exact goal of studying each topic for students;
- help in choosing tasks and solving them;
- organize the implementation of various exciting projects.

The technology of teaching in educational institutions includes a set of methods, techniques and methods for the design, organization and conduct of the educational process with the provision of comfortable conditions for both students and teachers, in order to reveal their personal potential in the process of joint activities.

It should be noted that training technology is the implementation of planned operations and procedures of action that lead to the planned result, it is a means by which the desired result can be achieved. Therefore, teachers should have a good understanding of the technology of teaching a specific subject, its advantages and disadvantages, they should strive in the classroom to effectively integrate modern and traditional teaching technologies.

Technological equipment for teaching object-oriented programming languages, based on algorithms, is considered an important aspect of teaching, since it is associated with the search and combination of technologies in the pedagogical process

that will provide an effective result and the development of algorithmic thinking of students when teaching object-oriented programming.

Analysis and results. To obtain the desired result of teaching an object-oriented programming language aimed at developing the algorithmic thinking of university students using our proposed model, it is necessary to fulfill the following components in the preparation and teaching process of this discipline:

1. Determine the necessary and clear general goals and specific objectives of teaching this course, some of which are given in the state standard of higher education in this discipline.

2. Prepare the course content (optimal selection of topics and distribution of material within the time allocated for training), depending on the general principles and selection criteria.

3. Determine the methods of motivation and increasing interest in obtaining knowledge, skills and abilities of students in the field of algorithmicization and programming.

4. Choose modern software and hardware that meet the goals and objectives of this course.

5. To have available methodological developments and handouts with assignments corresponding to the specialty of students.

6. To develop a system of general and individual tasks, allowing to develop the algorithmic thinking of students;

7. Develop a system for testing students' knowledge on intermediate rating tests and at the end of the semester for this course of study. This is necessary in order to give objective assessments and, ultimately, to determine the assessment of the quality of learning outcomes and assessment of student performance, since in some test systems it is not possible to objectively assess students' knowledge in the exact sciences, in particular, algorithms and programming.

Educational and cognitive activity in programming classes, to a greater extent than in classes in any other subject, should teach the student to perseverance, perseverance, accuracy, accuracy, control over their conclusions and judgments, exactingness and clarity in judgments, while developing algorithmic thinking.

Teaching object-oriented programming languages should foster independence, initiative and creativity in students.

At the same time, we should especially note that programming is capable of developing indefinitely, as the history of its development speaks volumes about.

Studying the course of object-oriented programming in universities should help students in their future activities in development of software, design of information systems and solving industry problems, so that they can quickly and according to the appropriate scheme to solve problems of different levels of complexity.

The effectiveness of the results of teaching object-oriented programming in universities using the theoretical model developed by us, aimed at the development of algorithmic thinking, has been proven in the process of teaching programming technology in C ++ during one semester among 2nd year and 3rd year students. in the specialty "5110700 - Methods of teaching informatics". It should be especially noted that according to the results of experimental teaching, the progress of students in this

subject has significantly increased. For example, if at the first stage the percentage of the ratio of students' progress in the control and experimental groups was 48% and 46%, respectively, then at the second stage these indicators were 60% and 100%. Thus, all students of the experimental group have successfully completed the object-oriented programming course, which once again proves the effectiveness of the model we have developed.

Conclusion. Thus, the objectives of the study were determined:

• to reveal the methodological features of conducting lectures and laboratory practice of disciplines that illuminate the purpose and functional content of computer software with the purposeful development of productive thinking;

• to create, within the framework of the task approach, a model of teaching the basics of software for the future teacher of informatics, aimed at developing the productive thinking of the future teacher of informatics and improving the quality of teaching in informatics;

• experimentally test the effectiveness of the developed methodology for teaching the basics of software for the development of productive thinking of the future teacher of informatics.

As a priority direction for further research, it seems appropriate to study the problem of the development of productive thinking of a future computer science teacher in the process of his methodological training.

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DISCOURSE LINGUISTICS: GENDER BASED CHARACTERISTICS OF FOLKLORIC DISCOURSE

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Annotatsiya. Qachonlardir diskurs "matn + vaziyat", matn esa shunga mos ravishda "nutq-vaziyat" deb talqin qilingan. Hozirgi kungacha zamonaviy tilshunoslikda matn va nutqning o'zaro bog'liqligi masalasi ziddiyatli masaladir. Shubhasiz, matn va diskurs o'zaro bog'liq tushunchalardir. Tilshunoslikning yagona sohasi, ya'ni turli xil fanlarning kesishgan qismi dskurs tahlili yoki diskurs tadqiqotlari deb hisoblanadi. Asrlar davomida tillararo munosabatlar ritorika, notiqlik, stilistika va adabiyot kabi sohalarda tadqiqot mavzusi bo'lib kelgan. Yigirmanchi asrda nutqni tildan ajratish uchun mustaqil fan sohasi sifatida nutq tahlili deb ataladigan tushuncha shakllandi. Nutqni tahlil qilish tilshunoslikning mustaqil bo'limi sifatida faoliyat yuritishini hamma fanlar to'liq tan olmasa ham, ammo bu uning yaqin kelajakda yuz berishi ehtimoldan xoli emas. Ushbu maqolada ma'ruza va tanqidiy nutqni tahlil qilish tarixi, turlari va farqlari muhokama qilinadi.

Kalit so'zlar: O'qitishdagi nutq, matn, tanqidiy nutq, nutqni tahlil qilish, jins, folklor nutqi.

Аннотация. Раньше дискурс интерпретировался как «текст + ситуация», а текст - как «дискурс-ситуация» соответственно. По сей день вопрос о взаимозависимости текста и дискурса в современной лингвистике остается проблемой. Очевидно, что текст и дискурс - взаимосвязанные понятия. Одним направлением лингвистики, которая является пересечением различных дисциплин, считается анализом дискурса или исследованиями дискурса. На протяжении веков межъязыковые отношения были предметом исследований в таких областях, как риторика, публичные выступления, стилистика и литература. В двадцатом веке так называемый дискурс-анализ сформировался как самостоятельная область науки, чтобы отличать речь от языка. Хотя не все дисциплины полностью признают, что анализ дискурса действует как независимый раздел лингвистики, хотя весьма вероятно, что это произойдет в ближайшем будущем. В этой статье обсуждается история, типы и различия между дискурсом и критическим анализом дискурса.

Ключевые слова: дискурс в обучении, текст, критический дискурс, анализ дискурса, гендер, фольклорный дискурс.

Abstract. At that time, the discourse was interpreted as "text + situation", and the text as "discourse-situation" accordingly. To this day, the question of the interdependence of text and discourse in modern linguistics is controversial. Obviously, text and discourse are interrelated concepts. One branch of linguistics that

is the intersection of different disciplines is considered as Discourse analysis or Discourse studies. For centuries, interlinguistic relations have been the subject of research in such areas as rhetoric, public speaking, stylistics, and literature. In the twentieth century, the so-called discourse analysis was formed as an independent field of science in order to distinguish speech from language. Although not all disciplines fully recognize that discourse analysis operates as an independent branch of linguistics, whilst, it is very likely that it will happen in the near future. This article discusses the history, types, and differences between discourse and critical discourse analysis.

Keywords: Discourse in teaching, text, critical discourse, discourse analysis, gender, folkloric discourse.

Introduction. Discourse is an object of interdisciplinary research, where discourse analysis is perceived as a field of young scientific rich field through different forms of approaches. Discourse analysis is inextricably linked with other fields such as psychology, computer linguistics, artificial intelligence, philosophy and logic, sociology, anthropology and ethnology, literature and semiotics, history, theology, jurisprudence, pedagogy, translation theory and practice, communicative research, political science. Each of these disciplines has a unique approach to the study of speech, some of which have a significant impact on the analysis of linguistic discourse. There are different methods of discourse analysis, for example, the Conversation analysis approach, originally based on the study of everyday dialogues by a group of American sociologists and ethnomethodologists, published in the work "Simple Taxonomy of Replication Continuity" by H.Sachs, E.Sheglof, G.Jefferson the early 70's. The peculiarity of this type of analysis is that it is not limited to making corrections and explanations to the replicas in the dialogue. Dialogues are also enriched with nonverbal and nevolocal (silent actions - rhythm, laughter, gestures, look) behaviors.

Literature review. Well-known Russian scholar V.I.Karasik distinguishes two special types of discourse: "personal (person-centered) and institutional (based on a certain status) types of discourse". In the first case, the speaker acts as a person with his own rich inner world, and in the second case as a representative of a particular social group (Karasik, 2000, p.17). N.D.Aryutunova emphasizes the following features of discourse, namely, "discourse is a conceptual aspect of the text combined with extralinguistic, pragmatic, socio-cultural, psychological and other factors, speech seen as purposeful social action (Aryutunova, 1990).

In discourse based psycholinguistic research, however, natural live speech is not chosen as the material for empirical research, but more precisely statistical tests play crucial role in experimental data. The methodological issues of discourse are related to its oral type of transcription. Not only words, but also situations related to pauses, laughter, prosody, and remarks are of great importance in the recording of oral speech, because through these phenomena it is possible to make a meaningful analysis of oral speech. According to T.A.van Dijk, discourse analysis mainly involves textual and contextual aspects. The author also notes that the discourse consists of frames (van Dijk, 2000). Prospective areas of discourse analysis that combine linguistic and nonlinguistic approaches are different, such as content analysis, conversion analysis, Foucault analysis, critical discourse analysis, Bakhtin analysis, interaction analysis, simlog, communication ethnography analysis, categorization method, automatic

analysis of discourse (http://discourseanalysis.org/ada1/st4.shtml). The purpose of discourse analysis is to identify the social context that is hidden behind oral or written speech.

The ideological source for discourse analysis is the theory of speech acts developed by J.Serl. Critical analysis of discourse is based on a critical study of social inequality in language / discourse. Consequently, concepts such as power, history, and ideology predominate in any critical analysis of discourse. This analysis does not allow for the establishment of a simple deterministic relationship between text and society. Since 1979, a comprehensive approach to critical discourse analysis has been revised and modified by scholars who have remained faithful to various linguistic traditions. In addition to studying sociolinguistic, linguistic, socio-psychological, and literary problems, scholars have specified areas such as racism, ethnic and gender discrimination, and language policy. The theory of critical analysis of discourse and its basis is based on Marxism, Frankfurt school theorists (T.Adorno, W.Benjamin, P.Burde, G.Marcuse, J.Habermas, S.Hall, M.Horkheimer), critical linguistics (J.Kress, R.Fowler, B.Hodge) and system-functional linguistics (M.Halliday). Methods of critical analysis of discourse have emerged in three main schools:

1. Cognitive analysis of discourse created by T.van Dijk;

2. N.Fairclough discourse analysis;

3. German School of Critical Analysis of Discourse (Z.Eger, U.Maas, Yu.Link);

4. Analysis of R.Wodak's sociolinguistic discourse and the Viennese school where his colleagues (G.Weiss, H.Ludwig, P.Novak, I.Pelikan, M.Sedlak) work emerged.

In critical discourse analysis, special emphasis is given to donimanant nature of discourse, as each discourse dominates a particular time and space. It sometimes analyzes situations where the pressures, forces, and social conventions exerted by the authorities. In a critical analysis of discourse, T.van Dijk interprets shortcomings observed in most works in the field of critical discourse analysis / critical linguistics as the importance of various elements of extralinguistic reality and the neglect of social / cognitive factors (van Dijk, 1993). Another type of critical analysis of discourse was proposed by the British scientist N.Fairclough, which is characterized by the important role of heuristic analysis and the fact that a single communicative phenomenon is perceived differently by different audiences (Fairclough, 1992; 1995; 2000). In contrast to T.van Dijk's critical discourse analysis, proposed by N.Fairclough his followers gave up the study of the cognitive model and took into account the influence of a particular social discourse (globalization discourse, neocapitalism discourse, neo-liberal discourse).

In German-speaking European countries, R.Wodak's theory of critical analysis became popular, according to which the anti-Semitic nature of discourse gave rise to this said approach. In this case, all the available data (oral and written texts) through the socio-historical method of discourse is systematically combined and analyzed at all levels (Wodak, 1995). Discourse is always historical, it takes a synchronous or diachronic approach to communicative events that are happening now or have happened before. O.M.Morgun emphasizes that the main factor hindering the critical analysis of discourse is its excessive subjectivity (Morgun, 2011, pp.122-128). When comparing studies conducted with discourse studies and critical analysis of discourse,

it can be seen that in critical analysis the identification of complex relationships between social stratum and discourse structure predominates. Similar discourse analyzes are traditionally related to linguistic (phonological, grammatical, syntactic, lexical, semantic), pragmatic (speech and communicative acts), rhetorical, stylistic analysis (genre based), structural (stories, news, parliamentary debates, lectures, advertising texts), conversion (based on conversation), semiotic (audio, visual and other multimodal parameters).

Research methodology. Although the concept of "folklore discourse" is common in scientific research are today, the problem of its perfect description has not yet been resolved, only a number of individual observations have been made regarding the pragmatic analysis of the discourse. In our view, folklore discourse is interpreted as a specific type of collective speech activity conditioned by the socio-cultural situation, historical occasions. An integral part of this speech activity is the traditional text, which is aesthetically restructured, reflecting the collective knowledge that meets the needs of community and stabilizes the society. Folklore discourse is a special doctrine that is practiced in a number of communicative situations serving different areas of human activity. It is noteworthy that in folklore discourse, communicators play different roles in different genres, for example, in ceremonial genres, communicators belonging to the same society occupy an unequal active position; active position in magic genres like fairy tales and legends (Pelipenko, 2006). Representatives of any society consciously consider folklore as the source of the national idea, as an integral part of the cultural heritage that needs to be preserved and promoted.

Information about the peculiarities of folklore discourse can be obtained in a variety of ways: conversations with communicators, text analysis, and psycholinguistic experiment. In all cases, the identity of the communicators is addressed first. What is characteristic to folkloric personality of the communicators is, first and foremost, the collective transmission of values (Nikitina, 1993). In traditional and modern folklore, folklore manifests itself as "for others," speaks on behalf of the collective, and ensures obedience to collective traditions. Because folklore discourse is a complex mix of personal and institutional discourse, its participants also perform collective and individual tasks.

Addresser (speaker). The addresser in folklore discourse is the subject who demonstrates belonging to a particular society in practice. The addresser in folklore discourse has a complex structure: author-speaker (creator of the text) -subject. Central to this triad is the speaker. He is multistructured in folklore discourse, and can be a "speaker", an author, and an interpreter. On the one hand, folklore traditions are not aimed at reproducing texts, but at preserving them in different variants, so the speaker often serves as an interpreter or storyteller, singer-text reproducer. The peculiarity of the "speaker-author" relationship in folklore is, first of all, in folklore discourse the speaker cannot be the author of the direct text. According to S.B.Adoneva, "the author of a given speech is an actor, who is responsible for the social action carried out through a real speech act" (Adoneva, 2004, p.56). In our opinion, depending on the genre, the speaker can participate in the creation of a folklore "work" in different ways, for example, as a co-author of a group. Naturally, in traditional texts, the narrator inherits the status of a narrator, an inheritance that existed before he was born and raised,

making changes to this text and emphasizing certain aspects depends on specific communicative processes. The "speaker-subject" (as part of the "author-narrator-subject" triad) has a special feature in folklore, the subject is the collective, and it is the listener (reader). At the same time, in choosing a text, the narrator not only acts as a transmitter of collective knowledge, but also expresses his or her attitude. In this case, the quantitative nature of the narrator is important, for example, in folklore, solo genres (fairy tales, chastushkas), group genres (folklore game and labor songs), genres that include solo and choral performance (lyrical songs, ballads), in which the role of the narrator varies depending on the genre. In the performance of individual genres the speaker has the maximum freedom in co-creation and reproduction of the text, and then the collective performance requires him to create the most accurate (not informative) performance situations (Putilov, 1994).

In folklore texts, the addressee is a member of society. The addressee has also discursive attributes, but also different characteristics depending on the genre condition (collective / individual performance). The place where the addressees are marked can vary in quantity, depending on the genre. For example, in the performance of lyrical songs, the listener's task is to experience the emotional state that the narrator is experiencing; while guessing the riddle, the listener both enjoys and tests their knowledge coded by their culture in finding the answer. Of course, in creating or reproducing the text, the narrator focuses on the age, gender, and social characteristics of the listener; here addressee takes the position of "manager". Folklore discourse reflects collective thinking and collective values.

The plot and content structure of any type of text depends on the gender of the addresser or subject of the speech. In determining the stylistic features of punctuation marks, folkloric discourse collected and edited by men and women addressers (narrators) were used. Parameters of the male characters such as face (eyes, eyebrows, beard, nose), stature, age, dress and voice take precedence in female texts: L'usignuolo divenne, tutt'a un tratto, il più bel giovane che si fosse mai visto, la prese per mano e la condusse fuor del bosco (hyperbole) / Шавкат хўп чиройли, худди осмондаги чўлпон юлдуздай гўзал эди (simile); Бу сафар эшикдан ёши эллик бешларга борган, соқоли мошгуруч, жуда ҳам чиройли, икки юзидан нур томиб турган бир киши чиқиб келиб... (metaphor, personification); семиз кўк отларда бир-биридан чиройли бир хил кийимли ёш йигитчалар, отлиқлар олдида қип-қизил ипакда камзул ва шим кийган, белига тилла камар боғлаб, бошига тож ўрнатган, ўн саккиз яшар бир йигит турибди. Бу йигит шу қадар хушқомат, **қора кўз, қора қош, қизил юз** йигитки, мисоли икки юзидан қон томгандай кўринади (simile, alliteration, epithet); Эй қадди шамшод, сўзлари шаҳд-у шакар (epithet, cacophony), гўзал йигит!; Шунда олдига шапалоқ-шапалоқ қизил доғлар теккан, оқ ола ёпғич тутган, башараси буришган, афти хунук бир киши, ўнг қўлида пичоқ, чап қўлида бояги йигитнинг калласини қулоғидан ушла**б**, қонини оқизи**б**, девордаги каллалар ёнига олиб бори**б** михлади (epiphora, climax, epithet, assonance**)**.

In the English masculine discourse, the image of male characters is combined with physical ability: Along with a constitution of body naturally vigorous and powerful, he was gifted with all those noble qualities of the mind which a true hero is supposed to possess. Male addressers use tropes (metaphor, synecdoche, and hyperbole), phonetic

devices (alliteration, assonance, epistrophe, and cacophony), and descriptive stylistic devices (simile, epithet, periphrasis and personification, catachresis) in the depiction of characters of different sex.

In the text of "female addressers" emphasis is given to such details as beauty (height, physical ability), age, face (beard, hair, and eyes), and dress of male characters. Neither material status, nor age parameters affect the image of male characters, notably, the middle and upper classes are represented in the same style: She only saw before her a splendid stalwart man in the prime of life, with magnificent presence, flashing eyes, and raven hair ... he was then eighty years of age, but tall, erect old man, with flowing white beard and hair fell in long curls over his shoulders, keen eyes, and of most venerable aspect (epithet, syntactic parallelism); …and his beautiful clothes were gone – the velvet suit and cap and feather that he had looked so handsome in at the dance, when all the fine ladies fell in love with him / Un giorno mentre andava nel bosco lamentandosi, incontrò un signore dalla lunga barba, e gli disse (epithet) / – Болам, ўзингиз худди подшонинг ўғлидек экансиз (simile).

Only male narrators frequently use the phonetic type of stylistic devices in the depiction of the protagonists. In women's discourse, however, irony, rhetorical sentences, antithesis, and antonomasia predominate in the depiction of characters. According to male adressers, female heroines because of their characteristics such as age, height (neck, torso, body, waist, arms), face (forehead, eyes, eyebrows, lips, teeth, ears, eyes, voice, look and words), hair, clothing, and jewelry embody her as an attractive subject: When a neighbouring maiden found her seated in an old chair, as white as monumental marble; her hair, about which she had always been solicitous, loosened from its curls, and hanging disordered over her neck and bosom, her hands and forehead. The maiden touched the one, and kissed the other; they were as cold as snow (simile) / Sui quattordici anni avvenne a Piumadoro una cosa strana. Perdeva di peso; ...si avvolse, si adagiò nei suoi capelli immense come nella coltre del suo e si lasciò trasportare (simile) / Ўтирганлар ширакайф бўлганда бояги уйдан бўй-бастлари бирдек, ёшлари ўн етти-ўн саккизларда, бўйинларига марварид ва гавҳарлар, қулоқларига олтин исирғалар таққан, нозик, ҳарир кўйлаклар кийган, қаламқош, қора кўз, нозик бадан қизлардан (epithet, alliteration).

Analysis and results. Discourse studies mentioned above are examples of the use of discourse analysis in interdisciplinary research and are of great practical importance for researchers not only in Germany, but also all over the world. As even this brief overview shows, discourse analysis and methods of its application in interdisciplinary projects in the last decade are often ranked among the most popular research methods in the social sciences and the humanities. The concepts that shape discourse are concepts; they are conceptosphere of folklore discourse. Love, labor, family is the basic concepts of folklore discourse, and their content is limited. Artifacts such as natural facts, sea, and coast, home are nondiscursive concepts that influence mutual discourse concepts. In conclusion, we can say that folklore discourse is a type of speech activity that is historically formed in our minds, is constantly updated and is called folk art. Folklore discourse consists of a collection of folklore texts. It has both oral and written forms.

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FORMATION OF WORD FORMATION DICTIONARY FOR EDUCATIONAL CORPUS

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Annotasiya: Maqolada korpuslar, qolaversa, ta'limiy korpuslar uchun zaruriy ma'lumotlar bazasi hisoblangan morfoleksikonni shakllantirish masalasi atroflicha tavsiflangan. Grammatik lug'atlar bilan o'xshash va farqli tomonlari qiyoslangan. Jahon tajribasi, o'zbek tilidagi nazariy qarashlar va tadqiqotlar o'rganilgan. Bundan tashqari ta'limiy korpus uchun dastlabki morfoleksikon bo'yicha amalga oshirilgan ishlar yoritib berilgan. Natijalar jadval va grafiklar asosida ko'rsatib berilgan bo'lib, kelgusida bajarilishi lozim bo'lgan ishlar bo'yicha takliflar ishlab chiqilgan.

Kalit so'zlar: ta'limiy korpus, grammatik lug'at, morfoleksikon, avtomatik morfologik tahlil, raqamli indekslar, morfosinf, morfologik lug'at.

Аннотация: В статье подробно рассматривается вопрос словообразования и формирования базы данных, который важен для учебного корпуса. Сегодня отмечаются учебные словари, в том числе словарь словообразования. Анализируется опыт мировой педагогической лексикографии и вопросы учебной лексикографии на узбекском языке. Он также охватывает работу, проделанную для создания первого слова для образовательного корпуса. Разработаны предложения по обогащению учебного корпуса за счет словаря словообразования.

Ключевые слова: учебный корпус, словарь словообразования, словарь словообразования, электронный словарь, автоматический анализ, учебный словарь, словообразование.

Annotation: The article describes in detail the issue of word formation and database formation, which is important for educational corpus. Today, it is noted that educational dictionaries, including the dictionary of word formation. The experience of world educational lexicography and issues of educational lexicography in Uzbek language are analyzed. It also covers the work done to create the first word for the educational corpus. Proposals have been developed to enrich the educational corpus through a dictionary of word formation.

Keywords: educational corpus, word formation dictionary, word structure dictionary, electronic dictionary, automatic analysis, study dictionary, word formation.

Introduction. One of the urgent tasks of our science is to study such issues as the creation of the educational corpus of the Uzbek language, the development of its linguistic support on the basis of modern scientific principles as a promising scientific direction of corpus linguistics.

While it is the duty of every nation to preserve its mother tongue, it must be aware of its laws and criteria of development. In this regard, the textbooks of the native language provide a number of popular scientific materials on the development and replenishment of language vocabulary. The enrichment of vocabulary is mainly due to word formation. Preliminary information on word formation begins with the fifth grade of Uzbek language textbooks [1]. In all the textbooks of the next class, the rules of word formation, the exercises will continue. Abdurauf Fitrat's remarkable account of the development of vocabulary in a fifth-grade mother tongue textbook states: "The world is changing. Life is renewed day by day. Many events and things that did not even enter the dreams of our ancestors a hundred years ago are emerging. They demand new nominations to name them. We either recreate the new names (*учғич, уюшма, бошқарма* so on), or we take them from others (*электрик, тельефон, пойизд* so on), or we recreate our forgotten old words (such as *қурултой*). If we do not accept the introduction of new words in these three ways, we will stop enriching our language". The above points confirm how important it is to include information on word formation for the educational corpus. At this point, the word formation dictionary serves as the main source.

The above points confirm how important it is to include information on word formation for the educational corpus. At this point, the word formation dictionary serves as the main source.

Analysis and Results. Lexicography is a widely studied linguistic basis, methodology, methodics of linguistics: the principles of lexicographic production, in particular, the vocabulary, its specific structure and composition are reflected in several monographs and textbooks [4]. These sources serve as a valuable source with a detailed description of the vocabulary of various dictionaries, the structure of the dictionary article, universal / special, lexical / non-lexical, translation, terminological dictionaries. Russian lexicography has a great deal of experience in this regard: the publication of a number of word-formation dictionaries is a clear proof of this [8]. It is also noteworthy that among the dictionaries of word formation there are several dictionaries for schoolchildren [8].

Word formation is also widely studied in Uzbek linguistics: the existence of numerous monographic studies [9], articles [7] proves this. It is gratifying that hundreds of encyclopedic, linguistic, terminological, translated and other dictionaries have been published in Uzbek lexicography. However, there are still many dictionaries that need to be created and published. Although the field of educational lexicography in Uzbekistan is not considered to be exemplary, the monographic study of issues such as linguistic bases, history and prospects of educational lexicography [9], various issues of educational lexicography have been addressed in a number of articles, in particular, several textbooks [2.] shows that Uzbek educational lexicography does not stop there.

As B.Bahriddinova rightly points out, the need to bring up the younger generation spiritually mature, responsive, independent-minded, inquisitive, committed to national and universal values increases the need for a dictionary. This is the formation of the theory of Uzbek educational lexicography based on the traditions of world educational lexicography, the development of its scientific-linguistic, linguodidactical, psycholinguistic, sociolinguistic, linguomethodological (linguopedagogical), cognitive-linguistic bases, modern linguistics, requires the creation of a demand-driven learning dictionary [10].

In her monograph on educational lexicography, B.Bahriddinova gave a detailed place to educational dictionaries in the Uzbek language. The linguist describes in detail the peculiarities of educational dictionaries; lists published textbooks. Below we focus on the formation of a dictionary of word formation for the Uzbek language educational corpus.

Research methods.

Methods of classification, description, comparison, statistical analysis were used to cover the research topic.

Analysis and discussion of results

A word-formation dictionary is a dictionary that records a word-formation and its word-formation structure [10].

A word-formation dictionary (derivation dictionary) is a dictionary that shows the division of a word into constituent morphemes, word-formation structure, and a group of words belonging to a word-formation node (formation from a single base and

having common constructors). In a word-formation dictionary, lexical units are given in the form of a division into a forming morpheme. The smallest unit for such a dictionary is a morpheme. There are four types of word formation dictionaries in the sources [9]:

1. *Dictionary of root-word formation*. The basis of such a dictionary unit is a morpheme. Words are given in alphabetical order without regard to the relation of making a base.

2. *Dictionary of morpheme structure of a word*. The function of such a dictionary is not only to show the morpheme content of each word, but also to reveal its word-formation structure.

3. *An explanatory dictionary of affixal morphemes* provides information about the importance of additional (affixal) morphemes, their specific function, place of use.

4. In *the frequency word formation dictionary*, morphemes are placed in descending frequency order.

A morpheme dictionary is a dictionary of a list of morphemes of a language; in which morphemes are interpreted in a certain sequence; illustrations are given for use in the examples. Experts point out that a word-formation dictionary is an expanded version of a morpheme dictionary. In it, morphemes are classified, described, the word-formation paradigm of different groups of morphemes, as well as a nesting nest from the same stem for each stem are given.

The reverse dictionary can also, in a sense, be recognized as a morpheme dictionary view, since the inverted dictionary allows the observation of suffixes: in which the suffix is expressed in the stem and the addition to each other.

In order to form a dictionary of word formation for the educational corpus of the Uzbek language, it is necessary to first identify the materials that will be the theoretical and methodological basis. Our observations show that such materials include the works of A.A.Reformatsky, V.V. Dubichinsky, G.E. Shimchuk, A. Hojiev, S.Usmanov, R.Ya.Gibadulin and others.

A.A.Reformatsky in his book "Introduction to Linguistics" [31: 162] describes the process of compiling a dictionary as follows: "Compiling a dictionary is a complex process. The general linguistic order of the word - in addition to its meanings, grammatical and phonetic characteristics, it is necessary to understand the technique of compiling a dictionary and the structure of the dictionary. V.V.Dubichinsky, based on modern Russian research, (1) a dictionary of key words of word-formation dictionaries; (2) a dictionary of morpheme content; (3) dictionary of word formation; (4) an explanatory dictionary of basic morphemes; (5) distinguishes five types of morphemes, such as frequency dictionary. Word-formation dictionaries also serve as a partial frequency-valence dictionary: along with word-formation units, they reflect information about the language frequency, productivity, activity, cohesiveness of the word-forming affix [10].

Placed in alphabetical order, one of the first Russian-language dictionaries of morphemes by Z.A. Potikha, the practical significance of the word-formation dictionary for schoolchildren [2] is that a user who cannot independently determine the morpheme content of a word can identify any information about morphemes.

G.E. Shimchuk calls the word formation dictionary [6] published by A.N. Tikhonov in 1978 a typical example of an active user word formation dictionary for students. The dictionary explains 145,000 words covered in 13,000 word-formation nests, based on word-formation laws. In a word-formation nest, words related to content are made up of a single stem, gathered in a nest. A dictionary article begins with a keyword that only consists of a base, indicating on which basis it is made, in what method, and by what means it is made. This dictionary allows you to study the construction paradigm, the construction chain, and the construction nests. It also reflects the formation of different word groups in a particular semantic group, the possibility of word formation from one category to another. It is well known that in annotated dictionaries the famous horse is not represented. This results in the inability of a particular language to form words. For this reason, in the word-formation textbook, well-known horses are included in the construction box, if necessary.

In addition to the experience of word-formation dictionaries, it is useful to study the principles of electronic dictionary formation in order to compile a dictionary of Uzbek language. R.Ya.Gibadulin, Ya.N.Gibadulin, A.R.Sakaev, M.Z.Zakiev, I.M.Salamatin in their article on the creation of an electronic dictionary of Turkic languages describes the practice of creating a «responsive» dictionary on the basis of automatic analysis [10]. The authors point out that a dictionary that can analyze automatically requires software tools in addition to forming a linguistic base.

These include a text editor, a software tool that understands UNICOD, and even the operating system.

B.Bahriddinova writes about the requirements for the volume of textbooks: "Experts say that in the practice of world educational lexicography a large textbook can contain up to 25,000 words, and P.N. Denisov (50,000 words) objected to the question, «Is there such a large textbook, can such a dictionary be considered a textbook, does this not lead to uncertainty in defining the boundaries of the textbook? [8]» and, concluding the controversy, not only for the student of the higher education institution, but also for the translation of dictionaries, the limitation of the volume of annotated dictionaries reduces the effectiveness of the practical use of the dictionary. They suggest distinguishing the following types of dictionaries according to the size of the dictionary:

1) small dictionary - a special dictionary (3000 words) based on a clear user (addressee) and strictly defined tasks;

2) medium dictionary - a dictionary with an average amount of vocabulary of receptive and productive nature (10,000 words);

3) large educational dictionary - a dictionary with a vocabulary of up to 25,000;

4) large-scale dictionary - a dictionary consisting of 50,000 words and more"[7].

The following factors should be considered in the formation of a dictionary for word formation for the educational corpus on the basis of the source and experience of compiling a dictionary:

firstly, to determine the vocabulary vocabulary as well as the vocabulary nest;

secondly, to follow the methodology of compiling a derivative dictionary;

thirdly, not to limit the size, unlike a traditional dictionary, given that it is an online product;

fourthly, setting the same parameter for the dictionary article;

fifthly, to indicate the preface, the basis of construction, and the means of construction;

sixthly, to put cross-reference indices in the construction nest to show the construction paradigm;

seventhly, the inclusion of information (tags) informing about the creation of another category from one category.

It should be noted that the textbook on word formation in the Uzbek language serves as a linguistic and lexicographic source for the dictionary of word formation in the educational corpus. The first step in this direction in the Uzbek lexicon was made in 2008 by the team of authors. It is written in the introductory part of the dictionary: "Language is enriched on the basis of internal and external sources. That is, a word is learned from the outside, or on the basis of the internal capacity of the language - with the formation of the word, a unit of new meaning emerges. Word formation from this implies the creation of a new word on the basis of existing material and opportunity in the language, the enrichment of the vocabulary. The dictionary related to word formation serves as an important source in the study and teaching of the development of our language. Despite the fact that so far a lot of work has been done on word formation in the Uzbek language, such a dictionary has not been compiled at all. With this in mind, as a first experiment, we created a «dictionary of word formation of the Uzbek language» [3].

While we use this edition as a basis for the dictionary of word formation of the educational corpus, it should also be noted that the electronic dictionary of the corpus differs in every way from the paper dictionary. Below we will discuss in detail the issues of creating a corpus dictionary using the published dictionary material. To do this, we first remember the terms of word formation and use them in the formation of vocabulary structure: word formation structure, word formation affix, word formation model, word formation type.

The purpose of the above concepts and their interpretation is that the following corpus dictionary contains such constituent parts; each word formation box uses a character / tag that represents such information / information. Unlike a paper dictionary, an electronic word-making dictionary has a volume, hence the amount of information that is also unlimited. Of course, the information is given systematically. Word formation is reflected in the textbook only using affixal morphemes. In forming a word-formation dictionary for the corpus, we are limited to the "foundation + word-forming affix" template. If you enter the template «base + word-forming morpheme» and «base + word-forming auxiliary word» (that is, if there is such a case in the dictionary), this word in the dictionary is referred to the corpus morpholexicon. This will also appear in the search box. We explain this situation in detail below with illustrative material.

A.Hojiev: "Some works talk about the formation of artificial words from word combinations [35] and give examples as five-year + five-year, railway + railway. But such a few words are words formed as a result of translation (calque) from the Russian language. There is no word-formation phenomenon in the Uzbek language itself. In

this language, new words are formed only from words. Words like the ones mentioned above do not form or belong to any type of Uzbek word formation".

This is because there are such examples in the corpus (even the atypical cases of construction in the natural language are common in the corpus) and are analyzed. Therefore, if a construction is observed in a construction cell, it must be reflected in the corpus dictionary.

An existing word formation dictionary will help you to know how and by what means a word is formed. For example, we can see that five new words are formed from the word *amal*, and five other new words are formed from this new word:

$$
amal \rightarrow
\begin{vmatrix}
amal\text{-}\textbf{dor} \rightarrow amaldor\text{-}\textbf{lik} \\
amal\text{-}\textbf{iy} \rightarrow \begin{vmatrix} amaliy\text{-}\textbf{ot} \\ \textbf{g'ayri}\text{-}amaliy \end{vmatrix} \\
amal\text{-}\textbf{la} \\
amal\text{-}\textbf{parast} \rightarrow amalparast\text{-}\textbf{lik} \\
\textbf{be}\text{-}amal \rightarrow beamal\text{-}\textbf{lik}
\end{vmatrix}
$$

The following information can be obtained from this hive above. The basis for the formation of a new word is the *word-forming basis*, which serves as the basis. The above action word is the constructive basis for the five words that come from it. In turn, these words serve as a constructive basis for subsequent construction. The word that comes from the constructive basis is the artificial word. The five words formed from the word *amal* and the subsequent construction are examples of this.

There are various means by which a word is formed. They can be in the form of additions or words. Such a tool is given in the dictionary in bold form. The sum of the constructive base and the constructive word form the construction nest. In the dictionary, the construction box for each word is highlighted [3]. The textbook is also characterized by: 1) The verb is given in the form of a command (stem), not in the form as in traditional dictionaries, that is, in the form of an action noun:

lov $\rightarrow$ lov-**illa,** moyil $\rightarrow$ moyil-**lan,** ayni $\rightarrow$ ayni-**ma** каби;

2) the lexical form prefixes that precede the word-formative suffix are separated and given in bold::

$$
maqta \rightarrow
\begin{vmatrix}
maqta\text{-}n\text{-}ar\text{-}\textbf{li} \\
maqta\text{-}n\text{-}\textbf{choq} \\
maqta\text{-}r\text{-}\textbf{li}
\end{vmatrix}
$$

3) The homonymous words are marked with a Roman numeral and their meaning is explained:

band I *(mashg'ul)* $\rightarrow$ band-**lik** *(mashg'ullik)*

$$
band\ II\ (dasta) \rightarrow
\begin{vmatrix}
band\text{-}\textbf{li} \\
band\text{-}\textbf{lik}\ (dastalik,\ soplik);
\end{vmatrix}
$$

4) the dictionary contains constructions mainly by affixation method; 5) The origin of the phenomenon of sound change is not specified in the «Vocabulary of the Uzbek language»:

bo'ya $\rightarrow$ bo'yo-**q,** ot *(ism)* $\rightarrow$ at-**a** $\rightarrow$ ato-**q** $\rightarrow$ atoq-**li** kabi.

The dictionary contains 3257 primitive words (word formation nests), of which 9443 artificial words are formed. So you can see that this dictionary makes an average of 3 words out of 1 word. Of course, the dictionary does not cover all words in Uzbek. Only the most active - words that are understandable to schoolchildren - are reflected in the dictionary.

Conclusions and suggestions

Taking into account the structure of the dictionary article and the capabilities of the electronic dictionary, the following recommendations were developed for the formation of the structure of the corpus dictionary:

firstly, a word-formation dictionary published in 2009 will be selected as the basis for the word-formation dictionary for the Uzbek language educational corpus;

secondly, the structure of word formation: the basis of formation, the means of formation are highlighted;

thirdly, each word-formation box is given information about the type of construction;

fourthly, cases of atypical word formation are also explained; such a feature is highlighted;

fifthly, the state of construction of the phrase: the basis of construction, the means of construction and the construction are indicated;

sixthly, in the paper dictionary, it is mainly made by the affixation method. Depending on the capacity of the corpus, a syntactically derived word from the base of the corpus and a link to its context are given.

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THE STRUCTURAL CHARACTERIZATION OF MEDICAL SYNONYMIC TERMS IN ENGLISH
(based on the scientific articles in the field of dermatovenereology)

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Annotasiya. Ushbu maqola dermatovenerologiyada klinik ko'rinishni tavsiflovchi ilmiy matnlarni tahlil qilish bilan tibbiyot sohasidagi sinonim atamalarning tarkibiy xususiyatlarini ochib beradi. Maqolada tarkibida haqiqiy sinonimlar va eponim sinonimlar mavjud bo`lgan, ikki, uch, to'rt, besh, olti, etti komponentli sinonimik qatorlarda ifodalangan tibbiyot terminlari tahlil qilingan.

Kalit so`zlar: tibbiy sinonim atamalar, sinonimik qatorlar, teng iboralar, eponim terminlar.

Аннотация. Настоящая статья раскрывает структурные особенности терминов-синонимов в области медицины с анализом материала научных текстов, описывающих клинические проявления в дерматовенерологии. В данной работе исследуются медицинские термины, выраженные двух-, трех-, четырех-, пяти-, шести-, семикомпонентными синонимичными рядами, имеющими в своем составе как собственно термины-синонимы, так и эпонимические термины-синонимы.

Ключевые слова: медицинские термины-синонимы, синонимичные ряды, равнозначные выражения, термины-эпонимы.

Abstract. The paper reveals structural features of synonymic terms in the field of medicine analyzing scientific material, describing clinical events in dermatovenereology. In the given work medical terms are investigated as synonymic rows of two, three, four, five, six and seven components, consisting of both absolute synonymic terms and eponymic synonymous terms.

Key words: medical synonymic terms, synonymic rows, equal meanings, eponymic terms.

Introduction. Like any science, medicine is represented by countless terms. This terminological diversity is primarily due to the fact that medicine is divided into different branches, each of which is characterized by certain concepts. So, in cardiology there are such terms as angina pectoris, cardiac asthma, asystole, cardiocentesis, cardiopathy, cardiospasm; in gynecology, there are such concepts as adnexitis, amenorrhea, menorrhagia, oophoritis, salpingitis, vaginitis; in dentistry, terms such as stomatitis, odontorrhagia, odontalgia, odontoma, dentition, adamantinoma are used. In addition, many medical terms are represented by synonyms, and in some cases the number of synonymous terms reaches seven rows.

The purpose of this article is to determine the structural features of medical synonymous terms based on the material of scientific texts in the field of dermatology and venereology.

Literature review. Many scientists have dealt with the problem of synonymy, but even now this topic remains relevant and controversial. M. V. Nikitin believes that "... the problem of synonymy is one of the eternal problems of linguistic semantics, which do not receive a generally accepted solution, despite the incessant efforts as to theoretical understanding phenomenon, and the practical compilation of dictionaries of synonyms "[3]. V.D. Chernyak asserts, "... the lexical system is a complex interaction of various lexical groupings, while synonymous connections penetrate the lexical system, mating and intersecting with other types of relations of lexical units. All the key questions of the systemic characteristics of words in one way or another come into contact with problems of synonymy, which determines the complexity of their study "[4]. The study of synonyms of terms is even more difficult. So, S. V. Grinev Grinevich says that "... scientific speech is intended to convey information, therefore, stylistic neutrality is considered as a sign of the term. Even a slight difference in those close to the meaning of the words indicates different terms. If the terms denote the same concept, then, as a rule, they are absolutely equivalent in meaning "[1].

Indeed, many scientists believe that terminological vocabulary should be expressed only in precise informative concepts that are absolutely clear to a narrow circle of users, in this case, medical specialists. However, do not underestimate the work of medical scientists who have made a huge contribution to the development of medicine, which is why many medical terms have acquired eponymous synonyms. Most of the synonymous terms we study are common phrases, which is explained by the constant development of science. Many pathological conditions are studied in more detail, the latest methods of diagnosis and treatment are used, therefore, clinical manifestations are described more accurately and fully, therefore synonymous series appear with clearer definitions reflecting the essence of the disease.

Research methodology. From a methodological point of view, it is inseparable from the issue of complex, multi-parameter connections of language, thought and reality. In a practical aspect, the study of this problem is determined by the urgent need for a systematic representation and description of terminological units of the language in various fields of knowledge.

The methodological, theoretical and practical significance of the study of the meaning and meaning of terminological units of various branches of science makes it relevant to study the semantic volume of terminological units and, on the basis of this, their standardization, ordering and classification. So, for example, the insufficient development of the principles of classification and systematization of terms, directly related to the lack of documentation governing the ordering and approval of terms as normative, continues to remain a serious obstacle in the exchange of scientific information in various fields of medical knowledge.

Analysis and results. In our article, we consider 249 medical terms in the field of dermatology and venereology, 131 of which are represented by two-digit expressions, 76 - three-digit, 32 - four-digit, 5 - five-digit, 3 - six-digit, 2 - seven-digit.

When studying synonymous terms on the material of scientific texts in the field of dermatology and venereology, we distinguish a large number of terms that have two equivalent expressions. The analysis of the studied units allows them to be divided into

several groups. To the first group of two-digit expressions, we refer to the actual synonyms denoting clinical manifestations. For example:

aingum - spontaneous dactylolysis, acanthosis nigrans - pigment-papillary skin dystrophy, acariasis - carodermatitis, vesiculitis - spermatocyetitis, vesiculopustulosis - staphylococcal ostioporitis, hemosiderosis - pigmented hemorrhagic dermatosis, hyperpigmentation - hyperchromia, carotenoderma - aurantiasis,	dermatofibroma - histiocytoma, keratoderma - palmar-plantar keratosis, solar keratosis - actinic keratosis, lupus erythematosus - erythematosis, hibernoma - granular cell lipoma, lichenification - lichenization, hair deprive - hair keratosis, sebaceous nevus - adenomatous nevus, complex nevus - dermoepidermal nevus, onychomadesis - onychoptosis.

In medicine, the connection between science and humans is especially clearly traced, since any clinical manifestation is established, observed and described by a scientist-doctor. Thus, each pathological process is directly related to its researcher. Therefore, in the second group of two-digit expressions, we consider synonymous terms in which one of the components is expressed by an eponymous term. Let's illustrate this phenomenon:

Iris disease - actinic cheilitis, Hippel-Lindau disease - cerebrospinal angiomatosis, Goltz syndrome -focal skin hypoplasia, Dercum disease - painful lipomatosis, Kazabach Merritis syndrome - hemangiomohemorrhagic syndrome, Cowden syndrome - multiple hamartoma and neoplasia syndrome, Kenen's tumor - periungual fibroma, Riehl's melanosis - toxic melasma, Abrikosov's myeloblastoma - granular cell myeloblastoma, Blue nevus - blue nevus Jadasson-Tiche. In the third group of two-digit expressions, we give examples of eponymous synonymous terms in the field of dermatovenereology:	Behcet's disease - aphthosis of large Touraine, Darier's disease - follicular dyskeratosis Darrieus keratoderma of Papillon-Lefebvre - Papillon-Lefebvre syndrome, keratoderma disseminated Buschke-Fischer-Brauer - keratosis point disseminated Buschke-Fischer - keratoderma disseminated by Buschke-Fischer, keratoderma leukemia - Flegel's disease, follicular and parafollicular keratosis Kirle - Kirle's disease, pityriasis versicolor Deverji - Deverji's disease, achromic incontinence Ito - hypomelanosis Ito, sarcoma multiple idiopathic hemorrhagic Kaposi - Lassvaeraisquerais sarcoma - Kaposi's sarcoma.

In the next stage of our research, we classify three-part synonymous series of medical terms in the field of dermatology and venereology. The first group of three-valued expressions is represented by synonymous terms themselves:

persistent symmetric acrocyanosis - essential acrocyanosis - idiopathic acrocyanosis, arachneidism - arachnidism - cutaneous arachnoidism, argyria of the skin - argyrosis - argyria, hemangioma - angioma - vascular nevus, pyogenic granuloma - botryomycoma - telangiectatic granuloma,	dermatomyositis tropical - pyomyositis tropical - phlebitis tropical primary, ichthyosis - diffuse keratoma - sauriasis, ichthyosis epidermolytic - hyperkeratosis epidermolytic - erythroderma ichthyosiform bullous, candidiasis - candidiasis – moniliasis;

In the second group of three-component synonymous series, we distinguish concepts that have one term-eponym in their composition.For example:

Abta-Letterera-Siwe disease - reticulohistiocytosis - lipogranulomatosis, acropathy ulcerative-mutilating hereditary familial - sensory radicular neuropathy hereditary - Thevenar syndrome, angiomatosis hemorrhagic hereditary - Randu-Osler disease - teleangiectasia, hereditary hemorrhagic syndrome; Andogan syndrome - dermatogenic cataract - atopic cataract.

Conclusion. The analysis of medical synonyms in the field of dermatology and venereology leads to the following conclusions.

1. Most of the studied synonymous terms are represented by two-digit expressions and make up 53%.

2. A significant number of analyzed lexical units are three-component synonymous terms (31%).

3. A sufficient number of synonymous terms (13%) are expressed in four-component synonymous series.

4. The investigated clinical terms have five-, six-, seven-component synonymous series.

5. More than half of the considered examples are medical synonyms that include one or more components represented by eponymous terms (54%).

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BORROWED WORDS FROM FRENCH TO ENGLISH LANGUAGE

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Annotatsiya - Bugungi kunda biz ishlatadigan fransuzcha so'zlarning aksariyati Angliya Normanlar tomonidan bosib olingan 1066 yilga to'g'ri keladi. Angliya fransuzlar tomonidan qabul qilingandan so'ng, mamlakat o'sha paytdagi rahbar Uilyam Fath ta'siriga tushdi. Keyinchalik, fransuzlar iliq kunlarni o'tkazish uchun mamlakatni tark etishganda, ularning tili ancha saqlanib qoldi. Fransuz va ingliz tillarining o'xshashliklari sizning qiziqishingizga ta'sir qilishi mumkin va qancha so'zlar kesilganini tushunganingizdan so'ng, siz allaqachon fransuz tilini yaxshi bilganingizni payqashingiz mumkin. Ko'pincha, imlo ingliz va fransuz so'zlari o'rtasidagi asosiy farq bo'lib, fransuzcha aksentdan foydalanganda siz fransuzcha so'zni mahalliy odamga muvaffaqiyatli etkazishingiz mumkin.

Kalit so'zlar: o'zlashtirilgan so'zlar, leksik-semantik xususiyatlar, iboralar, frazeologik birliklar.

Аннотация - Большинство французских слов, которые мы используем сегодня, восходят к 1066 году, когда Англия была завоевана норманнами. После того, как Британия была принята французами, страна попала под влияние тогдашнего лидера Уильяма Фата. Позже, когда французы уехали из страны, чтобы провести теплые дни, их язык во многом сохранился. Сходство между французским и английским может повлиять на ваш интерес, и как только вы поймете, сколько слов вырезано, вы можете заметить, что уже хорошо знаете французский! Часто правописание является основным различием между английскими и французскими словами, и когда вы используете французский акцент, вы можете успешно передать французское слово местному жителю.

Ключевые слова: усвоенные слова, лексико-семантические особенности, словосочетания, фразеологизмы.

Abstract - Most of the French words we use today date back to 1066, when England was conquered by the Normans. After Britain was adopted by the French, the country came under the influence of the then leader William Fath. Later, when the French left the country to spend warm days, their language was much preserved. The similarities between French and English can affect your interest, and once you understand how many words are cut out, you may notice that you already know French well! Often, the spelling is the main difference between English and French words, and when you use a French accent, you can successfully convey the French word to a local person.

Key words: mastered words, lexical-semantic features, phrases, phraseological units.

Introduction. It is impossible to imagine a language that would not contain foreign language borrowings. So, in the English language there are many words that came from Ancient Rome, Greece, Italy, Spain, Germany and France. Many of them assimilated and acquired a completely British appearance. Others, despite their superficial similarity, sound according to English pronunciation standards.

Borrowing of words from other languages has occurred, is and will occur at all times and in the languages of all peoples. The process of borrowing words is a normal phenomenon, and in certain historical periods it is even inevitable. Mastering foreign language vocabulary enriches the vocabulary of the receiving language.

Literature review. Probably no one will argue if I say that no language in the world lives an absolutely isolated life. All of the world's languages are constantly influenced by other languages and cultures. Remember how many new words have been borrowed from English into Russian lately: upgrade, quilt, franchise, drive, google and many others. In connection with the socio-historical conditions, the development of European society developed in such a way that until the 20th century, mainly from the French language, the largest number of borrowings was taken.

It is the English language that has undergone a particular influence in the process of borrowing from the French language in the course of its historical development. Thus, French borrowings are of particular interest for research.

The relevance of this work is determined by the fact that the borrowing of words from one language to another is a constant phenomenon. Borrowings make up a significant percentage (75%) of the vocabulary and present a certain difficulty for learners of English.

Analysis and Results. Rules for reading French loanwords in English

Through my hands-on research, based on Daniel Jones's undeniably authoritative Pronunciation Dictionary, I have identified a few basic rules for reading French loanwords.

Vowel combination

The letter combination ou reads as [u:] - troupe [tru: p] (troupe), routine [ru: ti: n] (routine).

The letter combination au, eau is pronounced as [əʊ] - chauvinism ['vinizm] (chauvinism), eau-de-cologne | ˈəʊdəkəˈləʊn | (cologne), au naturel [əʊna: tju (:)' rel] (in kind).

Letter combinations "eau", "au" give the sound [o]: beaucoup [boku], auto [oto].

The letter combination ie reads as [i:] - grief [gri: f] (sadness).

Combining vowels with consonants

The letter combination "oi" gives a semi-vowel sound [wa]: trois [trwa].

The letter combination et, uet reads as [ei] -cachet ['kæʃei] (imprint), roquet [' rəʊkei].

A number of words ending in –er are also pronounced with [ei] - foyer | ˈfɔɪeɪ | (foyer).

The letter combination eur reads as [ɜ·:] in the stressed position-coiffeur [| kwɒˈfjɜ·: | (hairdresser).

The letter combination ier in the stressed position is pronounced as [iə] - chiffonier [ʃifə'niə] (chest of drawers).

The letter combination ier with a vowel or consonant in the stressed position is pronounced as [eə] -boutonnier [bu: tən'jeə] (boutonniere).

Combination of consonants

The letter n in combination with a consonant is usually read as [ŋ] –char-a-banc [ʃærʊbæ ŋ] (sharaban).

The doubled consonant ll between i and other vowels is not usually pronounced –maquillage [mæki: a: ʒ] (makeup).

Ch is pronounced as [ʃ] - parachute ['p rəʃu: t] (parachute).

Vowels

The vowel at the end is long if the word ends in a dumb e - mousline ['mu: sli: n] (muslin).

The same happens if the word ends with the unpronounceable consonant nougat ['nu: ga:] (nougat) or the combination of letters n and the consonant gourmand [' gʊəma: ŋ] (gourmet).

The accented e (è, é, ê) is pronounced [ei] - née [nei] (nee). If there are two letters é in one word, then the first (most often it is stressed) is usually read as [e], and the second as [ei] - émigré ['emigrei] (emigrant).

In an unstressed position, é can retain its usual pronunciation - écarté [ei'ka: tei] (ekarté).

The letters e and a in combination with m, n, followed by a consonant, are classically nasal —entente [a: n'ta: nt \ ã] (agreement). In modern language, in most cases, another pronunciation is indicated: [a: n'ta: nt].

Consonant letters

The letter g [ʒ] stands for genre [ʒa: ŋr] (genre).

In combination with n, the letter g is not pronounced - mignon ['minj ã ŋ]. Once this word was pronounced with an accent on the second syllable.

The letter j [ʒ] is jabot [ʒæboʊ] (jabot).

The letters h, s, t at the end of a word are not readable - esprit ['espri:] (spirit), debris [' deibri:] (ruins), plat [pla:] (dish).

The letter h at the beginning of the word is not pronounced - hors d'oeuvre | ɔːˈdɜːvr | (appetizer). So we read honor as [ɔːnə], many people pronounce hotel as [oʊ'tel], not [hoʊ'tel].

Discussion. The assimilation process is, of course, continuous and continues at the present time. This can be seen in the example of words such as massage, repertoire, plateau. If in one dictionary, published in the second decade of the 20th century, the variants [mas-sahzh], [ra-per-twar], [plah-to] are given, then in the other, | ˈmæsɑːʒ |, | ˈrepətwɑː |, | ˈplætəʊ |.

There was a transfer of stress from the last syllable, which is typical for the French language, to the third syllable from the end (if the word is two-syllable, then the second syllable is stressed from the end).

Some vowels also adjust to English norms. The word protégé | ˈprɒtəʒeɪ | sounded like [pro-ta-zha]. If earlier the word duel sounded like | ˈduːəl |, it is now more commonly used | ˈdjuːəl |. The word debut, pronounced [da-boo] | ˈdeɪ'buː |, became | ˈdeɪbuː | or | ˈdeɪbjuː |. And the phonetic sounds of the word elite | iˈliːt | and [ˈelit] clearly supplant [eiˈli: t]. The changes also affected consonants. Now quite usable |

ˈfjusilidʒ | instead of | ˈfjuːzilɑːʒ | - fuselage (fuselage) and | ˈævəlɑːntʃ | instead of the traditional | ˈævəlɑːnʃ | -avalanche (avalanche, landslide).

Changes are also taking place in the spelling. The words debris (fragments), repertoire (repertoire) have long spent their superscript. Lose them and other words in newspaper lexicon, in computer programs, for example, elite, regime, debacle. Many dictionaries give both spellings, with the first one without the superscript as the more common one. The words char'a-banc and entr'acte have become charabanc, entracte; the word ceremonie has long been a ceremony.

Naturally, the assimilation process is complex and contradictory. If at the beginning of the 20th century. the words champagne (champagne) and champaign (space) were phonetic homonyms, but today the first has retained its original sounding | ʃæmˈpeɪn |, and the second began to be pronounced as | tʃæmpeɪn |.

There are compound words in which one part is French and the other is English, for example: crochet-hook | ˈkrəʊʃeɪhʊk | (crochet hook), au pair [ˌəʊ'peə] (a young foreigner, especially a girl who lives in a family and does light work around the house, usually for the purpose of learning the language - an au pair girl).

Some words have become homographs: buffet ['b ^ fit] (buffet, diner) and [bʊfei] (cupboard); routed ['ru: tid] (set off) and [' raʊtid] (fled). At the time of Shakespeare, the word journey, derived from the French journee, meant a day trip, and now it means travel in general.

A considerable number of words borrowed from French are still perceived as foreign both in appearance and in pronunciation.

Conclusion. Communicating with teachers of the English language, reading the works of foreign writers, studying educational methodological complexes in the subject, I came to the conclusion that it seems necessary to formulate the rules for reading such words, since they present a certain difficulty in pronunciation. Naturally, transcription helps to read such words, but this is not a sufficiently effective tool for active language learning.

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USE OF COMPUTER TECHNOLOGY IN FOREIGN LANGUAGE LESSONS

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Annotatsiya. Maqolada darsda foydalaniladigan axborot vositalari, kompyuter texnologiyalari, chet tillarini o'rganish davomida qo'llash mumkin bo'lgan faol innovatsion texnologiya va jarayonlar haqida ma'lumotlar keltirilgan. Shu bilan birga xorijiy tillarni o'rganishda qo'llash mumkin bo'lgan metodlar haqida ham ma'lumotlar mavjud. Bundan tashqari chet tillarini o'qitishda bu texnologiyalarning tutgan o'rni haqida ham ma'lumotlar keltirilgan.

Kalit so'zlar: axborot vositalari, kompyuter texnologiyalari, faol innovatsion texnologiya va jarayonlar, chet tillarini o'qitish, elektron manbalar, pedagogika.

Аннотация - В статье представлена информация о средствах массовой информации, используемых на уроке, компьютерных технологиях, активных инновационных технологиях и процессах, которые могут быть использованы при изучении иностранных языков. Также есть информация о методах, которые можно использовать для изучения иностранных языков. Также есть информация о роли этих технологий в обучении иностранным языкам.

Ключевые слова: медиа, компьютерные технологии, активные инновационные технологии и процессы, обучение иностранным языкам, электронные ресурсы, педагогика.

Abstract. The article provides information about the media used in the lesson, computer technology, active innovative technologies and processes that can be used in the study of foreign languages. There is also information on methods that can be used

to learn foreign languages. There is also information about the role of these technologies in foreign language teaching.

Key words: media, computer technology, active innovative technologies and processes, foreign language teaching, electronic resources, pedagogy.

Introduction. The psychological features that should be taken into account when conducting person-centered education:

A distinctive feature of the methodology is the mandatory consideration of the individual choice of the student to the composition, type and form of learning materials, motivation, the desire to use the acquired knowledge on their own, in situations not provided for in the lesson.

By constantly monitoring each student performing a variety of learning activities, the teacher collects a database of personal "profiles" that vary from class to class.

The important and significant point is the need to put the student at the center of the learning process, make it an active topic of the doctrine, regulate the interaction with other students, give a real, practical direction to the learning process.

Literature review. Today, schools are equipped with modern computers, electronic resources, the Internet. This will help to introduce new pedagogical technologies, for example: information and communication, computer and multimedia technologies, which are closely related to each other.

Implementation of information technology will create the necessary conditions to accelerate the learning process in the school. Computer technology helps to discover, preserve, and develop students 'personal qualities.

Historically, pedagogy has always used the media (means of storing, processing and transmitting information) in its activities; improving them increased the effectiveness of the sessions. Therefore, the use of computers as the most modern media in the study of educational sciences, the use of books, fountain pens, televisions, calculators, VCRs, etc., naturally leads to the improvement of the educational process. The development of computers and software has facilitated evolution for even the most unprepared users, including preschoolers.

Analysis and Results. The importance of computer technology in English lessons.

1) What does computer technology give to the school?

For students. Different techniques increase interest in the study of science, making the cognitive process more attractive. The use of computers allows closed students to be free and share their knowledge with others, increase independence in the learning process, develop creative skills, increase communication and culture, and develop speech. It provides an opportunity to participate in various contests, quizzes, contests, projects.

For teacher. Solving new methodological problems, deepening knowledge in science will increase his professional level. Increases prestige among students, colleagues, parents. Collaborating with other science teachers (co-authoring of subprograms for lessons and lessons) activates the process of collaboration (extracurricular activities) the computer allows you to create a basis for monitoring the effectiveness of student activities, which allows the teacher and student allows you to

monitor. The computer allows you to create more customized test assignments, independent and control work [10].

The scale of the use of computers in the learning process is enormous: from testing children to identifying them to personal characteristics before the game. At the same time, the computer is a powerful tool for increasing learning efficiency. Teachers have never received such a powerful teaching tool.

Computer significantly expands the possibilities of providing educational information. The use of color, graphics, sound, modern video technology allows you to simulate different situations and environments [9].

The computer allows you to increase the motivation of the child. Not only the novelty of working with a computer, but also the ability to regulate the presentation of learning tasks according to the level of difficulty, contributes to the growth of interest in reading, rapid stimulation. The right decisions have a positive effect on motivation [8].

Discussion. One of the sources of motivation is fun. The possibilities of a computer are endless. The computer allows you to significantly change the way you manage learning activities. Immerse students in a specific game situation, give children the opportunity to ask for a specific form of help, install learning materials using pictures, graphics, etc. In the implementation of information technology, any coercion and suppression of the child's desires should be suppressed [7].

It is possible and necessary to use a computer in the classroom; it helps to increase the interest in reading, its effectiveness and develops the child in all respects. Computer programs engage children in developmental activities, forming knowledge and skills of cultural significance [1]. Developmental effectiveness depends on the design of the program, its access to the child, its level of development, and interest. Computer technology can help your child solve visualization (mediation) and play-based knowledge and creative tasks at this age.

Today, computer technology can be considered as a new way of transferring knowledge that corresponds to a qualitatively new structure of teaching and development of the child. This method allows the child to read with interest, find sources of information, increase independence and responsibility in acquiring new knowledge; develop the discipline of intellectual activity [2].

A creative teacher can use the power of computer technology to achieve a variety of goals:

1. Formation of new knowledge and concepts
2. Development of practical skills and activities
3. Repetition and generalization of the studied material
4. Encourage students to learn
5. Form the necessary personal qualities

The use of information technology is possible not only in specialized integrated classes, but also in ordinary English classes at different levels of preparation of school students [3].

The inclusion of computer technology in a traditional lesson plan allows the teacher to transfer part of their work to a personal computer, while at the same time

making the learning process more interesting, diverse, and intensive. The computer does not replace, only fills the teacher [4].

Using a computer allows you to make any lesson attractive and truly modern. Performing any task, computer-assisted exercises provides an opportunity to increase the intensity of the lesson. The use of flexible materials and different work modes helps to individualize the sessions [5].

The computer can be used at all stages of teaching: explaining new material, combining, repeating, controlling knowledge, skills. In addition, for the child, it performs a variety of functions: teacher, work tool, learning object, collaborative team, and play environment [6].

Conclusion. For the effective use of multimedia technologies it is necessary to create conditions that ensure the formation of social and cognitive activity as the main personal characteristics of the student. Programs should be interactive to develop students' independence.

It should be noted that the use of multimedia technologies cannot provide significant pedagogical effect without a teacher, because these technologies are only teaching methods, the effectiveness of which requires the teacher to carefully study all the possibilities and use them to achieve specific pedagogical goals, depending on the use.

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MODERN METHODS OF TEACHING RUSSIAN

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Annotatsiya: Maqola aqliy xususiyatlari va ta'lim muhiti jihatidan farq qiluvchi ko'plab o'quvchilar guruhlarini o'qitish, o'quvchilarning tabiiy qobiliyatlarini to'liq anglaydigan, ularni rivojlantiradigan va sohada bilim beradigan o'qitish usullarini yaratishni o`rganadi. Bunday pedagogik vazifani bajarishda asosiy maqsad - bu rus tilini chet tili sifatida o'qitish usullarini tanlash va ularning samaradorligini tekshirish muammosidir.

Kalit so'zlar: tabaqalashtirilgan yondashuv, eskirgan ta'lim tizimi, yangi usullar, rus tilini o'qitish, noan'anaviy tarkib, samarali o'qitish usullari, mavzuga qiziqishni oshirish.

Аннотация: В статье говорится, что обучение многочисленных групп учащихся, различающихся по психическим характеристикам и среде обучения, требует поиска таких методов обучения, которые наиболее полно раскрывали бы природные способности учащихся, развивали их и давали знания в данной области. иностранного языка. Основным принципом решения такой педагогической задачи является проблема выбора методик обучения русскому языку как иностранному и проверки их эффективности.

Ключевые слова: дифференцированный подход, устаревшая система образования, новые методы, обучение русскому языку, нетрадиционное содержание, эффективные методы обучения, повышение интереса к предмету.

Annotation: The paper is that the teaching of numerous groups of students, differing in mental characteristics and the environment of education, requires the search for such teaching methods that would most fully realize the natural abilities of students, develop them, and give them knowledge in the field of a foreign language.

The main principle in achieving such a pedagogical task is the problem of choosing methods of teaching Russian as a foreign language, and testing their effectiveness.

Key words: differentiated approach, the outdated education system, new methods, teaching Russian, non-traditional content, effective teaching methods, increasing interest in the subject.

Introduction. All modern methods of teaching foreign languages can be conditionally combined into two large groups, differing in initial premises and based on the experience of teaching foreign languages either through intuitive assimilation in the process of communication ("communicative" methods), or through the conscious assimilation of the rules of the language, its lexical and grammatical building (traditional methods). Meanwhile, the problem of effective teaching foreign languages is more acute today than ever.[1]

Literature review. Is there a best or universal method? There are no generic methods. The well-known Russian linguist and academician L.V. Shcherba adhered to this point of view.[2] Each method has something valuable that needs to be used, but it is hardly possible in history to find cases where new methods could completely solve an existing problem. All methods differ in the nature of the student's cognitive activity and the organizing activity of the teacher. Even the creator of the method himself cannot fail to notice that the difference between individual students is great, and sometimes it is fundamental for the effectiveness of the method.[3] One person differs from another in his natural properties (age, inclinations) and peculiarities of cognitive and speech activity, personal characteristics, context of activity, interests, social status. On the other hand, each method undergoes changes depending on the personal qualities of the teacher, on his strengths and weaknesses, strengths and weaknesses. All this must be taken into account for effective interaction in the learning process.

It should be borne in mind that no method gives a direct educational result. At first, the application of the method stimulates a certain educational activity of students, and only then, as a result of this activity, students develop the appropriate knowledge and methods of activity.

Research methodology. The choice of methods requires knowledge of the capabilities and limitations of all existing methods of teaching foreign languages, understanding which tasks and under what conditions are successfully solved using certain methods, and for which tasks they are useless or ineffective. This implies knowledge of the psychological aspects that underlie the assimilation of linguistic means, operations and actions with them, providing verbal communication. The teacher needs to understand that the answer to the question "How to teach?" naturally follows from who he teaches, what and why. In this regard, he must know the age and individual characteristics of his students, their level of development and interests, goals and plans for the future, as well as the possibilities of developing their abilities to master a foreign language.[4] It should not be forgotten that the learning process is always a creative process, both on the part of the teacher and on the part of the student, individual and unique in each specific case. That is why in modern pedagogy the development of the creative abilities of students, their ability to active cognitive activity is brought to the fore.

The problem of teaching foreign languages requires a systematic analysis of speech-thinking activity from psycholinguistic, linguistic, psychological positions.[5] The methodology and didactics of teaching foreign languages is looking for modern answers to the questions of what to teach and how to teach, based on research that analyzes the relationship between language, speech and thinking, thinking and communication, communicative and cognitive in speech.

What should be considered when choosing methods of teaching foreign languages?

a) Learning objectives.

The majority of foreign students who begin to study Russian seek to learn how to speak it, pursuing different goals: some want to continue their studies in Russian in their chosen specialty, others work as translators of the Russian language, and still others, by the nature of their activities, must enter into business communication with Russians and conduct official correspondence with them. The purpose of the teaching largely determines the teaching methods. When starting to teach the Russian language, it is necessary to clearly imagine life situations and forms of communication in which those who wish to use the Russian language want to be. If the teacher is deeply aware of the goal of teaching, effective ways to achieve them will be found. The modern methodology sees the concept of the goal of learning in the ability to use a foreign language in a real communication situation in order to achieve an understanding of the communicants.[6]

b) The dichotomy of language and speech in teaching foreign languages.

As can be seen from the above, already in the discussion of what to teach - language or speech actions - both the fundamental problems of the general theory of learning and no less fundamental problems of psychology and psycholinguistics are raised. Many linguists believe that the difference between language and speech is of an absolute nature, that they are "different things" (F. de Saussure), others consider it to be different manifestations of one essence. Language and speech are not different phenomena, but different sides of one phenomenon. All linguistic units are units of language and speech: on one side they are turned to language, the other to speech. Language, according to MK Kabardov [1], is learned through analysis, speech - through perception and understanding.

"Comparison of language and speech, which is important for the problem of learning foreign language and, accordingly, for highlighting the parameters of language and speech abilities as relatively independent types of abilities, can be found in a number of major domestic and foreign linguists."[7]

The question of the relationship between language and speech is of fundamental importance for the analysis of methods of teaching foreign languages and for finding an effective method.

c) Individual - psychological characteristics of students.

Many authors noted significant individual psychological differences in the ability of students to master a foreign language. (Belyaev V.V., Zimnyaya I.A., Kabardov M.K.).[8] Moreover, developing some abilities and completely not paying attention to the development of others, each method contributes to the formation of only a limited range of skills and abilities and does not provide full mastery of all types of language

activities (speaking, listening, reading, writing) in a foreign language. "... individual methodological systems take into account psychological factors contributing to the mastery of a foreign language in different ways, they can be designated dichotomously: awareness-unconsciousness, arbitrariness-involuntariness, analyticity-synthetics (globality), visual-auditory channel of information delivery. Since these indicators can be developed unequally in individuals, this indicates the possibility of different levels of achievement per unit of time. These factors can be prerequisites for certain types of speech activity or language analysis, therefore, a different combination of these factors can largely provide an individually unique way of mastering a foreign language. This is of great importance in such a "rigid" system as an intensive teaching methodology, where certain psychological factors can predetermine the success of mastering a foreign language."[1]

Analysis and results. The structure of foreign language ability has been studied in detail in the works of M.G. Kasparova, N. S. Nazarenko, T. N. Reshetnikova, etc. It is shown that mechanical memory is not a leading component in the structure of foreign language abilities and can be compensated for by other components, for example, logical memory. The mental processes that determine foreign language abilities are:[9]

• verbal memory;

• verbal thinking:

• auditory perception;

These mental factors are the leading components in the structure of foreign language abilities. It is important to develop them at all stages of learning foreign languages. In addition to mental processes, the structure of abilities includes personal qualities of a person - emotional (impressionability, emotionality, expressiveness, etc.) and communicative qualities (the ability to enter into a conversation, convince the interlocutor, etc.). Attention to the personality of the student, proclaimed by the personality-activity approach, should be expressed in an individual approach to him. The true implementation of an individual approach lies in the choice of an individual strategy for working with a student, and this, in turn, presupposes the correct definition of his individual strategy of educational activity, as well as personal qualities that contribute or hinder the successful mastering of a foreign language. An individual style of activity is determined by a complex of abilities that develop on the basis of the natural properties of the nervous system, as well as a complex of personal characteristics and features of the emotional-volitional sphere (to a certain extent, also depending on the properties of the nervous system).

Age-old features have a significant impact on the entire educational process. These can include:[10]

• motivating children to learn Russian as a second foreign language at school;

• readiness of students to learn Russian as a means of communication;

• the need of students to use the Russian language as a means of communication;

• the interest of students to learn as much as possible about Russia;

• the ability of students to imitate sounds, pronunciation, melodies of the Russian language;

• level of memory development, etc.

Conclusion. All these features have a great influence on the effectiveness of teaching the Russian language, and, of course, are taken into account when choosing methods of teaching a foreign language at school, with individual training and in business courses. The effectiveness of using different teaching methods largely depends on its detailed elaboration for a certain stage of training, the study of a whole complex of tasks related to the level of training, the standard of education in foreign languages. The effectiveness of using a particular method in the educational process directly depends on the literate, i.e. methodically grounded its use.

The above-described features relate to what is "given" by nature, the source material with which to work. How to build the learning process so as to use the "strengths" most effectively, compensate for the "weaknesses" and help to fully master all types of speech activity in a foreign language? This is a rather difficult task, but this is the skill of a foreign language teacher.

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THE IMPORTANCE OF USING NEW PEDAGOGICAL TECHNOLOGIES IN ORGANIZING ENGLISH LESSONS

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Annotatsiya. Ushbu maqolada ingliz tili darslarini tashkil etishda yangi pedagogik texnologiyalardan foydalanishning ahamiyati haqida so`z yuritilgan. Oliy va o`rta ta'lim muassasalarida chet tilini o'rgatish juda zarur, chunki o`quvchi va talabalarni har tomonlama yetuk qilib tayyorlashda chet tilining ahamiyati katta. Hozirgi davrning dolzarb masalalaridan biri xorijiy tillarni o'qitish orqali yosh avlodni ona-Vatanga muhabbat va sadoqat, milliy g'urur, yuksak axloq va ma'naviyat, qadimiy va boy merosimizga iftixor tuyg'usi, milliy va umuminsoniy qadriyatlar ruhida tarbiyalashdir.

Kalit so'zlar: chet tili, pedagog, innovatsiya, texnologiya, metod, kommunikatsiya, dialog, kompyuter, "Debat" usuli, nutq, filologik.

Аннотация. В статье обсуждается важность использования новых педагогических технологий при организации уроков английского языка. Очень важно преподавать иностранный язык в высших и средних школах, ведь иностранный язык играет важную роль во всестороннем развитии студентов. Одна из актуальных проблем - воспитание подрастающего поколения в духе любви и преданности Родине, национальной гордости, высокой морали и духовности, гордости своим древним и богатым наследием, национальными и общечеловеческими ценностями через преподавание иностранных языков. .

Ключевые слова: иностранный язык, педагог, инновации, технология, метод, общение, диалог, компьютер, метод дебатов, речь, филология.

Annotation. This article discusses the importance of using new pedagogical technologies in the organization of English lessons. It is very important to teach a foreign language in higher and secondary education, because a foreign language plays an important role in the comprehensive development of students. One of the most pressing issues of our time is to educate the younger generation in the spirit of love and devotion to the motherland, national pride, high morals and spirituality, pride in our ancient and rich heritage, national and universal values through the teaching of foreign languages.

Key words: foreign language, pedagogue, innovation, technology, method, communication, dialogue, computer, "Debate" method, speech, philology.

Introduction. It is becoming increasingly clear that the education system of our country is undergoing significant changes. It is no exaggeration to say that learning foreign languages has become a part of human life. This requires constant research of new technologies and methods in higher and secondary education, especially in the pedagogical activities of English teachers. In the traditional way, it has become a tradition for us to present our ideas to the students in a simple way through simple oral examples.[5]

As knowledge of a foreign language is very important today, one of the most pressing issues in education is the reform of the system of foreign language teaching, the application of advanced teaching methods in the teaching process using modern pedagogical and information and communication technologies. turned.

The main reasons why educational institutions today pay special attention to the use of new pedagogical technologies in the educational process are:

- First of all, the Law "On Education" and the "National Training Program" pay special attention to the implementation of developmental education in the context of the possibility of personal development education in pedagogical technologies.

- Second, the systematic use of pedagogical technologies in the educational process allows for their widespread introduction;

- Third, pedagogical technology encourages the teacher to pre-design the technological chain, from the objectives of the educational process to the establishment of a diagnostic system and control over the process;

- Fourth, their use because pedagogical technology is based on the use of new tools and information methods;

Linguistic skills include knowing the language system and the rules to be used in communicating in English. Particular attention is paid to the socio-political development of the independent Republic of Uzbekistan, the acquisition of terms and communication skills that reflect its market economy, foreign policy development with foreign countries.

The most important areas of pedagogical and career choice are the transition of the Republic of Uzbekistan to a market economy, the expansion of international business relations, the development of new directions in the national economy. Linguistic and ethnographic skills include the knowledge of the features of a country's socio-cultural development, its history and status, and the development of speech based on them.

At present, the methodology of teaching foreign languages includes the goals and content of foreign language teaching, the laws, methods, means, ways, methods of studying and teaching the education system, as well as the use of foreign languages. is seen as a science that carries out the upbringing of birds.

It is based on a deeper knowledge of the written forms of students' speech, which requires them to express their ideas beautifully in English.

Literature review. Theoretical and methodological bases of development of teaching technologies, their introduction in educational process are reflected in scientific researches carried out by scientists of the Republic and foreign countries. In

particular, S.S.Gulamov, A.A.Abdukadirov, M.Oripov, R.H.Hamdamov, N.Toylakov, E.S.Polat, R.England, A.S.Lauzen, S.Novas, W.Souder and a number of other scientists have dealt with this issue.[10]

Research Methodology. Today, we are working with students on the basis of various slides, video tutorials, interesting puzzles and many new ideas, using the techniques of the new era, without using the same old methods of work. not only arouses their interest in science, but also helps them to keep in mind the information they receive through the eyes and ears. By using a variety of English crossword puzzles, fun exercises, and a number of interactive methods in the classroom, learners can apply what they have learned in the future.

Analysis and results. The next criterion for choosing interactive methods is their relevance to the nature of the content. The content of the method is also defined as part of the movement. It is therefore doubtful that this criterion should be taken into account. One method is to fully explain the content of the topic, while the other allows you to master it in a positive way.[4]

Another criterion for choosing interactive methods is that they are fully compatible with the learning opportunities of students, that is, to ensure the unity of internal and external conditions for effective learning activities. The use of interactive teaching methods should be tailored to the individual capabilities of the educator. The theory and practice of this educator's teaching methods take into account the degree to which the theories of cognition with the laws of the teaching process are armed with the theory of educational content and other existing laws.

The next criterion for choosing interactive methods is their compatibility with the forms of organization of the learning process. By the way, general, group and individual forms of teaching require different methods. For example, if the Debate method is a discussion between two students, the Brainstorming method requires the participation of all students in the group. The plan is to show the students pre-prepared video materials (slides, short videos, cartoons) using a video projector or electronic whiteboard, while at the same time increasing their attention to this lesson. we will have the opportunity to have a fun lesson.[9] Then we can use a variety of motivational methods to ensure that students remember the lesson until the next lesson, and a number of other interactive methods to achieve high results.

 At a time when in our country today the focus is on the education system, in the process of teaching English and the organization of lessons, teachers learn modern innovative technologies, ideas, different methods of different directions, already. the use of interactive methods, which have become a topical task today, rather than known methods, serves to form new thinking and knowledge skills of the younger generation.[3]

Modern interactive methods in foreign language teaching methods have been developed by scientists and have proven to be more effective than traditional methods. Interactive methods significantly increase the knowledge potential of the learning process compared to traditional methods. Because in interactive methods, the student thinks independently and works in partnership with the teacher. When teaching a foreign language using modern technologies, the student plans the lesson process, engages in it on the basis of the curriculum, chooses teaching methods jointly by the

student and the teacher, participate in the discussion of the study material. Students help each other.[1]

One of the current issues is to educate the younger generation in the spirit of love and devotion to the motherland, national pride, high morals and spirituality, pride in our ancient and rich heritage, national and universal values through the teaching of foreign languages. Radical reforms in the global education system raise the problem of creating the necessary conditions for students to learn foreign languages perfectly, to express themselves in all areas with knowledge of a foreign language, to develop their oral and written speech in a foreign language.

In the reform of the education system of the Republic, the coordination of curricula in accordance with international standards, based on foreign experience, became the basis for improving the system of higher pedagogical education. In the context of Uzbekistan, the radical reform of the quality of education on the basis of foreign experience, taking into account our national mentality and traditions, is a requirement of the times.[8]

Therefore, in order to form the ability to read the original literature on the specialty, to participate in oral communication in a foreign language in the process of production of future personnel and finding the necessary information for scientific purposes in the higher education system of the republic classes are being held.

Every citizen of the independent Republic of Uzbekistan must be able to read the original literature in a foreign language, understand the text and use it in their profession. In addition, he should be able to communicate freely in a foreign language with his interlocutor on a given topic. After all, learning foreign languages is a requirement of today's globalized world.[2]

In our country, thanks to independence, special attention is paid to the teaching of foreign languages. Thousands of foreign language teachers have been trained, all conditions have been created for the staff to improve their skills in our country and abroad, multimedia textbooks in English, German and French, electronic resources for learning English have been prepared. The organization of language rooms is a clear proof of this. The main goal is to create conditions for young people to use the achievements of world civilization and information resources around the world, to develop international cooperation and dialogue, based on the education of the younger generation in foreign languages and the training of specialists who are fluent in those languages.[7]

Conclusion. Upon graduation, students are required to be able to receive, comprehend, and express their ideas orally and in writing, both orally and in writing. In higher education institutions that do not specialize in languages, the number of teaching hours is given in the curricula of those institutions. In non-philological educational institutions, foreign languages are taught on the basis of special curricula. Since such programs and textbooks have not yet been developed for our English special non-philological educational institutions, teachers in such Uzbek-language educational institutions use a variety of textbooks and manuals, taking into account the specifics of the direction.

Another way to meet modern requirements is to reduce the amount of redundant material for students and simplify the learning process. These are taken into account in

the new foreign language program. The teacher approaches this in terms of students' comprehensive practical mastery of the material.

In short, it is very important to teach a foreign language in higher education institutions that do not specialize in languages, because the foreign language plays an important role in preparing students for full development. Today's information society can be described as a knowledge-based society. For example, the main activity of countries, companies and individuals is education.[6] In addition to the technologies of acquisition, processing and storage of knowledge, the technologies of teaching and transmission of knowledge are of great importance.

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MODERN PROBLEMS OF TOURISM AND ECONOMICS

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CHARACTERISTICS OF INNOVATIVE MARKETING IN THE DEVELOPMENT OF INDUSTRIAL ENTERPRISES

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Annotasiya. Ushbu maqolada Oʻzbekistonda sanoat korxonalarini rivojlantirishda innovasion marketingning ahamiyati doirasida bilimlar darajasi oʻrganilgan, shuningdek, mavjud tadqiqotlar tahlili asosida sanoat korxonalarida innovasion marketingni amalga oshirish yoʻnalishlari aniqlangan.

Kalit soʻzlar: sanoat, marketing, innovasiya, investisiya, tadbirkorlik

Аннотация. В данной статье исследуется уровень знаний в контексте важности инновационного маркетинга развитии промышленных предприятий Узбекистана, а также определяются направления инновационного маркетинга на промышленных предприятиях на основе анализа существующих исследований.

Ключевые слова: промышленность, маркетинг, инновация, инвестиция, предпринимательство

Abstract. This article examines the level of knowledge in the context of the importance of innovative marketing in the development of industrial enterprises in Uzbekistan, as well as identifies areas for innovative marketing in industrial enterprises based on the analysis of existing research.

Key words: industry, marketing, innovation, investment, entrepreneurship

Introduction. The process of economic reforms underway in our country requires a significant change in the activities of industrial sectors, adapting their activities to the requirements of innovative marketing.

As noted by the President, "... economic growth is achieved, first of all, through the creation of competitive industrial chains and increased investment in such projects. According to Harvard University, our country has all the opportunities and relative advantages in producing more than 50 industrial products, especially petrochemicals, metallurgy, mechanical engineering, electrical engineering, pharmaceuticals, construction materials, textiles, leather and footwear, food and industries related to the "green economy" have all the necessary conditions to become "drivers" of our economy" [1].

Indeed, today in our country, along with other sectors of the economy, the industrial sector is developing rapidly. In particular, in 2019, the enterprises of the Republic will spend 331.0 trillion. In comparison with 2018, the volume index of industrial production amounted to 106.6% [2].

Today, attention is paid to the modernization of industries and enterprises, technical and technological renewal. Therefore, access to world markets requires the effective use of innovative marketing technologies.

Literature review. Product competitiveness assessment issues have been the subject of active research for many years, confirming the importance of this problem for the development of enterprises, high-tech industries and the economy as a whole, which require knowledge.

Innovative marketing represents the systematic integration of the entire innovation cycle from the study of innovation market conditions, business design of an innovative project, its implementation to the market of innovation, innovation diffusion and revenue generation.

J. Shumpeter and N.D. Kondratyev are rightly the first major theorists of innovation processes. According to Schumpeter, innovation is the main source of profit: "profit is, in essence, the result of new combinations", "there is no profit without development, there is no development without profit".

"Innovative marketing strategy is defined as the commitment of enterprises to use new or significantly improved marketing methods that allow them to effectively use their resources to meet customer demand and create greater value for customers" [3].

"Innovative marketing is applied after all the other possibilities of traditional vertical marketing are exhausted. Innovative marketing then significantly transforms a product that meets a need, can be used for other purposes and situations, or appeals to other target groups of the customer" [4].

"The principle of innovative marketing requires a company or enterprise to constantly seek real improvements in its products and marketing. Organizations that ignore new and better ways of doing business lose customers in favor of their competitors and allow them to find a better way" [5].

Problems of development of modern marketing concepts, including innovative marketing concept and business restructuring based on them F. Much of Kotler's work is a general theoretical nature or devoted to solving certain aspects of the problem. Innovative marketing allows you to better meet the needs of consumers, to occupy the market by shifting the priority in modern business from "functional" products to "innovative" products. A new product involves the introduction of any innovation or change in an existing product that the consumer considers important.

In our opinion, the purpose of innovative marketing is to develop ways to increase the competitiveness of enterprises through the study, evaluation and optimization of economic development parameters

Research methodology. In the detailed coverage of this article, scientific observation, analysis and synthesis, dialogue, theoretical and empirical methods of scientific research have been widely used. Also, many local and foreign literature, modern scientific developments were used in the study of the research topic.

Analysis and results. Every year, our country carries out large-scale reforms aimed at further development of all sectors of the economy. As a result, new jobs are being created and incomes are increasing. Consistent implementation of the long-term development strategy allows Uzbekistan, among the few countries in the world, to ensure high growth rates of gross domestic product and industrial production. In particular, in 2019 the volume of gross domestic product (GDP) of the Republic of Uzbekistan in current prices will reach 511 838.1 billion sum and increased by 5.6% compared to 2018. The GDP deflator index was 119.2% of prices in 2018 [2].

According to the results of 2019, the share of GDP in the production of goods amounted to 300 304.2 billion sums, in the field of services - 165 053.2 bln. sum. The gross value added in the amount of 46,480.7 billion sum was created.

The structure of industrial production in 2019
### by major economic activities, in %

Table 1
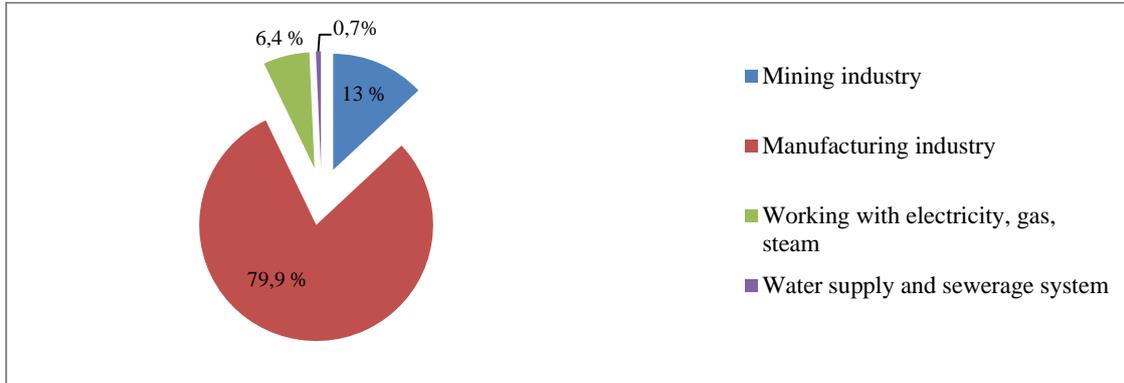
The table shows that the volume of products produced by industrial enterprises amounted to 264.4 trillion sum or 79.9% of the total industrial output. Today, as a result of diversification of industrial enterprises in the country, its export structure is growing.

We know that the metallurgical industry, food industry and light industry play a strong role in the production of industrial products. (Table 2)

The volume of industrial production in 2019, in bln. sum

Table 2
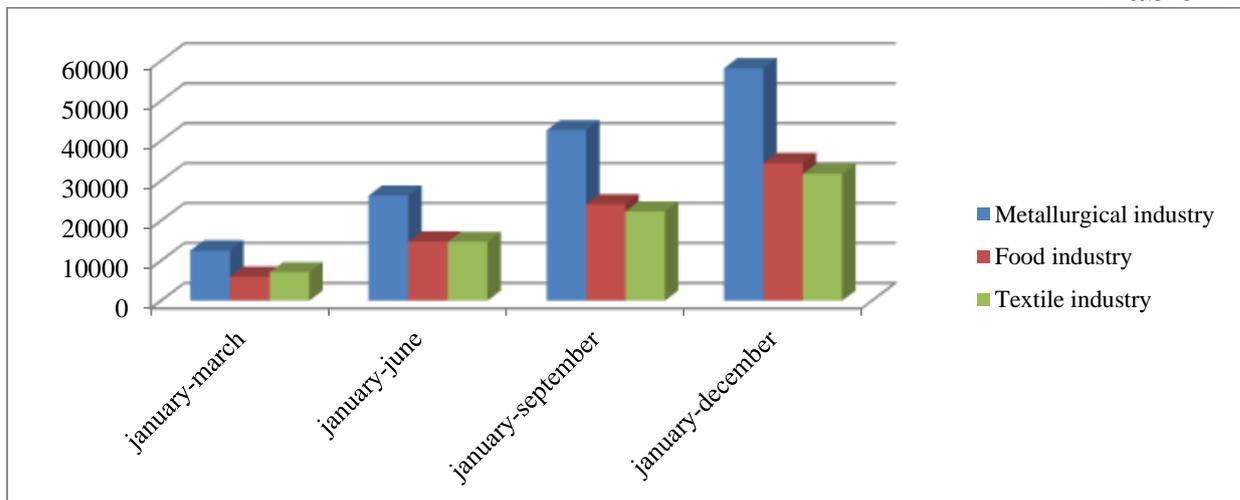
In addition, the largest share in the value added of the manufacturing industry fell to the metallurgical and metal processing industries, which accounted for 36.3%, the share of food, beverages and tobacco products - 13.8%, production of textiles, clothing, leather and leather products - 13.4%, rubber, plastic products and other mirrors - 9.7%, production of chemical products - 7.3%, vehicles, trailers, production of semi-trailers and other transport equipment - 6.2%, electrical equipment - 3.2%, coke and oil refining - 2.5% and other products of the manufacturing (refining) industry - 7,6%.

In order to further improve and ensure the safety of the production process in industrial enterprises, it is necessary, first of all, to improve product quality and adapt

to the competitiveness of domestic and global markets. Adaptation is understood as the harmony of innovation with potential individuals, the relationships they incorporate into their mental lives. It is important for potential users to know that the innovation you are offering is relevant to their lifestyle. This in turn requires any manufacturing enterprise to develop an innovative marketing strategy. Focusing on superiority in the application of innovative marketing in industrial enterprises will certainly contribute to its development. The relative superiority measure measures how well a product improves over the previous generation. Potential users will see how the current situation improves in the process of using innovative marketing will affect the development of industrial enterprises as the demand for the products produced in the enterprise will further increase. To do this, you need to do the following:

- further improving the quality of services;
- full satisfaction of product needs;
- improved interface;
- flexibility, long service life;
- expanding user capabilities;
- reduce the impact of user actions on the environment;
- increase efficiency;

To effectively implement innovative marketing, businesses need information about consumer preferences and needs, market demand, competition, distribution channels, and more. This information needs to be updated regularly as businesses operate in a dynamic environment:

- Change in technology – this change will lead to the production of new products and the implementation of new production processes.

- Changes in consumer tastes – demand for some products sometimes decreases sharply, while demand for other products increases.

- Changes in competitive products – the introduction of new competitive products or changes in pricing policy can significantly affect the demand for the product.

- Changes in the economy – the improvement or deterioration of the economic environment affects incomes at the national or regional level. This process can affect different products in different ways, for example, daily necessities and food products.

In particular, during growing Covid-19 pandemic around the world, consumer needs and consumer behavior have changed radically, making it important for businesses to use innovation in marketing strategies to maintain their position. For example, as consumers need to isolate themselves at home, firms need to focus more on developing and strengthening their online businesses through rapid marketing news.

The main conceptual aspects of innovation motivation can be cited to develop a more accurate analytical framework of the innovative marketing strategy applied by enterprises during the Covid-19 crisis (Figure 1). This parameter determines the level of impact an enterprise will experience during a crisis. If the business activity is lower than expected, the business will look for problems and seek solutions to them.

The level of innovation	Problem research	Weak research
LOW	**Sensitive strategy**	**Proactive research**
	Through this strategy, businesses can maintain their existing business by moving from offline to online	Through this strategy, new types of businesses are created using the existing customer base
HIGH	**Collective strategy**	**collaborative strategy**
	Through this strategy, businesses benefit from doing business together and thereby rebuilding their existing business	Through this strategy, businesses expand their customer base through complementary partnerships, and then acquire new types of business.

Picture 1. Innovative strategic analysis

Today, industrial enterprises suffering from the crisis of Covid-19 must choose and implement a unique marketing strategy to overcome the risks.

Sensitive strategy. In choosing this strategy, industrial enterprises need to use their existing resources and introduce marketing innovations to adapt to the new requirements of customers so that they understand the viability of their existing businesses. Since consumers will not be able to consume offline during the Covid-19 crisis due to home quarantines, orders for products or services will only be made through the online contact of buyers.

Collective strategy. Under this specific strategy, businesses innovate together and share additional resources and authority with other firms, based on the motivation to look for problems because their business is limited.

Active strategy. This strategy will consist of strategies aimed at finding the weaknesses of the enterprise and independent innovation. During the Covid-19 crisis, they will be able to take full advantage of their accumulated resources and capabilities, such as digital technologies, to optimize their business, regardless of changes in the environment.

Collaborative strategy. This strategy allows companies that are less affected by the Covid-19 crisis to partner with other manufacturing companies and develop new businesses that take into account the needs of consumers. The key point for businesses adopting this particular strategy is to develop a new business by combining their internal digital strengths with the external additional resources of their partners. In this way, they can enter new markets and attract new customer groups.

Conclusion. The relevance of the use of innovative marketing in the development of industrial enterprises in the regions of the Republic is based on the following conditions:

- The negative impact of the Covid-19 pandemic on real sectors of the economy;
- Insufficient demand for products of domestic manufacturers in the world market;
- Lack of branding of products manufactured at industrial enterprises;
- The need to increase the competitiveness of developed countries by preventing them from easily occupying the domestic market and optimizing the production process in the industry;

- Advantages of using the capacity of innovations for the industry to make full use of its export potential and take a strong position in the world market.

In our opinion, the implementation of innovative marketing measures in the industrial sector will provide manufacturing enterprises with the following opportunities:

1. New and improved technologies, products, equipment, materials, etc. ensuring the growth of product through the introduction;

2. Creation of systems of training and retraining of highly qualified personnel in the field of innovative marketing;

3. Creation of an effective, market-oriented innovation system that will increase the innovative marketing activity of enterprises; implementation of rapid structural changes in production on the base of innovations;

4. Improving the competitiveness of products and the technical level of production;

5. Creating conditions for further promotion of industrial and scientific-technical products in domestic and foreign markets;

6. Maximum use of best practices and advantages of international cooperation and intersectoral cooperation in the field of innovative marketing activities.

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MODERN PROBLEMS OF TECHNICAL SCIENCES

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PARAMETRIC AMPLIFICATION OF ULTRASHORT LASER PULSES IN NONLINEAR PHOTONIC CRYSTALS UNDER SELF-ACTION AND NON-STATIONARY CONDITIONS

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Annotatsiya. Qisqa lazer impulslarining nochiziqli foton kristallarda optik parametrik kuchaytirish jarayonini sonli hisoblashlar yordamida tahlil qilindi. Ushbu jarayonga uchinchi tartibgacha muhit disspertsiyasi va uchinchi tartibli nochiziqli kirituvchanliklar hisobga olib tahlil qilindi. Olingan natijalar asosida optimal shartlar ya'ni ushbu nochiziqli optik jarayon samaradorligi o'zgarishi tahlil qilindi.

Kalit so'zlar. optik parametrli kuchaytirish, dispersiya, femtosekundli implus, kubik kirituvchanlik, LiNbO₃, domen strukturasi doimiy bo'lgan kristallar,

Аннотатция. С помощью численных расчетов проанализирован процесс оптического параметрического усиления в нелинейных фотонных кристаллах коротких лазерных импульсов. Этот нелинейно- оптический процесс был проанализирован с учетом дисперсии среды до третьего порядка уровня и кубичной нелинейности Керроского типа. На основании полученных результатов проанализированы оптимальные условия, то есть изменение эффективности этого нелинейно- оптического процесса.

Ключевые слова. оптическое параметрическое усиление, дисперсия, фемтосекундные импульсы, кубичная восприимчивость, LiNbO₃, кристаллы с регулярной доменной структурой.

Annotation. The process of optical parametric amplification of short laser pulses in nonlinear photonic crystals under conditions of nonstationarity and self-action is analyzed numerically. The process was analyzed taking into account the dispersion of the medium up to the third order and nonlinear susceptibilities of the third order. On the basis of the results obtained, the optimal conditions under which the maximum efficiency of this nonlinear optical process can be achieved are analyzed.

Key words. optical parametric amplification, dispersion, femtosecond pulses, cubic susceptibility, LiNbO₃, crystals with a regular domain structure.

Introduction. In nonlinear optics, laser radiation frequencies can be converted using various nonlinear optical media. Despite the whitewash of frequency conversion

processes, the process of optical parametric amplification (OPA) of laser radiation in quadratic crystals plays a unique role. There are several reasons for this. Most importantly, this process can replace coherent sources from the visible spectrum with infrared. In addition, using it it is possible, to convert the laser wavelength not discretely, but "smoothly".

A shot history of the OPA as follows. The nonlinear optical OPA process was first predicted theoretically in 1962 by Kroll [1], Akhmanov and Khokhlov [2], Kingston [3] and others. This was later demonstrated in practice by Wang and Reisett [4], Akhmanov [5], Jordmain and Miller [6] and others in 1965.

It has been proven, that this nonlinear optical process is based on the influence of a medium with nonlinear optical properties (for example, KDP or LiNbO$_3$ crystals). In this case, a very low energy signal radiation, which is planned to be amplified by a high energy light wave, called the fundamental wave (or pumping), is incident on the nonlinear optical medium simultaneously. Then, under certain conditions of phase mismatch, the nonlinear optical medium emits coherent radiation with three different frequencies, which are called pumping, signal and idler waves. Here the main wave, i.e., the pumping wave gives own energy to the remaining two waves. In this case, the rule of superposition of oscillations is not fulfilled.

In recent years, the implementation of the OPA process in nonlinear photonic crystals has become widespread [6], [7], [8], [9]. One of the main reasons for this is that these crystals can be oriented to any OPA process. Since a wave number of the nonlinear photonic crystal compensates a wave mismatch of chosen OPA.

One of the main requirements for the implementation of the OPA process is its high efficiency. High-energy laser beams are often used for this. This is due to the fact that, highly efficient nonlinear optical processes are directly proportional to the laser intensities. It is known, that coherent high-energy sources are present in short laser pulses. In turn, the use of short high-energy laser pulses leads to two undesirable effects. The first is the enhancement of the effect of dispersion of the optical medium, the second is the appearance of third-order nonlinear optical processes (Kerr nonlinearity). The first nonlinear optical process leads to time delays of pulses and an increase in pulse durations. The second effect leads to an additional change in the refractive index of the medium. In this study, the impact of these undesirable processes on the GPC was analyzed using numerical calculations. The calculation results showed that both the dispersion of the medium and the influence of the third-order input were observed after the pulse duration and intensity exceeded a certain limit.

2. The theoretical part. It is known that the OPA is a process in which the input of the crystal falls ω_3 (ω_p "pumping" wave) and ω_2 (ω_s "Signal" wave) weak radiation and free radiation ω_1 (ω_i "idle" wave) frequency where they are connected $\omega_3 = \omega_2 + \omega_1$ or $\omega_p = \omega_s + \omega_i$ ... If in this case the phase is synchronous $\Delta k = k_3 - k_1 - k_2$ is satisfied, then both waves ω_2 and ω_1 amplified by getting energy ω_3 waves. Under conditions of nonstationarity of the process and taking into account high-order nonlinear effects, the OPA can be written as follows [10]:

$$\frac{\partial A_1}{\partial z} + D_1(\omega_1)\frac{\partial A_1}{\partial t} - \frac{i}{2}D_2(\omega_1)\frac{\partial^2 A_1}{\partial t^2} = -\frac{4\pi i d_{eff}}{n_1 \lambda_1} A_2^* A_3 e^{-i\Delta kz} - \frac{3\pi i}{n_1 \lambda_1} A_1 \left[\chi_{1111}^3 |A_1|^2 + 2\chi_{1212}^3 |A_2|^2 + 2\chi_{1313}^3 |A_3|^2 \right]$$

$$\frac{\partial A_2}{\partial z} + D_1(\omega_2)\frac{\partial A_2}{\partial t} - \frac{i}{2}D_2(\omega_2)\frac{\partial^2 A_2}{\partial t^2} = -\frac{4\pi i d_{eff}}{n_2\lambda_2}A_1^* A_3 e^{-i\Delta kz} - \frac{3\pi i}{n_2\lambda_2}A_2\left[2\chi_{1111}^3|A_1|^2 + \chi_{1212}^3|A_2|^2 + 2\chi_{1313}^3|A_3|^2\right]$$

$$\frac{\partial A_3}{\partial z} + D_1(\omega_3)\frac{\partial A_3}{\partial t} - \frac{i}{2}D_2(\omega_3)\frac{\partial^2 A_3}{\partial t^2} = -\frac{4\pi i d_{eff}}{n_3\lambda_3}A_1 A_2 e^{i\Delta kz} - \frac{3\pi i}{n_3\lambda_3}A_3\left[2\chi_{1111}^3|A_1|^2 + 2\chi_{1212}^3|A_2|^2 + \chi_{1313}^3|A_3|^2\right]$$

(1)

with boundary conditions:

$$A_3(z=0,t) = A_o\exp(-t^2/\tau^2);\ A_2(z=0,t) = 10^{-4}\cdot A_3(z=0,t);\ A_3(z=0,t) = 0$$

(2)

Here; A_3 - complex pump, A_2 signal and A_1 "idle" amplitudes. where applicable λ_3 λ_2 and λ_1 pump, signal and idle wavelengths, respectively; $n_1 = n_1(\omega_1)$ $n_2 = n_1(\omega_2)$ $n_3 = n_3(\omega_3)$ - refractive indexes (the dependence of the refractive index on the wavelength is taken from the article [11]); $\omega = 2\pi c/\lambda$ radiation frequency (c -speed of light, λ -wavelength), d_{eff} and $\chi_{1111}^{(3)}$, $\chi_{1212}^{(3)}$, $\chi_{1313}^{(3)}$ nonlinear coupling coefficients of the second and third orders.

As mentioned above, (1) the system of differential-differential equations with boundary conditions (2) were solved using numerical calculations. For this, the Runge-Kutta method of the 4th order was applied to the nonlinear part of the system of equations, and the fast Fourier transform method was applied to the linear part (that is, the dispersion part). To improve the accuracy of the numerical method of calculation, the method of a symmetric scheme of steps along the nonlinear and linear parts of the equations was used [12].

To analyze the above OPA, the following parameters of the real state of laser and crystal were selected: nonlinear photonic crystal Mg: PPLN, $I_3 = 10^{16}\ W/m^2$, $I_1 = 10^{12}\ W/m^2$, $I_2 = 0\ W/m^2$, $\lambda_1 = 3,4\ \mu m$, $\lambda_3 = 1,064\ \mu m$, $\lambda_2 = 1,5486\ \mu m$, $d_{eff} \approx 4,7\cdot10^{-12}\ m/V$, $\chi_{1111}^{(3)} = \chi_{1212}^{(3)} = \chi_{1313}^{(3)} \approx 2,94\cdot10^{-21}\ m^2/V^2$ [10,11,13]. We calculated the duration of the main laser pulse at several values: $\tau = 100\ fs$, $\tau = 50\ fs$ and $\tau = 20\ fs$.

It should be noted that the reason for obtaining a nonlinear photonic crystal Mg: PPLN is that its linear and nonlinear optical properties are well studied and calculated. In numerical calculations, it is necessary to set values close to real ones.

3. Obtained results and their discussion.

Three figures are rearranged below, which are obtained on the basis of the selected duration data, that are, for cases $\tau = 100\ fs$ $\tau = 50\ fs$ and $\tau = 20\ fs$. As mentioned above, we have concentrated on analyzing the effects of higher order dispersion and nonlinearity. First, the effects of medium dispersion and third-order susceptibility were considered. Secondly, these conditions were also considered separately. One of the main reasons for this was the identification of effects that reduce the efficiency of the OPA process.

The first figure shows the calculation results for the pump pulse duration, i.e., ~100 fs (signal also the same durations). Part (a) shows that the efficiency of the signal pulse relative to the main pulse depends on the length of the nonlinear photonic crystal. In turn, the right (b) shows the time profile of the signal pulse as it exits the nonlinear photonic crystal.
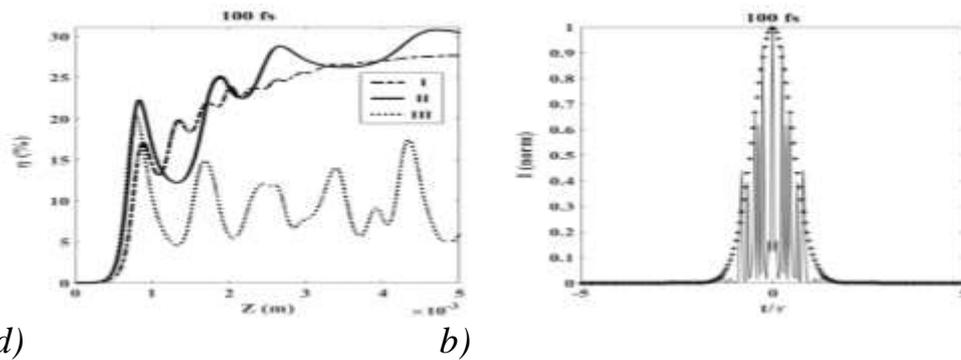
and) *b)*

Figure 1. Results for the 100 fs case. (a) Dependence of the OPA efficiency (signal efficiency) on the length of the nonlinear photonic crystal (b) - Time profile of the signal pulse intensity at the output from the nonlinear grating

Calculations were made here for several cases. That is, I curve represents the results of calculations for the case when the dispersion of the medium and the effects of the susceptibility of the medium of the third order are taken into account in the part indicated by the dotted line ($\chi^{(3)} \neq 0$ and $D(\omega) \neq 0$). This situation fully corresponds to the system of equations (1) with its boundary conditions (2), all restrictions are taken into account. In turn, case (II), given by the solid line, and in this case, does not take into account the third-order nonlinear susceptibility (i.e., E. $\chi^{(3)} = 0$) only calculations of the state are given taking into account the dispersion of the medium ($D(\omega) \neq 0$). Finally, in case (III) (dotted lines), the dispersion of the medium ($D(\omega) = 0$) and third-order inputs ($\chi^{(3)} = 0$) are the results obtained for unaccounted-for cases. It can be seen from this first figure that the main effect that reduces the OPA efficiency is the third order polarization. Its influence is noticeable. You can also notice that the effects that we call undesirable, on the contrary, increase the effectiveness of the signal wave. The main reason for this is that the effects of the two effects cancel each other out.

The second figure shows the results for the main pulse with a duration of 50 fs. In this case, we did not observe results different from the case of almost 100 fs. From this, it can be concluded that the main effect on the appearance of OPA in high-intensity laser radiation in the cases of 100 and 50 fs is the third-order contribution. That is, in (I), in the part indicated by the (ring) line, the calculation results are given for the case that takes into account the effects of the medium dispersion and the third-order medium permeability ($\chi^{(3)} \neq 0$ and $D(\omega) \neq 0$).
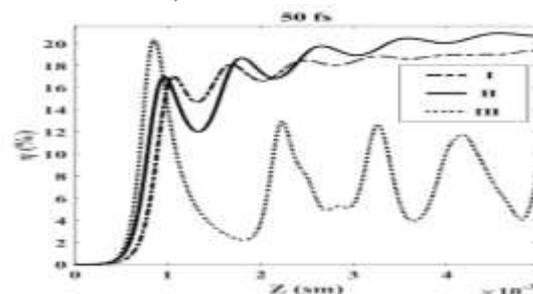

Figure 2. Results for the 50 fs case. The presentation of the results obtained corresponds to part (a) of the Figure 1.

In turn, condition (II) (i.e., specified by the solid line) in this case is the input of the third-order medium ($\chi^{(3)} = 0$) are not taken into account, only calculations of the state

are given taking into account the dispersion of the medium ($D(\omega) \neq 0$). Finally, in case (III) (point to point), the dispersion of the medium ($D(\omega) = 0$) and third-order inputs ($\chi^{(3)} = 0$) are the results obtained for unaccounted-for cases. Finally, when we ran our calculations at 20 fs, we noticed that the situation was radically different from the one described above. The results are shown in the third figure.
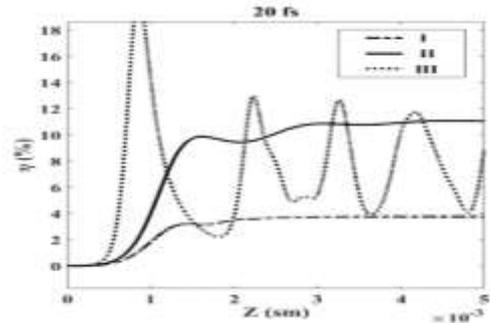

Figure 3. Results for the 20 fs case. The presentation of the results obtained corresponds to Figure 2.

As can be seen from the figure, the dispersion of the medium ($D(\omega) \neq 0$) A sharply reduced efficiency of the OPU (in this case (II) solid lines no more than 10%). In turn, the dispersion of the medium ($D(\omega) \neq 0$) also take into account the third-order input ($\chi^{(3)} \neq 0$) Further decrease in the efficiency of the OPU. This corresponds to condition (I) (indicated by dotted lines). Here, the efficiency of the OPA did not exceed 3%. In conclusion, it should be noted that in the OPA process when using high-intensity short-pulse lasers, the average dispersion ($D(\omega) \neq 0$) is also the third-order medium permeability ($\chi^{(3)} \neq 0$) should be considered.

Conclusion. Thus, in this work, we numerically investigated the process of optical parametric amplification of short laser pulses in crystals with a regular domain structure of 5% MgO: LiNbO3. The process is investigated under nonstationarity and self-action conditions. The calculations were carried out for the duration of the main pulse~100, ~50 and~20 fs with intensity $I_3 = 10^{16} W/m^2$., that is, in those conditions under which the effects of dispersion and cubic nonlinearity of the Kerr type begin to affect.

A numerical OPA experiment was carried out to identify the effects that impede obtaining an effective OPA. Calculations have shown that the effect of the dispersion of the medium increases with decreasing pump pulse duration. In addition, as the intensity increases, the effect of the third-order susceptibility is enhanced, which leads to a change in the refractive index of the medium. From this point of view, to obtain a highly efficient OPA, it is necessary to take into account the levels of intensity and duration of the main pulse in accordance with the obtained experimental conditions.

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THE ECONOMIC BASIS OF IMPROVING THE PROCESS OF DISBANDMENT AND ASSEMBLY OF MULTI-GROUP TRAINS AT STATIONS BASED ON INFORMATION TECHNOLOGIES

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Annotatsiya. Maqolada stantsiyalarda ko'p guruhli poezdlarni taqsimlash va yig'ish vaqtini optimallashtirish uchun dasturiy ta'minotni qo'llash usullari o'rganilgan. Ishlab chiqilgan dasturiy ta'minotni stantsiyalarda qo'llash natijalariga ko'ra uning iqtisodiy ko'rsatkichlari asoslanadi.

Kalit so'zlar: mahalliy vagonlar, yuk ob'ektlari, yuklarni etkazib berish, yuklarni tushirish, manevrli lokomotiv, elektron hisoblash mashinasi dasturi, sof diskontlangan daromad, kapital qo'yilmalar.

Аннотация. В статье исследуются способы применения программного обеспечения для оптимизации времени, затрачиваемого на процесс распределения и сборки многогрупповых поездов на станциях. По результатам применения разработанного программного обеспечения на станциях обоснована его экономическая эффективность.

Ключевые слова: местные вагоны, грузовые объекты, доставка груза, разгрузка груза, маневровый тепловоз, программа для ЭВМ, чистый дисконтированный доход, капитальные вложения.

Annotation. The article researches ways to apply software to optimize the time spent on the distribution and assembly process of multi-group trains at stations. Based

on the results of the application of the developed software on the stations, its economic performance is substantiated.

Keywords: local wagons, freight objects, delivery of freight, unloading of freight, shunting locomotive, program for Electronic Computing Machine, net discounted income, capital investments.

Introduction. The rational organization of the movement of multi-group trains serving the local wagon flows on the railway section has a positive effect on the rate of timely delivery of goods.

In the disbandment and assembly of multi-group trains the local wagon-flows, the amount of local work at the station and railway site, which carries out shunting operations with these trains, is of paramount importance.

The local work of railway sites includes: loading and unloading of goods, disbandment of loaded and empty wagons, provision of empty wagons for loading and removal of wagons from stations on railway site (loading and unloading operations have been completed).

Analysis and results. Analysis and experiments were carried out at the railway stations of JSC "UMK" to optimize the process of distribution and assembly of local wagons. At present, the formation of wagons on non-existent objects is carried out in accordance with the established procedure in JSC "UMK" on the basis of the experience of the relevant staff. Therefore, one of the actual problems is to improve the process of formation of such trains through the introduction of modern information technologies.

Rational organization of shunting operations in JSC "UMK" also, in order to optimize the process of disbandment and assembly of wagons on cargo facilities, was developed a computer program "To select of the optimal number of shunting flights and the sequence of their performance in the formation of a group of wagons in the prescribed manner" [1]. The fragment of developed the program for Electronic Computing Machine (then used as program for ECM in the text) is shown in Fig. 1.

This software is designed to select the optimal number of shunting flights and the sequence of their execution when forming a group of wagons in the prescribed manner. The program can be used to select the optimal number of shunting flights and the sequence of their execution in the formation of a group of wagons in the prescribed manner at the stations where the railway operations are performed.
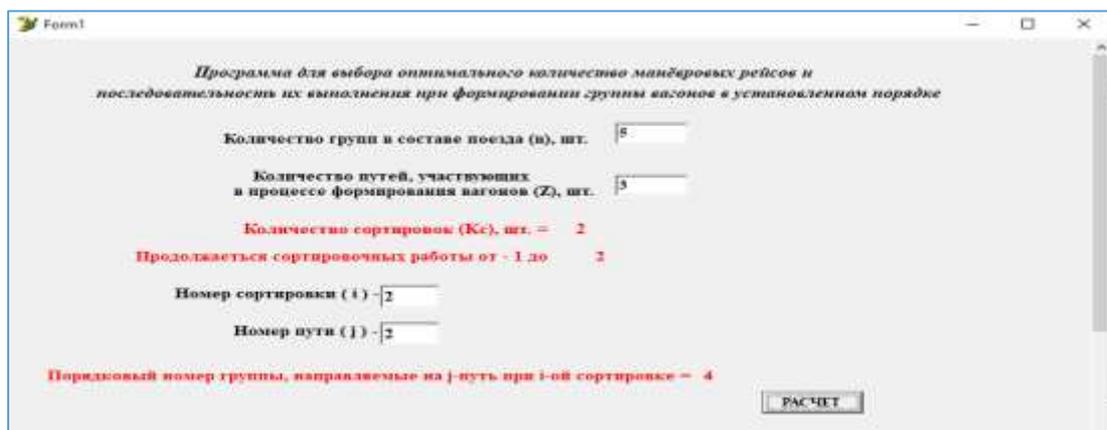

Figure 1. The fragment of developed the program for ECM

The developed program for ECM determines the following shunting performance indicators based on the possible options for the placement of wagons in the group when forming a group of wagons in the prescribed manner:

- developed program for ECM determines the number of sorting operations when forming a group of wagons in the prescribed manner;

- developed program for ECM determines the optimal number of shunting flights when forming a group of wagons in the prescribed manner;

- developed program for ECM determines the sequence number of the group to be sent to the j-track and the sequence of shunting flights in the i-sorting of the group of wagons in the prescribed manner.

Implement a program designed to search for smart technology to formate trains allows to reduce the time spent formating multi-group, reduce shunting time compared to farmating multi-group trains based on the experience of person staff and increased the loading of stations, also reduces the stagnation of wagons and speeds up wagon turnover.

Also, the implementation of this program in practice requires the right approach to the assessment of its economic performance.

The article considers the economic basis for improving the process of disbandment and assembly of multi-group trains at the railway stations of JSC "UMK" with the help of developed program for ECM.

Implementation of the computer program will allow to improve the process of assembling wagons on freight objects in the manner prescribed by JSC "UMK", while reducing the time spent on shunting operations. To do this, first of all, it is necessary to determine the capital investments for the development of a program for ECM and its implementation in practice.

The cost of the computer program under the contract with JSC "UMK" is valued at 150 million UZS. To make an economic assessment, it is necessary to determine the exploitation costs that will be achieved as a result of the use of the program.

The costs incurred over the spared time in the process of disbandment the train by freight objects calculated according to the following formula:

$$E_{time}^{year} = \Delta t_{spt} \cdot N_t \cdot e_{l-h}^{shunt} \cdot K_{year}, \text{ UZS} \qquad (1)$$

where Δt_{spt} — average sparing time in the process of disbandment one train by freight objects, hours [2];

N_t — number of trains disbandmented per day, train [3];

e_{l-h}^{shunt} — one-hour locomotive-hour cost rate of shunting locomotive with brigade, UZS / hour;

K_{year} — number of days per year, 365 days.

The costs incurred over diesel fuel savings in the process of disbandment the train by freight objects calculated according to the following formula:

$$E_{fuel}^{year} = \Delta F \cdot N_t \cdot e_{fuel} \cdot K_{year}, \text{UZS} \tag{2}$$

where ΔF – average diesel fuel savings during the distribution of one train by freight objects, liters [4];

e_{fuel} – the cost of diesel fuel in industry, UZS [5].

The parameters identified during the research and their results can be seen in Table 1.

Table 1.

Parameters identified during the research

№	Parameters	Symbol	Value
1	Average sparing time in the process of disbandment one train by freight objects, hours	Δt_{spt}	0,17
2	Number of trains distributed at the station during the day, train	N_t	8
3	One-hour locomotive-hour cost rate of shunting locomotive with brigade, UZS / hour;	e_{l-s}^{shunt}	218 913
4	Average diesel fuel savings during the distribution of one train by cargo facilities, liters	ΔF	17
5	The cost of diesel fuel in industry, UZS	e_{fuel}	5797

$$E_{time}^{year} = 0,17 \cdot 8 \cdot 218913 \cdot 365 = 108\ 668\ 414 \text{ UZS}$$
$$E_{fuel}^{year} = 17 \cdot 8 \cdot 5797 \cdot 365 = 287\ 763\ 080 \text{ UZS}$$

The total annual costs to economize by the program are determined on the basis of the following form:

$$\Delta E_{econ}^{year} = E_{time}^{year} + E_{fuel}^{year}, \text{UZS} \tag{3}$$

$$\Delta E_{econ}^{year} = 108,668 + 287,763 = 396,431 \text{ million UZS}$$

After making the calculations, the organization of station work based on the use of the program for ECM, taking into account the cost of time and diesel fuel, amounted to 396,431 mln. UZS.

The calculation of the payback period for the implementation of the **program for ECM** at the stations of JSC "UMK" is as follows:

- calculated is net discounted income (NDI) for years;

- The first positive value of the NDI is checked for compliance with the payback period in terms of the economic benefits received.

Net discounted income can be calculated using the following formula [6]:

$$\text{NDI} = \sum (R_t - C_t) \cdot \frac{1}{(1+E)}, \text{UZS} \tag{4}$$

where C_t – capital investments, UZS;

R_t – total annual economic benefit from the implementation of the **program for ECM**, UZS;

E – discount rate, We accept 0,16;

t – years.

Table 2 shows the results of the calculation of the payback period for the implementation of the **program for ECM** at the stations of JSC "UMK".

Table 2.

Table of calculation NDI

Years, t	Capital investments, C_t, mln. UZS	Total annual economic benefit, R_t, mln. UZS	$\frac{1}{(1+E)}$	Annual effect	Net discounted income (NDI)
1	150,000	396,431	0,862	191,751	191,751

Calculations for expenses for the first year are made according to the following formula:

$$NDI = \frac{\sum R_t}{(1+E)^t} - C_t, \text{ UZS} \qquad (5)$$

In the 1-st year of project implementation

$$NDI = 191,751 \text{ mln. UZS}$$

The exact value of the payback period of capital investments is calculated using the following formula [6]:

$$T_{payper} = t_1 + \frac{\left|NNDI_{t_1}\right| \cdot (t_2 - t_1)}{PNDI_{t_2} + \left|NNDI_{t_1}\right|}, \qquad (6)$$

where t_1 – last year when the NDI balance value was negative (NNDI$_{t_1}$)

t_2 – the year in which the NDI balance value is positive (PNDI$_{t_2}$).

$$T_{payper} = 0 + \frac{150,000 \cdot (1-0)}{150,000 + 191,751} = 0,4389 \text{ year}$$

The internal rate of return (IRR) represents the discount rate (E_{DR}), which is equal to the annual return on capital investment [7, 8]:

$$E_{DR} = \frac{1}{T_{payper}} \qquad (7)$$

$$E_{DR} = \frac{1}{0,4389} = 227,84$$

The rate of return is defined as the ratio of the annual yield to the volume of capital investment:

$$PK = \frac{1}{K} \sum_{t=0}^{T} (R_t - C_t) \frac{1}{(1+E)^t} \qquad (8)$$

$$K = \sum_{t=0}^{T} \frac{K_t}{(1+E)^t} \qquad (9)$$

where K – the amount of discounted capital investment;

K_t – capital investments in the t-stage of calculation.

$$\text{К} = \frac{150,000}{(1+0,16)} = 129,31 \text{ mln.UZS}$$

$$\text{ИД} = \frac{1}{129,31} \cdot \frac{396,431}{1,16} = 2,643$$

Conclusion. In conclusion, implementation of the program for ECM at the expense of investment optimized of disbandment and assembly of wagons on freight objects in JSC "UMK". Also, the payback period of the project is on average 6 months. By reducing current costs, the additional income from the implementation of the proposed computer program will amount to 396,431 mln. UZS.

The project of implementation of the program in railway sphere can arouse interest in investors, because the internal rate of return on capital is 227,84%, which significantly exceeds the discount rate (16%). In the first year of the project, the return on investment will be 2,643, taking into account the 16% discount rate. It follows that for every 1000 UZS invested, it is possible to earn 2,643 UZS, taking into account the planning stage adopted ($\approx$5,75 months).

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CONTRIBUTION TO ISLAMIC SCIENCES OF HUSOMUDDIN AL-AKHSIKATI'S SCIENTIFIC HERITAGE

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Annotatsiya. Ushbu maqolada Xusomuddin al-Axsikatiy ilmiy merosining islom ilmlariga qo'shgan hissasi haqida fikrlar bildirilgan. Xusomuddin al-Axsikatiy Farg`ona vodiysining fiqh ilmida o'z o'rniga ega yetuk allomalaridandir. Uning "Muntahab al-Husomiy" asari islom fiqhshunosligida muhim ahamiyatga ega. Ushbu asar o'z mazmun-mohiyati bilan musulmon huquqshunosligi mezonlari mavzusiga bag`ishlangan.

Kalit so'zlar: Axsikat shahri, Xusomuddin Axsikatiy, "Muntahab al-Husomiy" asari, faqihlar, hanafiylik, usul, furu'.

Аннотация. В этой статье обсуждается вклад научного наследия Хусамуддина аль-Ахсикати в исламские науки. Хусамуддин аль-Ахсикати - один из ведущих ученых Ферганской долины, занимающий важное место в области юриспруденции. Его работа «Мунтахаб аль-Хусами» важна в исламской юриспруденции. Работа посвящена критериям мусульманской юриспруденции.

Ключевые слова: город Ахсикат, Хусамуддин Ахсикати, "Мунтахаб аль-Хусами", факихи, ханафизм, метод, фуру.

Annotation. This article discusses the contribution of Husamuddin al-Akhsikati's scientific legacy to the Islamic sciences. Khusamuddin al-Akhsikati is one of the leading scholars of the Fergana Valley who has a place in the science of jurisprudence. His work Muntahab al-Husami is important in Islamic jurisprudence. This work is devoted to the criteria of Muslim jurisprudence.

Key words: Ahsikat city, Husamuddin Ahsikati, Muntahab al-Husami, fakihs, Hanafiism, usul, furu.

Introduction. Akhsikat (Akhsikent) is one of the ancient cities of the Fergana Valley. Many famous scholars grew up here. One of them is Husamuddin al-Akhsikati, a mature sheikh, a scholar of "furu 'al-fiqh" [7] and "usul al-fiqh" [2]. The scholar's full name is Imam Muhammad ibn Muhammad ibn Umar Husamuddin al-Akhsikati, known as Abu Abdullah. Although the books of Tarojum and Alam do not indicate the date of the scholar's birth, it is clearly stated that he was born in Akhsikat, one of the main cities of Fergana. This city is recognized as one of the capital cities of Fergana, and in the Middle Ages it was one of the most beautiful cities of the valley and one of the major scientific centers of its time [1]. The death of Husamuddin al-Akhsikati varies in the sources. Some sources state the scholar's death as 624/1227 [3], while other sources state it as 644/1246 [9]. Alloma lived in Movarounnahr at a time when the development of science was at its height.

Abu Mansur Muhammad ibn Muhammad al-Moturidi (d. 945) [5], Abul Abbas Ahmad ibn Muhammad ibn Marwan as-Sarakhsi (d. 1047) [10], Imam Fakhrulislam Abul Hasan Ali ibn Muhammad ibn Husayn ibn Abdul Karim al-Mawarounnahr - Bazdavi (d. 1089) [1], Imam Abu al-Mu'in Maymun ibn Muhammad ibn Muhammad Makhul an-Nasafi (d. 1144) [6] and other similar pillars of knowledge and enlightenment, the land of advanced scholars and mature jurists. is calculated. Therefore, his work was greatly influenced by several scholars of the region, including Abu Mansur Muhammad ibn Muhammad al-Moturidi, Abul Abbas Ahmad ibn Muhammad ibn Marwan as-Sarakhsi, and Imam Abu al-Muin Maymun ibn Muhammad ibn Muhammad Makhul an-Nasafi. The period of the scholar's life coincided with the period of the Abbasid state, in which the scientific activity of scientists was supported and the necessary conditions were created for the spread of science. Scientists have a wide path to knowledge and education.

The scholar is one of the scholars of the third class of mujtahids, that is, those who belong to the category of historians in the sect. The fact that he was chosen from this class shows that the scientist has great mental strength, high talent, scientific potential and enlightened thinking.

Literature review. There is no information about the scholar's teachers in the translation books. Among his disciples were many scholars and nobles: Muhammad ibn 'Umar ibn Muhammad Zahiruddin an-Nahababzi (thirteenth century) and Muhammad ibn Muhammad ibn Nasr Abul Fadl al-Bukhari (1218-1294) [8]. His place in the science of fikh is great. In particular, Muhammad ibn 'Umar ibn Muhammad Zahiruddin an-Nahabazi's "Kashf al-abham li Raf'i-l-Awham" (Resolving Doubts to Correct Mistakes) and "Kashf al-Asror fi usul al-fiqh" (Secrets in Fiqh Sources) solve") is always in the spotlight of researchers.

Ibn Qutlubga in his work Taj at-Tarajim says about the scholar Husamuddin al-Akhsikati: Other scholars have also commented positively on it. We have received a number of works by Akhsikati. They are:

• Al-Mukhtasar fi usul al-fiqh. (Abbreviation for Fundamentals of Fiqh) (Also known as al-Muntahab fi usul al-Hanafiya or Muntahab al-Husami)

• Miftah al-usul (The Key to the Fundamentals of Fiqh)

• G'oyat at-tahqiq ("Peak of Research")

• Daqaiq al-usul vat-tabyin ("Clarity and Interpretation in Sources") [10]

Among them is the scholar's work "al-Muntahab fi usul al-Hanafiya". He is also known as "Muntahab al-Husami".

Research Methodology. Husamuddin al-Akhsikati was an enlightened man, a methodologist, a fakih and a mutakallim who possessed various sciences. Today, two of his works, including "Tahqiq al-Husami" ("Husami evidence") and "Mukhtasar al-Husami" ("Husami abbreviations") are kept in the manuscripts of the Institute of Oriental Studies of the Academy of Sciences of the Republic of Uzbekistan. In addition, the manuscripts of Mukhtasar al-Husami are in the collections of various Western and Eastern countries. Among the works of the scholar that have come down to us, the work on the sources of Islamic jurisprudence, the method of al-fiqh, "Muntahab al-Husami" (Hussein's chosen ones) (sometimes called "Mukhtasar al-Husami") is very popular. This work was highly praised by scholars. For example,

Imam Abd al-Aziz al-Bukhari (d. 1330) commented on this work, emphasizing that it excelled among the short works written in this field due to the perfection of its composition, the ease of its narrative style, and its concise description of the science of the whole method. Although the fact that the work is summarized is a positive aspect, it has been difficult for first-time learners of the science of methodology, so a number of commentaries have been written on the work. Among them are Amir al-Katib al-Itqani's (d. 1357) "At-Tabyin" ("Explanation"), Abdulaziz al-Bukhari's "At-Tahqiq" ("Disclosure"), Imam Husamuddin Husayn ibn Ali ibn al-Hajjaj as-Siganaki (d. 1312) The commentaries written by Al-Wafi (Perfect) and Hafiziddin Abdullah ibn Ahmad an-Nasafi (d. 1311) are well known. Today, manuscripts of "Mukhtasar al-Husami" are kept in the following treasures:

Analysis and results. At the Juma-l-Majid Cultural Heritage Center in Dubai, United Arab Emirates, four copies are numbered 1089 (151 pages), 1161 (122 pages), 1162 (80 pages), 1163 (72 pages); The Egyptian National Library has a collection of manuscripts, and the German State Library in Berlin has one manuscript copy of the work. [9] Many manuscripts of commentaries and margins on Mukhtasar al-Husami are also preserved in various manuscripts around the world. For example, the commentary on this work by Abd al-Aziz al-Bukhari, entitled "al-Tahqiq", is available in the "Al-Zahiriyya" Library in Damascus, Syria, at 2868 (351 pages), 5619 (229 pages), 7738 (240). sheet) are stored under the sequence numbers.

Copies of this commentary are kept under serial number 3466 (286 pages) and serial number 399 (222 pages) at the Juma-l-Majid Cultural Heritage Center in Dubai. Imam Kawamiddin Amir Kotib ibn Amir Umar Itkani also wrote a commentary on this work called "At-Tabyin". Manuscripts of the commentary are kept in the National Library of Egypt under serial number 142, in the Library of Alexandria under serial number 3634, and in the State Library of Berlin in Germany under serial number 4588.

A manuscript of the commentary, al-Wafi, written by Imam Hisamiddin Husayn ibn Ali ibn Hajjaj as-Signaqi, is kept in the famous "Juma-l-Majid" Cultural Heritage Center under serial number 43 [6].

Also, a commentary written by Abu Muhammad Abdulhaq ibn Muhammad Amin is called an-Namiy. His manuscript is also kept at the "Juma-l-Majid" Cultural Heritage Center under serial number 374. A form of lithography has been published in India. Among the commentaries mentioned above, many commentaries have been written by scholars such as Hafiziddin Abdullah ibn Ahmad an-Nasafi, Muhammad ibn Muhammad ibn Mubin an-Navavi Abulfazl, and Yusuf ibn Shahin Sabt ibn Hajar al-Asqalani [4].

"Muntahab al-Husami" is devoted to the analysis of the Qur'an, the Sunnah of the Paygambar (s.a.v), the criteria of consensus and comparison, which are the sources of Muslim jurisprudence. Of course, the first two of these sources are undoubtedly the source and basis of jurisprudential rules, but the play provides a more detailed analysis of the ways in which they can be used as the basis of the science of jurisprudence, as well as the conditions and norms required. In addition to the Qur'an and the Sunnah, Abu Zayd Dabbusi's (d. 1039) works, such as "Taqwim al-Adilla fi usul al-fiqh" and "Ta'isis an-nazar fi ilm al-khilaf bayn al-Hanafiya", were used in the creation of the work. Al-Mu'tamad fi usul al-fiqh used "Usul al-Qarhi" by Abulhasan Karhi.

Therefore, Husamuddin al-Akhsikati's "Muntahab" is based on the words of mujtahid imams such as Imam Abu Hanifa Nu'man, Imam Abu Yusuf, Imam Muhammad ibn Hasan Shaybani, and Imam Shafi'i.

Akhsikati has his own style of writing this work. In the style of writing:

- The sources of Shari'a rulings are stated;

- The hidden meanings of words that are difficult to understand are revealed.

- The chapters of the work are given in the form of themes.

- Simplicity in sentence construction. Although there are expressions that are difficult to understand in some places, the work is written in a fluent style that is easy to understand.

- The rules of method for expressing a particular idea or problem are given in a beautiful style and ensure the harmony of the sentences from the beginning to the end of the work.

- At the end of the book there is a separate chapter on the meaning of letters. This is not observed in the works of other scientists of methodology. Because letters are studied in the science of grammar, not in the science of fiqh. The author links some Shari'ah rulings to the letters and quotes them at the end of the book in addition to their use in jurisprudence [5].

Conclusion. Haji Khalifa [8] in his book "Kashf az-Zunun" (The Discovering or Enlightening Thoughts) [2] is notable in the science of jurisprudence, as it is a work of the method of the sect, and it excludes superfluous things, and gives various examples in the description of the chapters. that is. In their time, people competed with each other in the study and research of the work, in teaching, and in its widespread dissemination to the public.

"Muntahab al-Akhsikati" has become a rare source of Muslim jurisprudence due to its extensive coverage of jurisprudential issues. It is currently taught as a textbook in the Arab Republic of Egypt. At this point, it would be expedient to study this work and translate and analyze its manuscripts and lithographs and apply them in practice, and the study of Islamic jurisprudence as a subject is a topic of today.

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ENVIRONMENTAL SAFETY IN THE GLOBAL SAFETY SYSTEM

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Annotatsiya. Maqolada ekologik xavfsizlik muammolarining falsafiy jihatlari o'rganilgan. Xavfsizlik kontseptsiyasining mazmuni va mohiyati ochib beriladi, global ekologik xavfsizlik tizimining hozirgi holati tahlil qilinadi.

Kalit so'zlar: Ekologik xavfsizlik, falsafiy jihat, jamiyat, tabiat.

Annotation. The article examines the philosophical aspects of the problems of environmental safety. The content and essence of the concept of safety is revealed, the current state of the global system of environmental safety is analyzed.

Keywords: Environmental safety, philosophical aspect, society, nature.

Аннотация. В статье исследуются философские аспекты проблем экологической безопасности. Раскрыто содержание и сущность концепции безопасности, проанализировано текущее состояние глобальной системы экологической безопасности.

Ключевые слова: экологическая безопасность, философский аспект, общество, природа.

Introduction. Particular attention has been paid to the issue of safety in different periods of human development. Nowadays the content of the concept of security has expanded whereas essence narrowed. Consequently, not only by special sciences, but also by a large amount of research has established its status. This in itself has become a matter of urgency to be taken into account from a philosophical point of view.

The study of the philosophical aspects of ensuring environmental safety is also important for understanding the economic and political changes in society, the current realities and all kinds of the world around them. The life activity of a person not only radically changed the way of thinking, but also changed the surrounding world to a generally unrecognizable level. «Man alone takes his means of life infinite multiplicity, their multiplicity coincides with the basic periods of human progress». In other words, every single human period brings us closer to the increasingly new changes in the environment, to the unpredictable appearance of nature, which remains evident. In this situation, the fault is most often in a person himself. In this regard, systematic, one-clear, philosophical approaches in the consideration of environmental safety allow to determine the direct manifestations of destructive processes occurring in the system of «society-nature».

Safety research includes three levels of research: conceptual (ontological and epistemological sides), practical (as an expression of vital need), evaluation (safety philosophy, safety culture, safety idea, environmental safety).

Theoretical and methodological understanding of the safety issues of social life in a complex philosophical, social study, at different levels of conceptions, helps to qualitatively study this problem. On the other hand, the rational identification of the

philosophy of safety in a new way determines the meaning of the problem in the conditions of a new worldview from the very beginning.

Environmental safety has both philosophical (general) and special (private) sides of the study of the essence and features of the problem. For a long time, the problem of safety has been an obect of political science. In this way, there are many works on this issue by politicians and researchers. However, with the current scientific and methodological work, despite the extremely large research materials, especially political science, safety issues, unfortunately, from the point of view of philosophical reasoning, have not been studied at their level [1]. That is, a person is directly connected with the natural environment, and one part of it, human existence, life expectancy, health, longevity, is associated with the natural environment that surrounds him, more precisely, with environmental safety, which ensures the integrity of the ecological being.

Material and methods. Since the concept of «safety» has wide limits, we are talking about human protection, in particular, the future of mankind and the Environmental Protection associated with the biosphere. Security problems at the end of the XX century-at the beginning of the XXI century are regarded in the context of non-stagnant and non-linear phenomena. Safety theories are explained by a synergistic terminology that helps to understand the spontaneity of the risks that arise as a result of the complex processes of social and natural self-organization within the post-classical framework of the world.

Modern researchers, such as A.Ramanov, B.Yarochkin and other authors at the moment purpose to integrate fragmented scientific views of various objects and aspects of security into an integrated science-Securitology. According to the academic N.Moiseev: B. Bernadsky's teaching on the development of the biosphere and its possibilities of transition to a non-atmospheric state (at a time when its main processes are determined by reason) is considered one of the most important achievements of the science of the twentieth century, which is now included in the «world cartel».

Many different definitions and conceptions of safety have been associated with an increasing number of security types in the context of views on global risks. Over the next 30-40 years, the following types of security in our scholars and foreign scientific literature will be analyzed: public, international, National, Western, environmental, economic, demographic and message security [2.50].

Nature is a complex system, and man and society are the result of it. Man satisfies his needs from the account of nature. He takes from nature all that is necessary for him, and at the same time a person shows his influence in the course of his activities. These are objects that are alien to nature because of the intelligent aspiration-action, and these, Of course, do not exert their influence on nature. The rare increase in the number of peoples in the Earth's sphere, the endless riveting of Science and technology, the uneven distribution of natural resources on the territory of countries, the use of available resources as much as possible, at the same time, is subject to the acceleration of the development of society. In this way, it has led to the dependence of the law between nature and man.

At the same time, the environmental situation is all the same. Ensuring security in different spheres of public life is considered as the main issue. Basically, it was put on

the issue of ensuring the protection of the living activities of not only sociums, but also of mankind.

Environmental issues are already regional, out of the nation's circle, it has become a big problem for the whole of mankind. Man and nature are in a relationship with each other on the basis of the established laws, its violation generates irreparable environmental difficulties. The essence of environmental safety is to ensure all the needs of people, without violating the balance in nature, while maintaining ecological cleanliness. To prevent such environmental security issues, people are forced to move from tireless development to productive, orderly development on the basis of the laws of nature and society. Only in this case the narrative of human society develops without continuity, long, dimensional, natural and social crisis. This development is called Sustainable Development. To this end, people are forced to change their consciousness, legal culture, purpose and moral direction. The problem of safety has always been the focus of attention in the history of mankind, especially in matters of national and international security. They were a very big issue after the end of World War II. The reason lies in the fact that in the case of «Cold War», «peaceful coexistence» and the processes of convergence, along with military security problems, environmental, economic, demographic, information protection takes priority. The issues of survival and further security, mainly the provision of environmental safety together with socio-economic development, have been the focus of the entire world forum, which has been held several times under the leadership of the United Nations. The concept of safety defines measures aimed at eliminating this or that risk. Based on this principle, this concept expresses relations between people, aimed at a peaceful solution in the conditions of mutual respect, comfort. To ensure security, people establish norms of interaction and printouts, conclude contracts, military and social alliances that guarantee their protection, so that peoples do not attack each other. «Environmental safety at a certain level» is common with life protection, the reason for which in both cases is to protect a person from the negative harms of the Technosphere of various origins, so that together with the provision of comfortable conditions and the protection of life itself is associated with the conditions of such an environment. Based on the reason, According to V.N. Fedoseev, combining the chemical, physical, social, biological and other omillarni that exists now, directly or indirectly affects the environment, the maintenance of Health and the functioning of the human Generation [3.547].

Result. Man, as a conscious being, has complicated the process of his activity, has tried to satisfy his needs in the environment, over time the anthropogen influence on the nature of mankind has led to the detriment of our extreme environmental being. Science is the development of technology, industrial civilization, the emergence of an informed society, and the process of globalisation have all influenced each and every one of these industries, resulting in drastic changes in them. The approximation of the volume of global problems in the world, mainly the acceleration of the crisis of the ecological presence of our society the question of the survival of the human existence at what level of the ecological presence it lives on is connected with the systematic establishment of Environmental Security, which ensures the integrity of the ecological presence. Human survival has become a matter of global scale. Over the past 30 years,

the acceleration of industrialization, the increase in the volume of anthropo-impact on nature, political growth, especially the increase of the people, has been putting unprecedented pressure on the natural resources of the Earth's surface: soil, water, Taiga and other natural resources. The main reason for the violation of the natural environment is the violation of values. The pursuit of unlimited consumption of cultural wealth led to the deterioration of the natural conditions of life and the ecological crisis associated with damage to the physical and mental development of a person. Statistics show that in the last century, when the growth rate of the people was normalized, according to the data of the United Nations, by 2030 the number of world population will reach 8-10 billion, 4/5 part of which is now the population of the Cambodian States, and now 1,2 billion people suffer from hunger [4,85]. In addition, the activity of people to meet their material requirements affected an increase in the number of environmental crises, climate change. As a result, many carriers of the infection are changing their habitat: previously there were many tropical regions, now they are spreading all over the planet.

Famous scientist and writer David Kuam in his book «Spillover: Animal Infection and Nimaxt Pandemic» understand that the appearance of new viruses is an anthropoidogen feature as follows: «we attack the tropical Taiga woods and other wild landscapes, where many species of animals live, plants, and here inside the owners of nature there are many unknown viruses». We cut down trees, kill animals or put them in a cage and send them to the markets. We break down the ecosystem and force viruses to migrate from the natural environment. Because of us, they are looking for a new home, and against this background often we become their home [5].

But, despite the increased interest in environmental problems, there have been no changes to the global environmental saferty at the printsipial level in the actions of countries and in public consciousness. In addition, the aggravation of environmental problems is increasing. There are emerging new risks and problems that require their theoretical understanding and immediate solution. This can be considered by the example of the Aral Sea region. In the following years, along the coast of the Aral Sea, changes in weather, climatic conditions are felt at a certain level. The average amount of precipitation-saccharin decreased by seasons, with a decrease in sea water, the area of arid territories increased, the evaporation of water from the Earth's surface reached an average of 1700 mm per year, the humidity of air decreased by 10%. The air temperature dropped in winter and rose by 3-5 degrees in summer. In the summer season, the weather temperature reached +50 degrees on some days. One of the well-known signs of the weather on the shores of the Aral Sea is the increase in the number of dust-bearing days and the repetition of them throughout the year. In the Aral Sea region, strong winds are always observed, in the western sea regions its duration exceeds 50 days. The maximum speed of the wind reaches 20-25 m/sec. In the Aral Sea region, the quality of land and water resources decreases, the stability and structure of the ecosystem deteriorates, and environmental pollution increases. During the year, up to 90 days, Sandy, salt storms are moving, and up to 75 thousand tons of sand and salts are distributed per year into the dry sea atmosphere. From the entire drained sea territory, 39 thousand tons of salt are distributed every year. Under the sea, the island occupied fertile and grassy lands about 2 million hectares of sandy deserts. As a result

of the evaporation of seawater from the Aral Sea and strong winds, 0.1-0.5 million tons of salt rises into the atmosphere annually. According to modern observations, dust and salt storms fall up to 13-23 million tons per year, according to other estimates, from 40 to 150 million tons. Atmospheric pollution increased 6-7 times[6.358-364]. Judging by the cosmic pictures, the territory of the Aral Sea is covered with dust and salts, its plateaus are scattered in the mountainous glaciers of the Japanese island in the East, in the west, up to the Norwegian wood zones of Europe, according to further information. 80-100 thousand tons of salt, sandy dunes, rising from under the Aral Sea dried up, spread at a maximum distance of 500 km from the sea, causing a strong salinity of fertile lands of rural households [7.6].

Conclusion. This means that the solution of the issues of ensuring the protection of mankind can not be solved without the accumulation of countries of the world. The reason for the factors that are driving environmental safety is due to technological and environmental crises.

The resources of nature are not infinite, limited and many of them are not in a stable state. To change the attitude to nature, to protect all living things, to save natural resources for nature and man, to process wastes is one of the most urgent tasks of today. The preservation of the biosphere is a necessary condition for the survival of mankind. The environmentally sustainable development of mankind is regarded as a development that satisfies the demands of the present generation, does not jeopardize the opportunities for future generations to meet their demands.

Now to ensure environmental protection it is human more precisely the protection of our future existence. Today, we need to take into account the environmental aspects of its implementation, rather than futher reproduction of the industry. Restoring and preserving nature is the duty of every living person in the world. The issue of environmental security is now subject to a global level of reaction, if we leave this issue alone today, then in the future the world and human beings will be in danger.

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A MAP OF HOMOGENEOUS FIXED POINTS OF DISCRETE DYNAMIC SYSTEMS

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Annotatsiya. Ushbu maqolada diskret dinamik sistemalarining bir jinsli qo`zgalmas nuqtalari kartasi haqida so`z yuritilgan. Jahon miqyosida olib borilayotgan ko`plab ilmiy-amaliy tadqiqotlarda dinamik sistemalar keng o'rin egallaydi. Dinamik sistemalar nazariasi zamonaviy matematikaning muhim sohalaridan biridir.

**Kalit so`zlar:** matematika, modellashtirish, diskret, dinamik sistema, qo`zgalmas nuqta, tekislik, differensial tenglamalar sistemasi, metod.

Аннотация. В статье рассматривается отображение однородных неподвижных точек дискретных динамических систем. Динамические системы играют важную роль во многих научных и практических исследованиях по всему миру. Теория динамических систем - одно из важнейших направлений современной математики.

Ключевые слова: математика, моделирование, дискретная, динамическая система, неподвижная точка, плоскость, система дифференциальных уравнений, метод.

Annotation. This article deals with the map of homogeneous fixed points of discrete dynamic systems. Dynamic systems play an important role in many scientific and practical researches around the world. The theory of dynamic systems is one of the most important areas of modern mathematics.

Key words: mathematics, modeling, discrete, dynamic system, fixed point, plane, system of differential equations, method.

Introduction. Dynamic systems play an important role in many scientific and practical researches conducted worldwide. The theory of dynamic systems is explained by the fact that it is one of the most important fields of modern mathematics, firstly, it allows to reveal deep connections between different fields of mathematics, and secondly, real mechanical, physical, chemical, biological and economic processes are modeled mainly by dynamic systems.[7] The peculiarity of the theory of dynamic systems is that the mathematical model of a particular process is represented by a system of differential equations, and the study of such a system requires, in addition to the theory of differential equations, topology, differential geometry, functional analysis and even modern algebra. For this reason, the study of dynamic systems using modern methods of computational mathematics and computer technology is one of the current areas of mathematical modeling.[5]

Literature review. The concept of dynamic systems as a mathematical object was founded in the scientific work of A.Poincaré and later developed by J. Birkgoff. A.A.Andronov's scientific school also made a significant contribution to the development of the theory of dynamic systems. The scientific work of the representatives of this scientific school mainly studied the dynamic systems in the plane.[1] This direction was later followed by M.Frommer, N.N.Bautin, N.P.Erugin, L.A.Cherkas, Y.S.Ilyashenko, A.F.Andreev, a number of representatives of the Italian scientific school, S.Lefshets, F. Hartmann was also developed by the Samarkand School of Science in 1960-80 under the direction of I.S. Kukles.

Research Methodology. The research used the theory of dynamic systems, computer modeling, DN-tracking, numerical methods for solving differential equations.

Analysis and results. Let $S^{m-1} = \{x = (x_1,..., x_m); x_i \geq 0; \sum_{i=1}^{m} x_i = 1\} -$ simplex and $V : S^{m-1} \to S^{m-1} -$ quadratic stochastic operator defined by equalities

$$x'_k = x_k (1 + \sum_{i=1}^{m} a_{ki} x_i), \ k = \overline{1,m}, \tag{1}$$

where $a_{ki} = -a_{ik}, |a_{ki}| \leq 1,$

Definition 1. $V : S^{m-1} \to S^{m-1} -$ is called a generic quadratic stochastic operator if any principal minor of even order of skew-symmetric matrix $A = (a_{ki})$ is nonzero.

It follows from Definition 1 that a quadratic stochastic operator in general position forms an open everywhere dense subset in the set of all quadratic stochastic operators.[10]

Let $X = \{x : Vx = x\} -$ the fixed points of the operator V. Obviously, $X \neq \varnothing$.

Theorem 1. If V the operator is in general position, $X -$ then there is a finite set.

Consider a complete directed graph with m peaks. On the edge connecting the vertices k and i, set directions from the vertex k to the top i if a $a_{ki} < 0$, and the opposite direction if $a_{ki} < 0$, The resulting graph is called the tournament of the dynamical system (1) and is denoted by T_m. We will adhere to the notation and definitions from [2].

Definition 2. T_m is called transitive if it has no cycles. T_m is called strong if from any top i, you can go to any peak k.

Definition 3. T_m is called homogeneous if every subtournament of it is either strong or transitive.[6]

In cases $m = 2$ и $m = 3$ any tournament is homogeneous. $m = 4$ then there are 4 tournaments and two of them are homogeneous. When $m = 5$ there are 12 tournaments, 4 of them are homogeneous. When $m = 5$ there are 12 tournaments, 4 of them are homogeneous.

Definition 4. Let $\sup px = \{i : x_i \neq 0\} -$ element carrier x. Fixed point with carrier $\alpha \subset \{1, ..., m\}$ denote by x_α.

Take from X two fixed points: x_α и x_β. Let's say $x_2 \leftarrow -x_\beta$ if there is such γ for which $\gamma \supset \alpha \bigcup \beta$ and the inequality $A_\gamma x_\alpha \geq 0$ и $A_\gamma x_\alpha \leq 0$ where A is the matrix resulting from A_γ replacing all a_{ki} at $(k,i) \notin \gamma \times \gamma$. And this graph will be called the map of fixed points of system (1).

For $V: S^4 \to S^5$ let's build a map of fixed points (for homogeneous tournaments). In all cases, we count. $a_i > 0; i = \overline{1, 10}$.

$$x_1' = x_1\left(1 + a_1 x_2 + a_2 x_3 + a_3 x_3 + a_4 x_4\right),$$
$$x_2' = x_2\left(1 - a_1 x_1 + a_5 x_3 + a_6 x_4 + a_7 x_5\right),$$
$$x_3' = x_3\left(1 - a_2 x_1 - a_6 x_2 + a_8 x_3 + a_{10} x_5\right), \text{ и } A = \begin{pmatrix} O & a_1 & a_2 & a_3 & a_4 \\ -a_1 & O & a_5 & a_6 & a_7 \\ -a_7 & -a_5 & O & a_2 & a_{10} \\ -a_3 & -a_6 & -a_3 & O & a_{10} \\ -a_4 & -a_7 & -a_9 & -a_{10} & O \end{pmatrix}$$
$$x_4' = x_4\left(1 - a_2 x_1 - a_5 x_2 + a_8 x_4 + a_9 x_5\right),$$
$$x_5' = x_5\left(1 - a_4 x_1 - a_7 x_2 - a_9 x_3 + a_{10} x_4\right)$$

We put $x(a)-$ fixed point with a carrier. $\alpha \subset I$.

In this mapping, the map of fixed points has a transitive form and consists only of the vertices $x(i), i = \overline{1,5}$.

Any trajectory starting inside S^4 converges to the top $x(1)$.

II. Display $V: S^4 \to S^4$ as

$$x_1' = x_1\left(1 - a_1 x_2 + a_2 x_3 + a_3 x_4 + a_4 x_5\right),$$
$$x_2' = x_2\left(1 + a_1 x_1 - a_5 x_3 + a_6 x_4 - a_7 x_5\right),$$
$$x_3' = x_3\left(1 - a_2 x_1 - a_3 x_2 + a_8 x_4 + a_9 x_5\right),$$
$$x_4' = x_4\left(1 + a_3 x_1 - a_6 x_2 + a_8 x_3 + a_{10} x_5\right),$$
$$x_5' = x_5\left(1 - a_4 x_1 + a_7 x_2 - a_9 x_3 + a_{10} x_4\right)$$

has 10 fixed points $x_i, \left(i = \overline{1,5}\right)$ and points $\overline{x}(123), \overline{x}(125), \overline{x}(145), \overline{x}(234), \overline{x}(345)$

$$A = \begin{pmatrix} 0 - a_1 & a_2 - a_3 & a_4 \\ a_1 & 0 - a_5 - a_6 - a_7 \\ -a_7 & a_3 & 0 - a_3 & a_9 \\ a_3 - a_6 & a_3 & 0 & -a_{10} \\ -a_4 & a_7 - a_9 & a_{10} & 0 \end{pmatrix}$$

Fixed point coordinates

$$M_{123} = (a_5; \quad a_2; \quad a_1; \quad 0; \quad 0)\frac{1}{a_1 + a_2 + a_5},$$
$$M_{234} = (0; \quad a_3; \quad a_8; \quad a_6; \quad 0)\frac{1}{a_5 + a_6 + a_8},$$
$$M_{125} = (a_7; \quad a_4; \quad 0; \quad 0; \quad a_1)\frac{1}{a_1 + a_4 + a_7},$$
$$M_{345} = (0; \quad 0; \quad a_{10}; \quad a_9; \quad a_8)\frac{1}{a_8 + a_9 + a_{10}},$$
$$M_{145} = (a_{10}; \quad 0; \quad 0; \quad a_4; \quad a_3)\frac{1}{a_6 + a_4 + a_{10}}.$$

Solving inequalities $A_\gamma x_\alpha \geq 0,\ A_\gamma x_\alpha \leq 0$, define pairs of fixed points

$$A\overline{x}_{123} = \left(0;\ \ 0;\ \ a_3a_5 - a_6a_2 + a_8a_1;\ \ -a_4a_5 + a_7a_2 - a_1a_9\right)\frac{1}{a_1 + a_2 + a_5},$$

$$A\overline{x}_{125} = \left(0;\ \ 0;\ \ a_2a_7 - a_4a_5 + a_1a_9;\ \ a_3a_7 - a_6a_{42} - a_{10}a_1\right)\frac{1}{a_1 + a_8 + a_{10}},$$

$$A\overline{x}_{145} = \left(0;\ \ a_{10}a_1 - a_6a_4 - a_7a_3;\ \ -a_2a_{10} - a_8a_4 + a_3a_9;\ \ 0;\ \ 0\right)\frac{1}{a_4 + a_8 + a_{10}},$$

$$A\overline{x}_{234} = \left(-a_1a_8 + a_6a_2 - a_3a_5;\ \ 0;\ \ 0;\ \ 0;\ \ a_8a_7 - a_9a_6 + a_{10}a_5\right)\frac{1}{a_6 + a_5 + a_8},$$

$$A\overline{x}_{345} = \left(a_2a_{10} - a_3a_9 + a_4a_8;\ \ -a_{10}a_5 + a_9a_6 - a_8a_7;\ \ 0;\ \ 0;\ \ 0\right)\frac{1}{a_8 + a_9 + a_{10}}$$

or

$$A\overline{x}_{123} = \left(0;\ \ 0;\ \ 0;\ \ \pm y_1;\ \pm y_2\right),$$
$$A\overline{x}_{125} = \left(0;\ \ 0;\ \ \pm y_2;\ \pm y_3;\ 0\right),$$
$$A\overline{x}_{145} = \left(0;\ \ \pm y_3;\ \ \pm y_4;\ 0;\ 0\right),$$
$$A\overline{x}_{234} = \left(\pm y_1;\ \ 0;\ 0;\ 0;\ \pm y_5\right),$$
$$A\overline{x}_{345} = \left(\pm y_4;\ \ \pm y_5;\ 0;\ 0;\ 0\right),$$

Where

$$y_1 = \frac{a_3a_5 + a_6a_2 + a_8a_1}{a_1 + a_2 + a_5},\qquad y_2 = \frac{a_4a_5 + a_7a_2 - a_1a_9}{a_1 + a_2 + a_5},$$

$$y_3 = \frac{a_3a_7 - a_6a_4 - a_6a_1}{a_1 + a_4 + a_7},\qquad y_4 = \frac{-a_2a_{10} - a_8a_4 - a_3a_9}{a_1 + a_8 + a_{10}},$$

$$y_5 = \frac{a_8a_7 - a_9a_6 + a_{10}a_5}{a_6 + a_5 + a_8}$$

In what follows, we will use some of the concepts introduced in [2]. Depending on the signs $\{y_i\}$ we obtain the following maps of fixed points:

1) If one of $y_i > 0$, the rest are less than zero, then (Fig. 1, a, b). Means, $x(234)$ hanging top. By removing it, we have a new hanging top $x(345)$. And continuing this, finally we don't get any dangling vertices.

$\varphi_{234}(x) = x_2^{y_2} \cdot x_3^{y_3} \cdot x_4^{y_4}$ - Lyapunov's leading function.
$\varphi_{234}(x) \to 0 \Rightarrow \varphi_{345}(x) \to 0 \Rightarrow \varphi_{145}(x) \to 0 \Rightarrow \varphi_{125}(x) \to 0 \Rightarrow \varphi_{123}(x) \to 0$
are Lyapunov functions for dynamical system (1). $\omega(x^0) \subset \{x : \varphi_{234}(x) = \ldots = 0\}$.

2) If all $y_i > 0$ or all $y_i < 0\,(i = \overline{1,5})$, then the right side of the fixed point map will remain unchanged. The second part of the map consists of 5 vertices, oriented as follows: $x(234) \to x(123)$,
$x(123) \to x(125),\ x(125) \to x(145),\ x(145) \to x(345),\ x(345) \to x(234).$

Here has one more fixed point $x(12345)$.

3) In other cases, the map looks like this: a part is shown in Fig. 1, and the vertices of the left side are oriented: $x(234) \to x(123),\ x(234) \to x(345),$

$$x(123) \rightarrow x(125), \; x(345) \rightarrow x(145), \; x(125) \rightarrow x(145), \; x(234) - \quad \text{hanging}$$

top. By removing it, we get two dangling vertices.[6]

III. Display $V : S^4 \rightarrow S^4$ as:

$$x_1' = x_1 \left(1 - a_1 x_2 - a_2 x_3 + a_3 x_4 + a_4 x_5\right),$$
$$x_2' = x_2 \left(1 + a_1 x_1 - a_5 x_3 - a_6 x_4 - a_7 x_5\right),$$
$$x_3' = x_3 \left(1 + a_2 x_1 + a_5 x_3 - a_8 x_4 - a_9 x_5\right),$$
$$x_4' = x_4 \left(1 - a_3 x_1 + a_6 x_2 + a_8 x_3 - a_{10} x_5\right),$$
$$x_5' = x_5 \left(1 - a_4 x_1 + a_7 x_2 + a_9 x_3 - a_{10} x_4\right)$$

has 9 fixed points: $\overline{x}(124), \; \overline{x}(125), \; \overline{x}(134), \; \overline{x}(135),$ and $x(i)\left(i = \overline{1,5}\right).$

Definition 5. Vertices x_α и x_β are called neighboring if the following conditions are met:

1. $|\alpha \cup \beta| = |\alpha| = |\beta|.$ For example, the vertices $x(124)$ и $x(125) -$ neighboring peaks.

Let's define the coordinates of these points:

$$M_{123} = \left(a_6; \; a_3; \; 0; \; a_1; 0\right) \frac{1}{a_1 + a_3 + a_6},$$
$$M_{125} = \left(a_7; \; a_4; \; 0; \; 0; \; a_1\right) \frac{1}{a_1 + a_4 + a_7},$$
$$M_{134} = \left(a_8; \; 0; \; a_3; \; a_2; 0\right) \frac{1}{a_2 + a_3 + a_8},$$
$$M_{135} = \left(a_9; \; 0; \; a_4; \; 0; \; a_2\right) \frac{1}{a_2 + a_4 + a_9}.$$

and

$$Ax_{124} = \left(0; \; 0; \; -a_2 a_6 - a_5 a_3 + a_1 a_8; \; 0; \; a_6 a_4 - a_7 a_3 - a_{10} a_1\right) \frac{1}{a_1 + a_3 + a_6}$$

$$A\overline{x}_{125} = \left(0; \; 0; \; -a_2 a_7 - a_5 a_4 + a_9 a_1; \; a_3 a_7 - a_6 a_4 + a_1 a_{10}; \; 0\right) \frac{1}{a_1 + a_4 + a_7}$$

$$A\overline{x}_{134} = \left(0; \; -a_8 a_1 - a_3 a_5 + a_2 a_6; \; 0; \; 0; \; a_8 a_4 - a_9 a_3 + a_{10} a_2\right) \frac{1}{a_2 + a_3 + a_8}$$

$$A\overline{x}_{135} = \left(0; \; -a_1 a_9 + a_4 a_5 + a_2 a_7; \; 0; \; a_3 a_9 - a_8 a_4 + a_2 a_{10}\right) \frac{1}{a_2 + a_4 + a_9}$$

or

$$Ax_{124} = \left(0; \; 0; \; \pm y_1; \; 0; \; \pm y_2\right)$$
$$Ax_{125} = \left(0; \; 0; \; \pm y_3; \; \pm y_2; \; 0;\right)$$
$$Ax_{134} = \left(0; \; \pm y_1; \; 0; \; 0; \pm y_4;\right)$$
$$Ax_{135} = \left(0; \; \pm y_3; \; 0; \; \pm y_4; \; 0\right)$$

Imagine maps of fixed points.

1) if only one of $y_i > 0$ (or $y_i < 0$) then the map of fixed points has the form a, b.

$$\varphi_{135}(x) = \varphi_{125}(x) = \varphi_{124}(x) = \varphi_{134}(x) = 0$$ are Lyapunov functions for dynamical system (1).

2) If a $y_1 > 0$, $y_2 > 0$, $y_3 > 0$, $y_4 > 0$, then the right side of the penalty of fixed points G_υ is shown in Fig. 2 a.

The other part consists of four peaks: $\{x(124),\ x(125), x(134),\ x(125)\}$ co the next set of oriented edges $x(124) \to x(125), x(125) \to x(135)$, $x(124) \to x(134),\ x(134) \to x(135)$.

All other cases are reduced to those considered.[9]

IV. Display $V : S^4 \to S^4$ as:

$$x_1' = x_1\left(1 - a_1 x_2 - a_2 x_3 + a_3 x_4 + a_4 x_5\right),$$
$$x_2' = x_2\left(1 + a_1 x_1 - a_5 x_3 - a_6 x_4 + a_7 x_5\right),$$
$$x_3' = x_3\left(1 - a_2 x_1 - a_5 x_5 + a_8 x_4 + a_9 x_5\right),$$
$$x_4' = x_4\left(1 - a_3 x_1 + a_6 x_2 - a_8 x_3 - a_{10} x_5\right),$$
$$x_5' = x_5\left(1 - a_4 x_1 - a_7 x_2 - a_9 x_3 + a_9 x_4\right)$$

has 8 fixed points $x(i)\ \left(i = \overline{1,5}\right)$ and points $\overline{x}(1244,),\ \overline{x}(234)\ \overline{x}(245)$

$$A = \begin{pmatrix} 0 - a_1 & a_2 & a_3 & a_4 \\ a_1 & 0 & a_5 - a_6 & a_7 \\ -a_2 - a_5 & 0 & a_8 & a_9 \\ -a_3 & a_6 - a_8 & 0 - a_{10} \\ -a_4 & -a_7 - a_9 & a_{10} & 0 \end{pmatrix}$$

$$M_{124} = \left(a_6;\ a_3;\ 0;\ a_1;\ 0\right)\frac{1}{a_6 + a_3 + a_1},$$

$$M_{234} = \left(0;\ a_8;\ a_6;\ a_5; 0;\right)\frac{1}{a_5 + a_6 + a_8},$$

$$M_{245} = \left(0;\ a_{10};\ 0;\ a_7;\ a_6\right)\frac{1}{a_6 + a_7 + a_{10}}$$

$$A\overline{x}_{124} = \left(0;\ 0;\ -a_6 a_2 - a_5 a_3 + a_8 a_1;\ 0;\ -a_4 a_6 - a_7 a_3 + a_{10} a_1\right)\frac{1}{a_6 + a_3 + a_1},$$

$$A\overline{x}_{234} = \left(-a_8 a_1 + a_6 a_2 - a_5 a_3;\ 0;\ 0;\ 0;\ -a_7 a_8 - a_6 a_9 + a_{10} a_5\right)\frac{1}{a_5 + a_6 + a_8},$$

$$A\overline{x}_{245} = \left(-a_1 a_{10} + a_8 a_7 + a_8 a_4;\ 0;\ -a_5 a_{10} + a_8 a_7 + a_6 a_9;\ 0;\ 0\right)\frac{1}{a_6 + a_7 + a_{10}}$$

or

$$Ax_{124} = \left(0;\ 0;\ \pm y_1; 0;\ \pm y_2\right),$$
$$Ax_{234} = \left(\pm y_1; 0;\ 0;\ 0;\ \pm y_3\right),$$
$$Ax_{245} = \left(\pm y_2;\ 0;\ \pm y_3; 0;\ 0\right).$$

Conclusion. Imagine maps of fixed points.

1) If all $y_i > 0$ or all $y_i < 0,\ \left(i = \overline{1,5}\right)$ then the map of fixed points has the form a, b (Fig. 3)

2) If $y_1 < 0$, $y_2 > 0$, $y_3 < 0$ or $y_1 > 0$, $y_2 < 0$, $y_3 > 0$ then the right side of the fixed point map G_υ has the form. The other part consists of three peaks:

$\{x(124),\ x(234),\ x(245)\}$ oriented as follows: $x(124) \to x(234),\ x(234) \to x(245),\ x(245) \to x(124)$

The uniformity of the tournament implies the uniformity of the corresponding penalty. Thus, we obtain the following statement.[3]

Theorem 2. For $m = 5$ has 9 homogeneous fixed point charts for operators of Volterra type. The resulting dynamical systems are not topologically equivalent.

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