# ACTUAL PROBLEMS OF MODERN SCIENCE, EDUCATION AND TRAINING

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# CONTENTS

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# DEFINING THE TEACHER'S ROLE IN HIGH QUALITY PROJECT BASED LEARNING

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**Annotatsiya**: Maqolada chet tilini o'qitishda zamonaviy, tajribali chet tili o'qituvchisi o'zining 21-asr talabalarini Loyihaga asoslangan ta'limdan foydalanib o'qitishdagi roli qanday bo'lishi kerakligi yoritib berilgan.

**Kalit so'zlar**: Loyiha ishi, loyihaga asoslangan ta'lim, dizayner, yordamchi, hamkorlik qiluvchi, o'rganuvchi, aks ettiruvchi.

**Аннотация**: В статье определяется, какой должна быть роль новаторского, умелого учителя иностранного языка в обучении своих учеников 21 века с помощью проектного обучения на уроках иностранного языка.

**Ключевые слова**: проектная работа, проектное обучение, дизайнер, фасилитатор, соавтор, учащийся, рефлексивный.

**Abstract:** The article defines how the innovative, skillful, foreign language teacher's role should be while teaching their 21st century students using by Project-based learning in foreign language classes.

**Key words**: project work, project based-learning, designer, facilitator, collaborator, learner, reflective.

**Introduction.** In the 21st century language teaching has been considered as one of the biggest issues in the society. It is demanded on the language teachers be very innovative and skillful for their teaching and be very attentive to their students' needs in language learning. According to some students' considerations that deep learning is boring and complicated. Most of my teaching days are filled with overlapping student voices, surprise, and opportunity. As I observe around the room, I speak with my students who are generating and revising ideas, finding their way through the multiple stages of project creation. So we use Project-based learning as it transforms the roles of students and teachers in ways that benefit all. This de-centering of the classroom helps students develop a sense of freedom as learners and as people. It is said that if teachers maintain traditional notions of students as information recipients, teaching and learning become a pointless game where, instead of connection and engagement, the main challenge for students is to read the teacher's mind while producing a product in which they don't feel invested.[5;89]

**Literature review.** Different educational foundations have defined PBL distantly, but they all expressed the same meaning. For instance, Peterson and Meyer (1995) defined PBL as a method of instruction that allows students to be active learners, and to connect what they learn in the classroom to their real world.[7;96] Haines (1989) stated that " project is an approach to learning which complements main

stream methods and which can be used with almost all levels, ages and abilities of students"[ 9;86]. Wrigley (1998) wrote that "project-based learning involves group of learners taking an issue close to their hearts, developing a response, and presenting the results to a wider audience" [3;52]. Thomas(2000) stressed that "PBL is a model that organizes learning around projects". Boss and Krauss(2007) state that "Project based learning—powered by contemporary technologies—is a strategy certain to turn traditional classrooms upside down"[7;63].Dewey(1933) and Kilpatrick(1918) defined projects as a hands-on activity in which students learn by doing. Stoller (2006) on the other hand claimed that PBL is so versatile "that a single definition would not do justice to the various ways in which the concept can be translated into practice" [2;63]. All of these educators agreed that PBL is an ***instructional approach*** that gives the students the opportunity to experience and practice the content of their course. In short, PBL is an instructional approach that allows theory to be transformed in practice through the use of meaningful and hand on activities which are called projects.

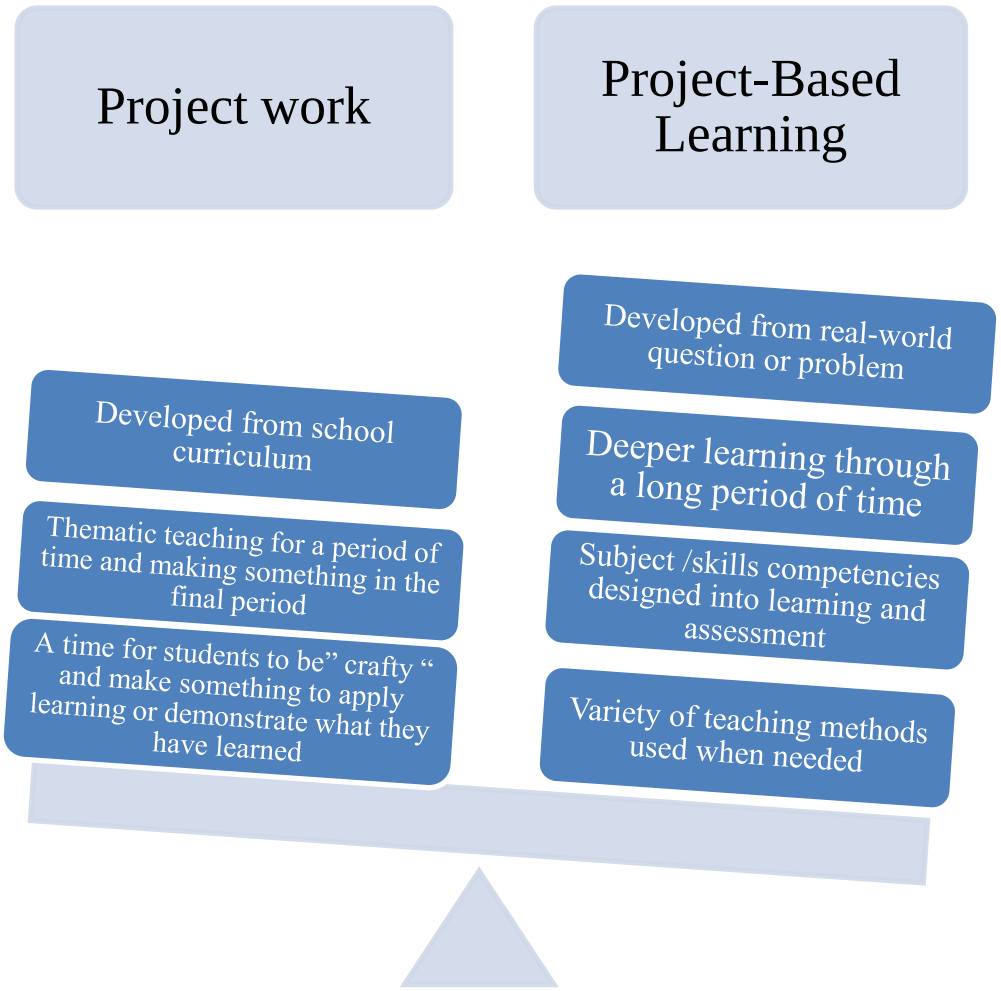
It is essential to notice that all these definitions mean, basically, the same idea regarding what PBL is and how it benefits students.

PBL is a means to inspire students' motivation and interest since it allows students to participate actively in their learning process, it works as a bridge that connects what is learned in the classroom to the real world, and it promotes students' social interaction in the society.

**Research methodology.** As Project-Based Learning gains more interest and attention from EFL teachers around the world, we often feel confused to identify a very simple and yet important question: What is the difference between doing Projects and Project-Based Learning? Some EFL teachers consider that they do projects with students and "projects don't work" as primary pedagogical method. They say:

- Students don't learn much while doing projects;
- Only the strong students are able to do projects;
- Students spend much time making products, they will never be prepared for their study;
- Working on projects all day or all week is chaos;

Maybe some of these statements are true for project works but I have never experienced these in my lessons. Here we'll try to identify why some EFL teachers have these issues. Maybe Project works are not done the same as Project Based Learning. Sometimes teachers themselves have some misunderstandings whether they use Project works as instructional tasks to improve their learners' creativity. The below mentioned diagram identifies the difference between Project works and Project based learning.




[ Diagram 1]

**Analyses and results.** When I changed my traditional teaching to nontraditional one, there was a definite change in my role as a teacher. At my using of traditional teaching, I felt myself as :

- Master of my classroom;
- Expert in my subject;
- Queen of my students;
- Driver of results

Working with project-based learning changed all my minds. My thoughts needed to change and the way I worked with students and colleagues needed to change, too. I was still a "teacher" but I needed to re-imagine my role and re-define what success was in this new environment.

Luckily, I've researched the most thoughtful, reflective and experienced PBL teachers' classes in the world. I learned a lot from them about being a PBL teacher and what was needed to grow my own competencies in project-based learning.

Loni Bergqvist has described the best PBL teachers as:

- ***Designers***
- ***Facilitators***
- ***Collaborators***
- ***Learners***

As she explained teachers are ***Designers*** in PBL means that they use project planning Toolbox before doing projects. They should create authentic learning tasks for them and understand what is engaging to students. One at the same time they enable student choice in project design and plan to support growth in both knowledge and skills.

When a teacher acts her role as a ***Facilitator*** he or she knows students individually, connectes to the needs of students daily and takes on a variety of roles and chooses based on what is needed for the learning experience. A facilitator teacher should be adaptable, dynamic, and passionate. She should creates a friendly and safe environment for all students to thrive.

***Collaborators*** are expert communicators and listeners. They are able to compromise and work with others and collaborate with colleagues, students, parents and experts outside school.

Being a ***Learner*** forever is teachers' life-long professional development and retraining. Teachers like their students should be reflective and curious to explore new project ideas and ways of working with PBL. They should have willing to take risks and make mistakes. Always having a growth mindset and sharing learning experiences with others make their language skills develop.

**Conclusion and Recommendations.** Learning how to read the world and discovering the power of one's own voice are life-changing experiences.[4;85]Designing learning that allows for inquiry, creativity, and choice allows educators to leave the front of the room and be side by side with students as they transform themselves through their work. Coming to conclusions we invite the following recommendations when teachers are PBL users:

1. Teachers create or adapt a project for their context and students, and plan its implementation from launch to culmination while allowing for some degree of student voice and choice;
2. Teachers use standards to plan the project and make sure it addresses key knowledge and understanding from subject areas to be included;
3. Teachers explicitly and implicitly promote student independence and growth, open-ended inquiry, team spirit, and attention to quality;
4. Teachers work with students to organize tasks and schedules, set checkpoints and deadlines, find and use resources, create products and make them public;
5. Teachers employ a variety of lessons, tools, and instructional strategies to support all students in reaching project goals.
6. Teachers use formative and summative assessments of knowledge, understanding, and success skills, and include self and peer assessment of team and individual work.
7. Teachers engage in learning and creating alongside students, and identify when they need skill-building, redirection, encouragement, and celebration.

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## ANALYSIS OF PHYSICAL LOAD IN TRAINING AND COMPETITION ACTIVITY IN MARTIAL ARTS IN THE CASE OF JUDO

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**Annotasiya.** Sportchilar tayyorlashda musobaqa va mashg‘ulot yuklamalarini nazorat qilish muhim fakior hisoblanadi. Mazkur maqolada dzyudochilar musobaqa va mashg‘ulot yuklamalari tadqiq etilgan. Tadqiqot natijalari shuni ko‘rsatadiki, mashg‘ulot yuklamalari musobaqa yuklamalariga nisbatan past bo‘ladi. Mazkur

tadqiqot natijalariga asoslan murabbiylar mashg‘ulot jarayonini samarali rejalashtirishlari mumkin.

**Kalit so‘zlar.** dzyudo, mashg‘ulot, bellashuv, jismoniy yuklama, tahlil, taqqoslash.

**Аннотация.** Анализирование тренировочных и соревновательных нагрузок важный фактор подготовленности спортсменов. В данной статье изучены тренировочные и соревновательные нагрузки дзюдоистов. Результаты исследований показывают, что тренировочные нагрузки меньше чем соревновательные. На основании этих показателей тренерам можно более эффективно планировать учебно-тренировочный и соревновательный процесс.

**Ключевой слово:** дзюдо; тренировка; схватка; физическая нагрузка; анализ; сравнение.

**Abstract.** Analyzing training and competition load is important factor for identifying of athletes preparedness. In this article training and competition load of judo athletes are studied. Results of the research showed that training load is lower than competition. According to these indicators coaches can planning their training and competition programs more efficiently.

**Key words:** judo; training; combat; physical load; analyzing; comparison.

**Introduction.** To pay training loads can give useful information for sportsmen during competition and training periods. Specialists are looking as significant and important part of sport. In this article are studied Heart Rate (HR) of athletes as the main factor to determine the physical load of training and competition activity. That’s why aim of the work is to study and compare parameters of physical loads in training and competition activity.

Our research results showed that training and competition loads are different from each other. Intensity of competition load more frequency than training. It shows that coaches and specialists must planning training process according to competition load.

Modern sports keeping of higher sporting results are demand scientific bases of organizing of preparing process. The main problem of judo theory and practice are to planning precompetition and competition period [1, 2, 3]. Modern sport practice and experiments shows that training and competition load are different. Also, checking work capacity of judo athletes in precompetition period is important too. Through this way coaches and specialists can organize their future preparing plan fruitfully [4, 5].

Today preparing system of sportsmen is showing that training process are changing. We consider that preparing action is increasing than ever before. In our points not only training process is changing [6, 7, 8]. According to the preparing competitions are changing. For example, competition’s number include 10-15 times in annual cycle. This factor demands from athletes to be higher sport shape during the all matches [9, 10].

**Materials and methods.** In our researches participated 19 judo athletes, and their average training experiences were 8,6±1,7 year, and their average ages were 19,8±1,6 year. Two of them were International levels, six of them were master of sports and three of them were candidates of master sports. Experiences organized during the

three weeks before competitions and during the competitions (1. “Olympic Future-2021” – Regional competition and, 2. Regional competition (Samarkand), 2021).

To study this problem we have analyzed special sources, manuscripts and other literatures. The preparing processes and practical works of the judo coaches have analyzed by us. During the preparing period we have identified the sportsmen’s work capacity using the special tests (Gench and Shtange tests).

To comparing both training and competition load we checked Heart Rate in three positions - 3 minutes before training (before), during the maximal load (during) and 3-5 minutes after the training (after), when training finish. Characteristics of physical loads classified according to the F. Zerkin’s classification [2].

**Results.** To check the athletes preparedness position and work capacity we implemented following two tests – Gench and Shtange (n=11). Test results played important role to know athletes’ preparedness (**1-table**). Both tests results showed that judo athletes preparedness were good. Taken results after tests explained that athletes preparing position were “good”. Inter correlation coefficient (r) was calculated between the test results. Between the results observed positive correlation coefficient (r=0,67). After implementing tests we checked-up training and competition load judo athletes during the training and competition periods.

**Table 1. Results of tests in precompetition period judo athletes (n= 11, r=0,67)**

| *№* | *Tests* | *Indicators* | | |
|---|---|---|---|---|
| | | ***X*** | ***σ*** | ***v%*** |
| 1 | Shtange | 44,6 | 1,9 | 0,09 |
| 2 | Gench | 37,4 | 2,2 | 0,05 |

Some authors said that to identifying the training load opens future progress and training project. According to the some authors’ points to solve this problem need to analyzing Heart Rate (HR) of athletes. To monitoring the physical load offered some recommendations by the authors.

To solve this task we measured Heart Rate of the athletes in both training and competition phases. In preparing time - a) before training, b) during the training – in maximal load phase, and, c) 3-5 minutes after training (recovery period). In competition period - a) before competition (before weight measuring); b) after combat (during the maximal load); and, c) 3-5 minutes after combat (recreation period).

Taken results showed that training and competition load different from each other. Average Heart Rate of the athletes during the training were 66,4±5,9 - in before training, 183,4±3,9 - in maximal load phase (during the training) and 70,8±2,6 - in recovery period.

In competition period Heart Rate were more higher than training. Heart Rate of athletes showed before competition (before weight measuring) - 72±2,9, after combat (during the maximal load) - 189,2±3,9 and 3-5 minutes after combat (recreation period) – 72,9±3,2. These indicators characterized that competition load is more higher than training (**2-table**).

**Table 2. Heart Rate of judo athletes during the preparing and competition period (n=18).**

| Preparing period | | | | | Competition period | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **№** | **Indicators** | ***X*** | ***σ*** | ***ν%*** | **№** | **Indicators** | ***X*** | ***σ*** | ***ν%*** |
| **1** | HR before training | 66,4 | 5,9 | 8,0 | **1** | HR before weight measuring | 72,0 | 2,9 | 4,0 |
| **2** | HR during the training | 183,4 | 3,9 | 2,1 | **2** | HR after combat | 189,8 | 3,8 | 2,0 |
| **3** | HR in recovery phase | 70,8 | 2,6 | 3,0 | **3** | HR in recovery phase | 72,9 | 3,2 | 4,3 |

According to the taken information we can characterize training load of preparing and competition process. If we analyze both the training and competition load we may see enough differences. For example, before training Heart Rate were X - 66,4, standard deviation is σ - 5,9 and coefficient of variation is ν% - 8,0. But these indicators in competition phase were more different than training. Before weight measuring Heart Rate is X-72, standard deviation is σ – 2,9 and coefficient of variation is ν% - 4,0.

During the training (during the maximal load) results were different, too. Heart Rate during the training is X - 183,4, standard deviation is σ – 3,9 and coefficient of variation is ν% - 2,1. And competition phase these indicators showed more higher than training. After combat Heart Rate were X - 189,8, standard deviation is σ – 3,8 and coefficient of variation is ν% - 2,0.

The final experiments showed that after combat Heart Rate were more higher than training period. In recovery time (after training) Heart Rate is X – 70,8, standard deviation is σ – 2,6 and coefficient of variation is ν% - 3,0. After combat Heart Rate is X – 72,9, standard deviation is σ – 3,2 and coefficient of variation is ν% - 4,3.

**Conclusion.** Results of our experiments showed that training and competition load not similar.

1) According to the Heart Rate we can identify both training and competition physical load of the athletes. Through this way coaches may plan their training design.
2) During the combat physical load more higher than training. Because, some factors influence to the athletes as like emotion, psychological depressing and so one. In our opinion this condition is stable. It is true, that judo athletes accept some emotional affect. But these position depends physiological bases as like physical load degree. Results of researches showed that competition loads more intensity than training.
3) To conclude, we restate once our belief that training and competition loads different. Coaches need to focus on to these factors for implementation their training process more efficiently.

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# THE ROLE OF MOTIVATION IN THE DEVELOPMENT OF GIRLS' BOXING SKILLS

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**Annotatsiya.** Ushbu maqolada "motivatsiya" tushunchasi, bokschi qizlarning sport bilan shug'ullanishida motivatsiyaning ahamiyati, tadqiqot natijalari, musobaqa oldi holatlarda bokschi qizlarimizning psixologik holati hamda musobaqa so'ngi

holatlarida motivatsiyaning ahamiyatliligi, muvaffaqiyatga erishish mezonlari ko'rsatilgan.

**Kalit so'zlar:** motivatsiya, boks, sportchi qizlar, mahorat.

**Аннотация.** В данной статье показано понятие "мотивация", важность мотивации в спортивной деятельности девушек-боксеров, результаты исследования, психологическое состояние девушек-боксеров в случае соревнований, а также важность мотивации в постсоревновательных ситуациях, критерии успеха.

**Ключевые слова:** мотивация, боксы, девушки-спортсменки, мастерство.

**Abstract.** This article describes the concept of "motivation", the importance of motivation in boxing girls in sports, the results of research, the psychological state of our boxers in pre-competition situations and the importance of motivation in post-competition situations, criteria for success.

**Key words:** motivation, boxing, girls athletes, skill.

**Introduction.** After gaining independence, our country has been carrying out radical reforms in all areas. Sports, science, technology and all other spheres are developing at a high level in all spheres. The Decree of the President of the Republic of Uzbekistan No. PF-4947 of February 7, 2017 "On the Strategy for further development of the Republic of Uzbekistan" [1] clearly shows the attention paid to the development of industries. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 279 "On the establishment of the Fund to support the development of boxing in Uzbekistan" [2] and Decree No. PF-5924 "On measures to further improve and popularize physical culture and sports in the Republic of Uzbekistan" [3] shows the high level of attention to sports in our country. Decree PF-6099 of October 30, 2020 "On measures for the widespread introduction of a healthy lifestyle and the further development of mass sports" recognizes the importance of physical and mental health of the population and the fact that everyone should not be indifferent to sports. It should be noted that the head of our state Sh.M.Mirziyoev pays special attention to the many opportunities provided for our youth and the conditions created for women's activities in our society.

**Literature review.** In addition, Saida Mirziyoeva, a member of the Commission on Gender Equality of Uzbekistan, Deputy Chairman of the Board of Trustees of the Public Fund for Support and Development of National Mass Media, has repeatedly stressed the need to raise the level of women's activities in all spheres. This means that we need to increase the number of our boxing girls, support them to work effectively with boxing, and give them the right and clear psychological motivation. Let our girls be able to raise the Uzbek flag in the world through boxing.

In the process of boxing, the most important thing is that coaches and sports psychologists can effectively use the motivational processes for the success of our girls boxers. Because a person's physical health and psychological health are inextricably linked.

Behind the positive work being done in the field of sports, of course, the importance of the policy pursued by the head of our country is incomparable.

Sports, fitness and physical education are important factors that have a strong impact on a person's physical and mental development.

**Research Methodology.** According to scientists, during adolescence and adolescence, a person has a strong tendency to be affected, during which the negative events that occur in his life can cause him deep emotional trauma, and its effects can last a lifetime. As the body grows physically, gender equality and differences in the life of the individual become more and more important, the worldview of the boy or girl, the perception of the environment changes. Now the teenager cannot be indifferent to the influence of others, tries to show his independence, tries to affirm it, he refuses to imitate, begins to find his way in life, to show his uniqueness, tries to find his way in life. [4].

The concept of 'motive' itself is interpreted differently by different scholars. For example, A. While Maslow [5] associated the motive with need, S.L. Rubinstein [6] considers motive to be the perception and satisfaction of this need, while some scholars consider motive to be the object of need. It is known that the concept of motive is at the heart of A. Leontev's theory of activity [7]: he considers "motive" not only as a perception of needs, but also as an objectivity that specifies a certain need for certain conditions, human activity. At this point, it can be seen that the external side of the motives is given more attention. Therefore, L.I. Bojovic's opinion is significant in that it broadens the concept of "motive." According to him, the motive can be not only in the form of external objective factors, but also in the form of perceptions, ideas, feelings, in short, internal subjective factors [8].

**Analysis and results.** Motivation is broadly regarded as the complex, multifaceted manager of human life. Human life can be governed by conscious and unintelligible states. Of these, higher-level governance is voluntary governance. To further clarify the above points, we can describe motivation as follows: Motivation is a complex, multi-level system of motivating a person to action, which includes needs, motives, interests, ideals, aspirations, attitudes, emotions, norms, values, etc. [9].

Training highly qualified boxers in boxing competitions has always been a topical issue. The training of highly qualified boxers is related to the development of physically mature, technical and tactical aspects, the correct direction of training in boxing schools and boarding schools from an early age.

Competitions place even higher demands on the body, primarily on the nervous system, than on exercises performed with a large load.

Psychological training is important in boxing. Because boxing is a martial art, it requires from the boxer not only physical, tactical and technical skills, but also courage, overcoming fear and pain, and other similar psychological training. [10].

We see that a boxer with low psychological training has not been able to fully demonstrate his skills in many competitions. Therefore, success requires a high level of psychological preparation from the boxer.

Psychological training, which combines the qualities of a boxer, such as motivation, self-esteem, sportsmanship, the ability to communicate effectively and discipline, is of great importance in boxing. For example, if a boxer's motivation is strong, he or she will continue his or her career in the sport with great interest and desire, but otherwise, the boxer may leave the sport or slow down his or her level of development.

It also allows boxer girls to overcome strong excitement and get rid of stress that negatively affects their performance skills.

**Conclusion**.This means that not only the knowledge of boxing, but also psychological knowledge and motivation are the most important of our female athletes. We know that it takes a lot of time, years, to master a boxing skill. In order to practice for years, a person must be able to motivate himself and have his own psychological knowledge so that he does not feel exhausted in relation to the chosen sport of boxing, even under the influence of external factors.

A group of motives is noted based on the characteristics that specialize in the study of sports motivation. According to A. C. Puni, the following dynamics of sports activities were identified:

1. Motives of the first stage of sports activities, encouragement to participate in sports activities. These include:

a) the motive for the emotional appeal of exercise based on a person's natural need for physical activity;

b) a duty motive determined by the need to engage in physical culture and sports;

c) a number of other motives.

1. Motives of the first stage of sports activities, encouragement to participate in sports activities. These include:

a) the motive for the emotional appeal of exercise based on a person's natural need for physical activity;

b) a duty motive determined by the need to engage in physical culture and sports;

c) a number of other motives.

Features such as insufficient understanding of the needs that are common to the initial stage motives: instability, uncertainty, and interchangeability of different satisfaction methods.

2. Further development of motives is the sustainability of the chosen sport, in which the achievement of certain achievements is associated with the expansion of specialized knowledge and skills.

3. When an athlete reaches the peak of athleticism, old motives fall into the background. The athlete's dominant defining behavior becomes the "success" motive. The athlete feels the need for extreme physical activity, experiencing a state of maximum mental stress, overcoming the opponent, weight, time, self and, most importantly, achieving high sports results. " [11]

In conclusion, not only sports knowledge but also psychological knowledge is important for our girls to engage in boxing on a regular, positive basis. Motivation is especially important.

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**UDK 37.02**

## STEM MODERNIZATION, OPTIMIZATION AND DEVELOPMENT EDUCATION IN UZBEKISTAN

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**Annotatsiya:** Ushbu maqolada miyaga asoslangan innovatsion ta’lim texnologiyasi va interaktiv ta’lim mazmunini to’plash, ishlatish va tarqatishni qo’llab-quvvatlaydigan barcha texnologiyalar uchun aqlli STEM o’quv muhitiga turli komponentlarning integratsiyasi va ma’lumotlarni yig’ish va tahlil qilish asosida fikr-mulohazalarni baholash xizmati ko’rib chiqiladi. Ushbu tahlil asosida biz o’quv muhiti, ta’lim tizimi va ta’lim yo’lini optimallashtirish muammosini hal qila olamiz.

**Kalit so’zlar:** STEM ta’limi, intellektual ta’lim tizimlari, intizomlararo yondashuv, gamifikatsiya (o’yin usullari), ekotizim.

**Аннотация:** В данной статье рассматриваются инновационная технология обучения на основе мозга и интеграция различных компонентов в интеллектуальную среду обучения STEM для всех технологий, поддерживающих составление, использование и распространение интерактивного образовательного контента и сервис с оценкой функций обратной связи, основанный на сборе и анализе метаданных. На основе этого анализа мы можем решить проблему оптимизации учебной среды, системы обучения и траекторию обучения.

**Ключевые слова:** STEM-образование, интеллектуальные обучающие системы, транс-дисциплинарный подход, геймификация (игровые методы), экосистема.

**Abstract:** This article examines an innovative brain based learning technology and the integration of various components into an intelligent STEM learning environment for all technologies that support the compilation, use and distribution of interactive educational content and a service with feedback evaluation based on the collection and analysis of metadata. Based on this analysis, we can solve the problem of optimizing learning environment, learning system and learning path.

**Key words:** STEM education, intelligent learning systems, trans-disciplinary approach, gamification (game methods), ecosystem.

**Introduction.** For developing Uzbekistan during a market economy and digitalization needs all his talents to develop creative abilities and competitiveness. He needs an innovative scientific education that enables today's and tomorrow's citizens to play a more active role in the research and innovation process, do informed choice and participate in a democratic society based on knowledge. We would like to point out two sides of the problem of promotion and correct presentation of scientific and engineering knowledge and encourage young generation to pursue careers in science, technology, engineering and mathematics (STEM), namely:

• pedagogical problem (wrong methods of teaching science) -the transition to innovative and effective teaching methods is essential for increasing the attractiveness of science education and scientific careers, as well as to increase youth interest in STEM;

• technological problem (wrong methods of studying science, misuse of information communication technology) - we should strive for a student-centered approach; Moreover, the student and his experience should be at the center of the educational process.

The world needs an innovative science education that will enable for today's and future citizens to play a more active role in the process research and innovation, make informed choices and participate in democratic society based on knowledge. Boys and girls must pursue a career in science, technology, engineering and mathematics (STEM), while adhering to the values inherent in responsible research and innovation. Thus, the Union will achieve the goal of R&D intensity of 3% of GDP, which is very important. Nevertheless, it is becoming increasingly difficult to attract enough young people to these areas and avoid the brain drain from Uzbekistan. Therefore, it is necessary transition to innovative and effective methods to increase attractiveness of science education and scientific careers and increase interest youth to STEM.

Pedagogical point of view the last decade, there have been many studies that predicted dramatic changes in educational systems:

- innovative learning: key elements for the development of creative classes in the world [1]; education for all;

- Global Monitoring Report: Education for all by 2015, will we achieve this? [2],

- creating an effective teaching and learning environment: the first results,

- "Understanding the Brain: The Birth of the Science of Learning" (OECD, 2007), One-on-One Program Implementation (Microsoft Learning Partners, 2010). And, of

course, a number of other studies: PISA, UNESCO, EU Commission, PIRLS, ICILS, TAUS, HBSC ...

**Literature review.** Much has been said about the potential of new technologies for transformation of education and training, but only a few of these claims have been confirmed by research or even verified thorough scientific research. Technology-assisted learning in mainly refers to situations where technology is used for the purpose encouraging learning. Today's term "technology-assisted learning" largely reflects what Lowyck, 2008 calls the "shared motivation (try to) use available technology for school purposes. " On this stage, we need to distinguish between two different directions: focused on technology (up to 2010) and learning-oriented (post-2010) approaches to training [3]. In a technology-driven approach, the use of technology is at the heart of education, providing access to the latest technologies.

On the other hand, in a learning-centered approach, we should primarily focus on how people learn and we perceive technology simply as an aid, as a tool for learning. Thus, it seems that the technology should be adapted to the needs of students and teachers in order to create suitable methods for work with her and a suitable pedagogical approach. In short, the majority yesterday's optimistic forecasts about the impact of educational technologies on education didn't come true. Considering these previous disappointments, when learning with technology, we must strive for an approach that aimed at students; Moreover, the student and his experience should be at the center educational process [4]. One of the main questions that are always faced teachers, was: where to start to improve the teaching process /learning? Undoubtedly, modern lessons are based on modern curriculum environment. However, the simple introduction of modern ICTs such as intelligent learning system (ITS) is not enough. Moreover, we, certainly, at least two elements are necessary in the learning process, if do not take into account the qualifications of the teacher, namely:

• Modern innovative teaching and learning methods, and pedagogy that supports and guides the use of ICT [5].

• Modern teaching materials (course / curriculum for subjects) to give ICT content, and therefore to function and accompany its true value.

**Research Methodology.** New technologies have made significant changes in educational landscape in general, and especially in the field of STEM, and approaches to education is already having a clear and positive impact on the provision of education. As a result, the educational environment is undergoing significant changes. We are witnessing a change in the way we teach education and in the ways of teaching students. While traditional lecture hall furnishings will continue to form the basis of the systems education, it will be improved through the integration of new tools and teaching methods, and will also be supplemented with many additional online learning opportunities and a wide variety of providers educational services.

New technologies, knowledge about these new technologies and approaches to education already have a clear and positive impact on the provision of education. They can support efforts through FAI grants to modernization to improve the quality and expand the coverage of education in to all Uzbekistan. And they are already starting to contribute to better quality formal and informal learning and teaching both in school and in the Internet as educational resources from around the world become more interactive

teaching tools are available and used[6]. Methods training can be better adapted to individual needs learners, and advances in learning analytics enable faster receive feedback on student progress.

New models for providing this way of teaching / learning create certain problems. But given the possibilities they are offer a more efficient way to learn and internationalize, it is imperative that government authorities consider how these opportunities learning can be more fully incorporated into the education system. New the teaching and learning model also made it possible to collect and analyze student data that was not possible before. This gives great potential for personalized learning and improvement withholding, although utmost care must be taken to students were fully aware and gave full consent to the collection and use of your personal data.

**Analysis and Results**. Finally, new technologies can facilitate closer cooperation both with global partners and on a more local level. Developing educational partnerships is essential an element of Europe's cooperation strategy with other parts of the world, and provides a mechanism for raising the level of education in countries with developing economies. At the local level, technologies can lie in based on national efforts to enhance cooperation between institutions, pooling expertise and providing more critical masses. Our specific intent for the new paradigm will be to draw attention to a form of learning that goes beyond logic and rhetorical appeal and can be best understood as chaotic transition of states in the dynamics of the brain. If we want to contribute significant changes in the learning process, which, of course, is introduction of artificial intelligence and intelligent learning systems, the current learning process must be brought to the edge of chaos and then reformulated in terms of cognitive modeling. Digital skills for learning and teaching. Providing everything staff of higher education institutions with the skills and attributes necessary for the successful use of these new technologies, and their inclusion in the course training will be essential for the successful implementation of new teaching and learning methods into normal conditions and extensions online learning opportunities. A wide range of tools, programs, technology and information sources can make it difficult for teachers to understand where to start. New technologies and related pedagogical methods require a completely different set of skills compared to more traditional training, and this can put additional pressure on the teaching staff. Not all instructors are technology experts, and in many in some cases, they did not receive pedagogical training at all. They need special training, guidance and support if they want to provide quality teaching. This is especially true since the integration of these new ways of teaching leads to a change in the role of teachers, from carriers of knowledge and subject matter experts to critical thinking mentors[7].

Most traditional electronic materials do not take into account various parameters that affect learning and learning habits human; because of this, students cannot influence the course of their learning. By this reason, within the framework of the proposed project, we will develop and implement Intelligent Learning Systems (ITS), a generation of new learning systems, which take into account the individuality of the student in the learning process, similarly what happens in a traditional individualized lesson with one teacher and one student. This traditional process of teaching people turned out to be successful and represents the most effective teaching method and

teaching from the very beginning. It is enough to mention Platon and his teachers Socrates, and then Socrates and Aristotle, Aristotle and Alexander Great, etc[8].

The results obtained were analyzed using descriptive statistics methods. Preliminary studies have successfully verified the technical operability of TECH8. It was found that the SCAMV system operated successfully and collected metadata. Problem found in stability of the system sending metadata. Due to the large number data (300-400 elements per student) some data intended to evaluate the content itself. Metadata and variables designed to adapt TECH8 to learners worked on destination. In the full-scale study, the main research question was deviation between knowledge levels in TECH8 groups (individual student learning) and traditional learning groups[9].

**Conclusion.** Our main goal is to change the philosophy of transferring knowledge in our educational system and achieve some positive social movements. Among other things, we would like to increase the speed of implementation technologies for the modernization of education and training, to promote the emergence of the creation of a digital learning ecosystem in Europe, to contribute contributing to the achievement of the goals of the Open Education initiative and increasing the quality and efficiency of the educational process (achieving higher cognitive levels of knowledge). Information and communication technologies (ICT) are already an integral part of all school systems, while e-education and e-materials are concepts without which we cannot imagine schools today. This is why it is even more important that e learning materials were prepared with high quality and were designed for active learning without direct presence teacher or with limited teacher participation; moreover, it should not perceived as an end in itself, as is often the case today. Modern studies of educational processes show that higher educational goals cannot be achieved without active participation student[10].

Therefore, in order to follow the corresponding development potential of the student, it is imperative that we constantly monitor and assessed the educational process, and also made adjustments when it necessary. This way of working is largely ensured by modern (intelligent) electronic learning materials, but only if it is correctly developed (from the point of view of pedagogy and didactics) and technologically implemented. Such material should also be evaluated user and, in case of poor results, change the path to achieving the intended goals.

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# FORMATION OF INFORMATION COMPETENCE IN STUDENTS IN HIGHER EDUCATION

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**Annotatsiya.** Ushbu maqolada o'quvchilarning shaxsiy, kasbiy va ijtimoiy hayotida uchraydigan vaziyatlarda egallagan turli xil ko'nikmalardan samarali foydalanish, o'quvchilarda axborot kompetentligini shakllantirish haqida ma'lumotlar berilgan.

**Kalit so'zlar:** kompetentlik, kasbiy kompetentlik, zamonaviy ta'lim, ijodkorlik, muammo, aqliy rivojlanish, repetitor.

**Аннотация.** В данной статье представлена информация о том, как эффективно использовать различные виды навыков, приобретенных студентами в ситуациях, возникающих в их личной, профессиональной и общественной жизни, для формирования информационной компетентности у студентов.

**Ключевые слова:** компетентность, профессиональная компетентность, современное образование, креативность, проблема, интеллектуальное развитие, тьютор.

**Abstract.** This article provides information on how to effectively use the different types of skills acquired by students in situations encountered in their personal, professional and social life, the formation of information competence in students.

**Keywords:** competence, professional competence, modern education, creativity, problem, intellectual development, tutor.

**Introduction.** One of our main tasks today is to teach students to effectively use different types of skills acquired in personal, professional and social situations, to teach independently, to independently search for the necessary information about science, to increase the necessary knowledge as a result of analysis to distinguish relevant materials, to pay special attention to the skills that employ in the event of unforeseen uncertainties, that is, in problematic situations, and to cultivate the ability to apply the acquired knowledge in everyday life. Special attention should be paid to the introduction of new pedagogical technologies at all stages of education, in particular, the effective and rational use of information and communication technologies and the achievement of high efficiency. Working to train competitive, qualified personnel in line with world standards, to raise the next generation to a high level of spirituality, to respond to changes in social life, to bring up harmoniously developed individuals who deeply understand the essence of our national values. The visiting teacher should show examples of creativity, inquisitiveness, dedication. The teacher must also have the skills and art to be able to engage the students, make the lesson interesting, and impart knowledge and education to the student.

**Literature review.** Modern society demands that the education system educate highly qualified, ambitious, competitive, enterprising, spiritually and physically healthy people. The Action Strategy for the further development of the Republic of Uzbekistan for 2017-2021 sets the task of "educating a highly educated and intellectually developed generation, creating a reserve of competent scientific and pedagogical staff in higher education institutions" [1].

The study of the phenomenon of educating the professional competence of the educator is reflected in the work of a number of scientists. Several authors have argued that professional competence, along with the qualities of credibility, characterizes a teacher's pedagogical culture as a professional-individual phenomenon. In turn, the concept of professional competence, as noted by V.A. Slasten, represents the unity of theoretical and practical readiness of the teacher to carry out pedagogical activities and describes its professional formation [2].

**Research Methodology.** Competence assessment should consider the full range of competencies that will be demonstrated in a variety of situations over a long period of time, which will be spent by the individual to achieve personal goals, rather than any particular level of competence. In this case, the specific situation a person faces has a direct impact on his development, the formation of values and the acquisition of new competencies.

The availability of competence is determined by the outcome of human labor. The level of competence of each specialist is determined by the degree to which his work meets the requirements for the final result of this professional activity. Competence is a completely new quality of professional training, the peculiarity of which is that the knowledge of a competent specialist is fast and dynamic, and they are constantly updated. It is not enough to understand the content of the problem, it is necessary to know how to solve it in a way that is acceptable in terms of competence. requires thinking [5].

**Analysis and results.** Competence - compliance with the requirements of the activity, suitability, competence. Professional competence of a specialist is a criterion

for assessing his professional training and professional maturity. Different approaches to the concept of professional competence are put forward in the scientific context. It is used as a characteristic that characterizes the specific requirements of the activity to the subject of labor or, more precisely, the attitude of the subject to the specific aspects of a particular activity. For example, research scientist E.F. Zeer's study of the functional development of professional competence has shown that in the process of professional development, different forms of competence are integrated and their connection with the qualities of a professionally important person increases. In particular, a person who determines the basic levels of professional competence, professional training and experience, self-awareness, self-confidence, correct acceptance of the shortcomings of others, and other similar professional maturity. features. The analysis of the above points allows to fully interpret the professional competence of the teacher as a set of specific features, such as personal, social, creative, methodological competence [3].

Personal competence is determined by such criteria as a person's social outlook, scientific and intellectual potential, creativity, ability to actively engage in interpersonal relationships, tactical approach to conflict resolution, the degree of formation of personal and professional qualities in accordance with professional requirements, active life and civic position .

Methodical competence - knowledge of the forms, methods and means of effective organization of educational and management processes, mastery, application in practice, qualitative analysis of the results of professional activity, study of advanced pedagogical and international experience, o It is characterized by the ability to design and successfully implement the educational process.

Creative competence (English "create" - creativity, creativity) - the acquisition of skills such as innovation, creativity, organization. Creative competence plays an important role not only in the creation of new ideas, but also in the development of a person's lifestyle or inner world.

Information competence is the level of formation of skills for independent search, analysis, selection, processing and transmission of information related to personal and professional activities, information through modern information and communication technologies.

Innovative competence - awareness of the essence of innovative processes in education, mastery of innovations in the field of professional activity and related education, active implementation in practice, literacy in the field of modern pedagogical, information and communication technologies, mastering foreign languages, appears in innovative activities.

Improving the use of innovative educational technologies in the educational process in higher education creates the need to acquire new professional competencies, such as coach, tutor, facilitator, moderator, in relation to the position of the teacher in the pedagogical process. Trainer - a pedagogical specialist who forms the skills and abilities of students on the basis of practical training (exercises), manages group activities, directs. At present, along with coaching, special attention is paid to tutoring. Tutor is an activity aimed at teaching on the basis of special educational programs, based on the individual developmental abilities of students, in contrast to coaching.

Coaching orientation is a skill that is formed as a result of a person's ability, interests, needs and strong belief in the type of activity, or "interest in the pedagogical profession" and the desire to engage in this type of activity. Today, as a result of the development of science, technology and innovative technologies, the interest in achieving the effectiveness of education using interactive methods in the educational process is growing. Interactive education is a system of interactive methods in which learners are involved in the process of learning, they have the opportunity to understand and think about what they know and think. The role of the teacher in interactive lessons leads in part to direct students' activities to achieve the objectives of the lesson [4].

Pedagogical and psychological training: forms, methods and means of teaching used in the educational process; psychodiagnostic methods of studying the student's personality; ensuring the continuity of the content, methods, tools and forms of education; basic ideas of teaching methods of sciences; pedagogical and information technologies in education; organization of seminars, practical and laboratory classes, pedagogical skills, pedagogical and psychological training, mastery of educational theory, methods and techniques, multifactorial thinking and the ability to explain their views and opinions to others on the basis of scientific discussion; special and professional, methodological and informational skills, fundamental and practical knowledge in the field of research; Knowledge and skills in modern information and communication technologies and their implementation in scientific, scientific and technical activities and the educational process. Work with gifted students: system of work with gifted students; ways and means of selecting talented students; ways to determine (select) the topics of students' term papers, dissertations and master's dissertations on academic subjects; Teacher-student method; tasks to work with talented youth; the order of the Student Olympiad; knowledge and skills about the organization and activities of scientific circles. Professional skills: goals, objectives, subject and object of the subject; basic requirements for science; the total amount of workload on the study of science, including theoretical and practical training, the weight of independent study; basic methods of science; requirements for knowledge, skills and qualifications of students in the subject; the interaction of science with the subjects in the curriculum; the role and importance of science in production; dependence of science development on information and communication technologies; basic textbooks, manuals and electronic literature used; practical, methodological significance of science; main sections of science and their content; methods of determining professional competence in science; assessment of horizontal and vertical continuity with other subjects in the curriculum in the development of the content of the subject; knowledge and skills about the problems of future development of science and their solutions [5].

**Conclusion.** In conclusion, in order to form information competence in students, it is necessary to strengthen the skills of independent search, analysis, selection, processing and transmission of necessary information related to personal activities through modern information and communication technologies.

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## PEDAGOGICAL AND PSYCHOLOGICAL BASIS OF FORMATION OF MANAGEMENT SKILLS IN LEADERSHIP IN THE FIELD OF PHYSICAL TRAINING AND SPORTS

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**Annotatsiya.** Ushbu maqola boshqaruv faoliyati masalalariga bag'ishlangan bo'lib, uning xususiyatlari o'rganiladi. Boshqaruv faoliyatining tuzilishi ko'rib

chiqiladi, modellashtirish zarurligi isbotlanadi, chunki boshqaruv subyekti tomonidan boshqaruv qarorlarini qabul qilish jarayoni muayyan vaziyat uchun samarali qarorni ishlab chiqishga asoslangan.

**Kalit so'zlar:** boshqaruv, subyekt, samaradorlik, faoliyat, tashkilot, tizim, faoliyat, shakllanish, nazoratchi, jarayon.

**Аннотация.** Данная статья посвящена вопросам управленческой деятельности, исследованы её особенности. Рассмотрена структура управленческой деятельности, доказана необходимость моделирования, так как процесс принятия управленческих решений субъектом управления основан на том, чтобы к конкретной ситуации разработать эффективное решение.

**Ключевые слова:** суправление, субъект, эффективность, деятельность, организация, система,функционирование, формирование, руководитель, процесс.

**Abstract.** This article is devoted to the issues of management activity, its features are investigated. The structure of management activity is considered, the need for modeling is proved, since the process of making managerial decisions by the subject of management is based on developing an effective decision for a specific situation.

**Key words:** management, subject, efficiency, activity, organization, system, functioning, formation, leader, process.

**Introduction.** Consistent measures are being taken in our country to popularize physical culture and sports, create the necessary conditions and infrastructure to promote a healthy lifestyle, especially among young people, to ensure the country's worthy participation in international sports arenas. At the same time, the existence of a number of systemic problems and shortcomings in the organization of physical culture and sports hinders the effective implementation of state policy in this area and the full use of the country's existing sports potential. At the same time, it is necessary to implement specific programs in the field of physical culture and sports to strengthen the health of the population, attract young people to sports and select talented athletes, form national teams with skilled athletes and coaches. There is a need to create conditions [1].

The relevance of the chosen topic is that the issues related to the introduction of management activities belong to a multifaceted set of problems, including practice and management theory, the coverage of the individual activities of the manager. Management activity is a model of professional activity, its non-standard, main and general task is determined by the importance of co-organizing the activities of other people to achieve goals and objectives, as well as the principle of hierarchy of reliance on them. Management activity is recognized as having an intellectual component, as it focuses on the development, implementation and adoption of management decisions in society aimed at changing the state and direction of social processes, people's consciousness, behavior and activities.

**Literature review.** Psychological consideration of this problem should be one of the main issues, the methodological principles of Russian psychology - the principle of unity of mind and activity B.G.Ananev A.N.Leontiev, S.L.Rubinstein This is reflected in the works of and others. According to this principle, the mental characteristics of a person are simultaneously manifested and developed in the process of his professional

activity. Research conducted by E.A.Klimova shows that during the period of adaptation to management activities, the appropriate individual activity style forms a professional and functional role, which allows it to be performed [3]. In every higher education system, every leader is individual and unique. This is due to the fact that each modern leader organizes his activities in a unique way. One of the problems studied in detail in social psychology is the different management styles. The works of German scientists G.Gibsh and M. Forverg, Russian scientists V.Parigin, L.Uminsky, M.Zhukov and others are especially noteworthy in this area.

**Research Methodology.** The socio-economic status of the individual is a strong factor in the performance of managerial activities. The importance of this is especially evident in the example of oriental culture. An ordinary citizen of our region wants to see an influential, self-sufficient and complete person in the person of a leader.

**Analysis and results.** Management activity is a system of management processes. Management processes are those that are reflected in the targeted decisions and actions taken by management leaders in a specific sequence and combination. Management activity has its own characteristics as a type of professional practical activity [3]. Their ability to adapt to changing conditions, to set goals, to form themselves, and to develop can occur in certain conditions that are rare and unpredictable in human activity.

1. *Subjectivity of management.* Any activity is subjective, so it is always done by a specific subject, and in management activities, the personal characteristics of the subjects of management, their position and professional experience are important.

2. *Management activity* - an important feature of which is the establishment of an independent goal, which is carried out by its subject. Often he independently forms the task of his movement and the task of the controlled system, divides them into tasks, represents the ways to achieve the goal.

3. *An indirect aspect of success in management activity* is that the success of management activity is considered as a managerial influence on the regulated system. This effect does not occur spontaneously, but is done to ensure the necessary behavior of the controlled system. That is, the end result of this activity is completed by the activity of the managed system. This, of course, evaluates the effectiveness of management activities. The efficiency of the work of each management entity is characterized by the efficiency of the organization it leads.

4. *The creative nature of management activities.* In fact, management practice shows that the decision-making process is inherent in its nature and it is not possible to fully model such a process because it always involves infinite factors and elements of creativity. At the same time, “limited” creativity can be largely limited by existing ethical, legal, and other norms.

5. *The need for modeling* - the process of making management decisions by the subject of management is based on the development of a specific decision for a particular situation. Of course, we would like this decision to be effective. But what does a management entity need to do to make the best decision? The current management manager is offered a set of best practices - some are set by other managers in standard situations and define effective solutions in certain situations.

6. *The results of the activities of the subject of management* are the work or joint responsibility of the subjects, objects and processes under its management. Indeed, the

subject of management is responsible for the results of its activities - the state of the managed system and the results of its activities. This issue assumes responsibility to the managed system, the internal system, and the external environment. This means that the "social" nature of this process and outcomes is a hallmark of management activity.

7. *Development and adaptation.* A distinctive feature of management activities is the importance of the development of both the managed system and the subject of management, as well as their ability to adapt to constantly changing external and internal conditions. The growth of the subject of management that he personally performs is called self-development, while the object itself or the subject of management is the realization of self-development or the improvement of the managed object.

By solving these tasks, we create conditions for organizations of the educational process [5]. The solution of each of the listed tasks is based on:

- Analysis;
- Management decision making;
- Goal setting;
- Planning and forecasting;
- Organization of performance;
- Management;

**Conclusion.** The problem of management has been studied extensively in the field of psychology, in which various theories, concepts, approaches, positions, directions have been studied. At the same time, it is important that the higher education system is represented by a leader and a leader and that the official leader should, as far as possible, organize the management process in a way that harmonizes the goals of the organization with the interests of employees. It is this factor, especially in the field of professionalism, that serves as a basis for a leader to rise to the level of leadership.

The management process begins with determining the need for action. Of course, this requires an analysis of the state of affairs. The analysis identifies the pros and cons. After that, a decision is made (what to look for, what to do first, etc.). Then a clear goal, tasks are defined, a clear activity is planned. Once a plan has been developed, work should be organized according to that plan. It ends with organization and finally execution control. In conclusion, success in any area of activity will largely depend on the employees who are able to best demonstrate the potential and intellectual ability of their subordinates to the manager.

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## DIDACTIC OPPORTUNITIES FOR THE INTRODUCTION OF CLOUD TECHNOLOGIES

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**Annotatsiya.** Ta’limda AKTlar sifatli o‘qitishni ta’minlashda o‘z hissasini qo‘shishi, axborotlashgan jamiyatda AKTlari imkoniyatlaridan keng foydalanib, ulardan ta’limni zamonaviylashtirishda va yangilashda innovatsion hamda eksperimental vositalar sifatida foydalaniladi. Bulutli texnologiyalar talablar bo‘yicha o‘zi-o‘ziga xizmat ko‘rsatish va foydalanuvchilar uchun kompyuter resurslaridan kerakli miqdorda, provayder (tizim ma’muriyati) bilan kelishuvsiz foydalanish resurslarni birlashtirish imkoniyati orqali tavsiflanadi.

**Tayanch so‘zlar**: Talim, AKT, axborot, Bulutl, hujjat, tizim, muhit, bulutli, texnologiya, component, Google docs, ma'lumotlarni saqlash.

**Аннотация.** ИКТ в образовании вносят свой вклад в обеспечение качественного обучения, широко используют возможности ИКТ в информационном обществе и используют их в качестве новаторских и экспериментальных инструментов в модернизации и обновлении образования. Облачные технологии характеризуются возможностью самообслуживания по запросу и использования необходимого количества компьютерных ресурсов для пользователей без согласия провайдера (системного администрирования) на объединение ресурсов.

**Ключевые слова:** Образование, ИКТ, информация, Облако, система, среда, облако, технология, компонент.

**Abstract.** In education, acts contribute to the provision of quality education, widely using the opportunities of acts in an informed society, they are used as innovative and experimental means in the modernization and renewal of Education. Cloud technology is characterized by the ability to provide self-service on demand and the necessary amount of computer resources for users, the possibility of combining resources without compromise with the provider (system administration.

**Keywords:** Training, ICT, information, Cloud, Document, system, environment, cloud, technology, component, Google docs, data storage

**Introduction**. The use of modern information and Communication Technology (hereinafter referred to as ICT) in the present civilized period is one of the mandatory conditions for the informatization of the educational process. In education, acts contribute to the provision of quality education, widely using the opportunities of acts in an informed society, they are used as innovative and experimental means in the modernization and renewal of Education.

Acts have the capacity to enhance the internal and external impact of the educational system in meeting the needs of the society on the educational process.

In 2004, UNESCO identified recommendations in the field of education in the information society. The interaction of teaching in mixed education can be realized on the basis of Education Management Systems (TBT) and internet technology.

**Literature review.** In this place, it will be worthwhile to clarify the concept of "distance learning system" (MOT), taking into account the first direction. That is, the MOT is an information system, on the basis of which the processes of planning (for any form of training) transfer and management of educational activities are carried out. To the mistress: "Moodle" (http://moodle.org/), "REDCLASS" (http://www.redcenter.ru/?sid=336), "Sekai" (http://sakaiproject.org/), "ATutor" (http://www.atutor.ca/) vs is an example. Moodle system I.G.Sabitova, I.L.Savostyanova, Y.A.In the research work of gorokhova, it is looked at as the basis for the implementation of a system of tools for the formation of ICT competency of students. Such systems allow to carry out pedagogical active interaction and demonstrate a wide range of tools that provide the opportunity to create and place training courses in the system[1].

The broad possibilities of redirecting to collaborative learning technologies (Messages, conversations, comments, etc.), file sharing in a variety of formats, etc., are their dealerships. Therefore, they are also not free from some shortcomings. First, teachers are often forced to work with reference to a particular interface within the framework of the specific logic of the environment. Secondly, the creation of educational components of the educational environment is present mainly in the teacher, which in some cases complicates the joint work of the educational process subjects, that is, communication can not provide for the attention of the ideology of the network community. Thirdly, the operational inconvenience of the MOT, that is, it is of certain importance (load on the server of the educational institution and problems in the system administration).

**Research Methodology.** The above-mentioned problems lead to the development of the second direction – that is, the application of internet technologies in the educational process. R when you say Internet technology N.Abaluyev, N.G.Astafyeva, N.I.Baskakova and other authors summarize "the automated environment of reception, processing, storage, transmission and use of information and their impact on the subject, which is carried out on the internet, including the machine and the elements necessary for Man (social)"[89]. In accordance with the logic of the research work, one will dwell on the direction of cloud technology - efficient and rapidly developing Internet technology-which is considered the most rational in terms of developing a

single information learning environment. According to the results of a study conducted by the CDW in the US in 2011: "only 5% of colleges and universities do not think about moving to cloud technology, 29% have developed a strategic plan for the implementation of cloud technology, and 28% have already stated that they are implementing their plans on the basis of cloud technology." Also in the Russian Federation, it is possible to highlight some of the universities that use the services of this or that cloud technology[2].

Institute of Electrical and Electronics Engineers Institute of Electrical and Electronics Engineers Institute of Electrical and Electronics Engineers (Institute of Electrical and electronics engineers) on the basis of documents Peter Mell and Tim Grans (National Institute of Standards and Technology (MSTI) Information Technology Laboratory, 07.24.11), Slepuxin and B.E.When starichenkovar says cloud technology, we are talking about " cloud services - it provides for a complete set of services provided by the cloud technology provider, which has its own interface and the ability to change the process of processing without interrupting the work of its users," they say[3].

**Analysis and results.** Cloud technology is characterized by the ability to provide self-service on demand and the necessary amount of computer resources for users, the possibility of combining resources without compromise with the provider (system administration;

Universal network access capabilities dynamic processing taqsimlash (storage devices, fast access memory, network bandwidth, etc.), data between multiple data processing centers (MQIM) taqsimlash provides access to IT resources across a variety of applications and users in a disconnected mode. Customers receive cloud services from high-tech data centers, regardless of the terminal device used by the internet. The consistency of the services (which means that they have an" unlimited "scale) implies access to the system even in the" highest " part of the requests. The list of services can be automatically supplemented or reduced without additional contacts with the supplier, or to pay attention to consumption (payment of wages)[4].

A. Y.Analyzing the overall cloud storage by Sirotkin, he showed the following advantages of their use in the teaching of students

- file exchange can be carried out in such directions as: student-student, university-student, teacher-student;
- almost no training required to work with cloud storage;
- different types of files will be supported and there will be an opportunity to publish them on the internet;
- can work simultaneously with multiple files and folders;
- information on the local computer is automatically updated when it is updated on the internet;
- if multiple users are running at the same time, updating the files will affect all users.

A.I.Gazeykina and A.S.After looking at the analogous possibilities of using cloud technologies in the educational process (for schoolchildren), govinas propose to implement Google Apps Education Edition services as an example, their implementation is as follows

- exchange of information and documents between students and teachers, including examination of assignments, advice on projects and abstracts;

- perform practical tasks on the processing of collaborative group projects of various information objects (text, tables, diagrams) ;

- discuss educational issues in real-time[5].

The possibility of increasing the communicativity and interactivity of the collective work of educators; providing the opportunity to choose a convenient time and place of study in them; knowledge management through the internet; S.A.Varakina emphasizes effective performance in the group discuss educational issues in real-time.

The possibility of increasing the communicativity and interactivity of the collective work of educators; providing the opportunity to choose a convenient time and place of study in them; knowledge management through the internet; S.A.Varakina emphasizes effective performance in the group.

Results and practical applications. The National Institute of standards and technology (NIST National Institute of Standards and Technology, USA) has identified the following classifications of clouds in a document called The NIST Definition of Cloud Computing:

- self-service on demand;
- access by wide path (access by wide network);
- (money) unification of resources (resource pooling);
- elastic State (fast elasticity) fast;
- dimensional service (measured service)[5].

Currently, cloud technology has been adopted to divide service delivery into three main models, sometimes referred to as cloud layers. These three layers are not cloud technology structuring, but reflect information technology as a wholetiradi.

Infrastructure as a service – infrastructure as a service is a set of physical resources, similar to servers, network equipment and storage devices, which are provided to the customer as services. It solves the issues of equipping the data processing center correctly and efficiently, providing computing power according to the need of infrastructure services.

Advantages. Abridged reduce capital investments in technical supply. As a rule, saving can be achieved through more efficient use of resources because virtualization methods are used in this model. Risk of loss of investments and a decrease in the period of introduction, automatic scalability.

Disadvantages. Business efficiency and labor productivity depend on the capabilities of the supplier. There is a possibility of requiring long-term potential costs. Centralization also requires new approaches to security measures.

Examples of infrastructure services include IBM SmartCloud Yenterprise, VMWare, Amazon YEC2, Win-dows Azure, Google Cloud Storage, Parallels Cloud Server etc.

Working with documents in the cloud. Two heads of the IT industry (as well as competitors) are Google and Microsoft. Both companies have released collections of services that allow them to work with documents.

Google Docs is a Free Online Office cloud file storage that includes a text processor, a spreadsheet processor, and a presentation creation internet service with file sharing functions.

This is a web application, that is, a program that works inside a web browser without installing on the user's computer, that is, an alternative version of any option Word, Excel, and so on, without the need to buy something and so on. Documents and tables created by users can be exported to Google or a file stored on a special server.

This is one of the main advantages of the program, because the entered data can be accessed from any computer connected to the internet (if the Access is password-protected)[6].

Second Microsoft Office web applications:

Microsoft Office, which is allowed to use the features of Microsoft Office web applications, is a web browser and working with documents (and not just viewing them, but also editing them) directly on the website where they are stored. So, the documents look the same as in the programs in the browser office, that is, in full, so to say, merge.

It is also worth noting that both services are closely related to Mail ( Gmail in the first case and Hotmail in the second case) and you want to use them in the storage of files Google documents, it is enough to create a free Google account and you will get a number of programs for working with texts, spreadsheets, etc.in your browser. For many, Google documents have been completely replaced, as mentioned above, by paid Ms. Office[7].

Taking into account the didactic functions that cloud technology interacts with the basic forms of teaching, it can be noted that it is an important aspect of their implementation in connection with the practical training and the Independent Education of students, which indicates that the share of universities in relation to the requirements of the state standard of Education (the percentage of students

In addition to the obvious advantages, it is worthwhile to mention the difficulties that may arise when using cloud technologies. It is necessary to pay attention to the possible methodological and organizational problems of technical (non-availability of the internet or its speed is low), competency and motivational (difficulties for teachers and lack of understanding of the expediency of using such services), meaningful (inconsistency between educational needs and content and the resources of content). Just as well, this may include the limitation of the functional features of the software (in comparison with their local similarities), as well as the lack of a legal framework for the application of cloud technologies in the educational process in general. Blocking the service provider is also considered a risk issue.

**Conclusions.** 1. Groups based on the educational process, cloud-based technologies, (economic, technical and technological and didactic) can be used.

2. The improvement of the educational process with the help of cloud technologies (storage of large amounts of data in various formats, simplification of publishing materials, the possibility of placing them on the network) is based on their didactic capabilities; orientation to groups; innovativeness and modification; unification of Sciences; informality and friendly attitude; the possibility of independently developing critical thinking; their didactic functions (teaching, information-reference, cognition, developing, educational, stimulating, stratification of the process of mastering the

teaching material and separation of its individual functions control, correction, diagnosis, self-presentation) possible complications of their use (technical, competency and motivational, methodological and organizational).

3. The use of cloud technology in the teaching of the information cycle of future economists and managers is based on the development of methodological and technological aspects, and it is at this time that this is being done adequately.

4. In conclusion ,we can say that the user (for these two services) is transferred from the usual offline environment to the online mode.

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# COMPATIBILITY OF INTERPRETATION OF THE HUMAN PSYCHOLOGY IN LITERATURE AND PSYCHOLOGY

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**Annotatsiya.** Ushbu maqolada adabiyot va psixologiya faqat inson ruhiyatini o'rganadigan ikki fan ekanligi, shuningdek, psixologiya inson xulq-atvorini o'rganib, uning sabablari va kelib chiqishlari bilan shug`ullanishi haqida so`z yuritilgan. Ilmiy ishda psixolgiya badiiy mezonlarga asoslangan inson xatti-harakatlarini tasvirlash usullarini qo'llash yuzasidagi ilmiy-nazariy xulosalar muhokama qilinadi.

**Kalit so'zlar:** psixologiya, adabiyot, psixoanalist, fantastika, psixologik roman.

**Аннотация.** В этой статье делаются научные и теоретические выводы о том, что литература и психология - две дисциплины, изучающие только человеческое сердце, что психология изучает поведение человека и его причины, а психологические методы используются в литературе для описания человеческого поведения на основе критериев искусства.

**Ключевые слова:** психология, литература, психоаналитик, художественная литература, психологический роман.

**Abstract.** This article makes scientific and theoretical conclusions that literature and psychology are two disciplines studying only the human heart that psychology studies human behavior and its reasons and psychological methods are used in literature to describe human behavior based on art criteria.

**Key words*:*** psychology, literature, psychoanalyst, fiction, psychological novel.

**Introduction.** Human intelligence cannot understand the absolute duration of movement. If the laws of any action can manage arbitrarily selected human associations, then it will be clear to a person. At the same time, the arbitrary separation of a constant interruption becomes a continuous separation that is most of the human mind and delusion. Strict adherence to such rules for humanitarian and social sciences opens up new opportunities for further expanding relations between psychology and literary sciences. Indeed, literary works are studying people, describe their inner world. Describes. The reason is that the literary work is also a product of a certain psychological state. When we are talking about the use of psychological situations in the literary work, we mean that, expressing a person's feelings, we involve students in their psychological aspects based on human realities. Therefore, the purpose of the study of psychology and literature in harmony is to fully understand the imagination, emotions and the human heart. So, on the basis of the interaction of literature and psychology, this is the assessment of literary works by means of psychology and the formation of psychological states from literary works. Such a positive result can only be achieved with the correct interpretation of specific aspects of bilateral relations.

**Main part.** Understanding the relationship between the human body and soul with their contradictions and fluctuations, the study of them for certain rules, identifying mysterious aspects is the result of a combination of only two sciences (that is, psychology and literature). The human soul and its uncharted worlds, that is, the world of imagination, committed long and detailed travel. However, both networks existed between art and science and fought for this almost a century.

It is well known that people always wanted to be able to understand and analyze the behavior of others, including probabilistic and fictional. Real and imaginary, general and exotic aspects. Human nature has always been an object of present and invaluable research experts, philosophers, artists and writers. That is why the Creator exalts human nature as an extraordinary trick. Literature is the basis of the understanding of human nature.In the article "From me to me", the literary critic and writer N. Ashonkul said: New literature is not only a new word, a new language, but also a new world, a new sense, a new way of thinking, a new height "[Eshanqul N., 2011] .

In particular, the growing idea of individual freedom, its place and value in society led to an increase in ideological and moral responsibility by personality. Returning back to the thoughts of the scientist N. Eshankul: "We run away from ourselves and go to ourselves. Our life, our thoughts are formed between these "I" pass between them and spent. We are looking for yourself externally and externally. The distance between them is very close and very far away because it covers infinity from me to me "[Eshanqul N., 2011].

There are certain factors that make it all happen. Accordingly, the psychological method plays an important role in the emergence of artistic psychologism and the development of its gradual development. In world literature, there are many methods and schools studying the process of artistic creativity, and they cover one or another aspect of literary criticism. According to Professor B. Karimov: "The psychological method in the literature (psychogenetic school) appeared in the scientific environment of Western Europe and Russia in the 70-80s of the XIX century. The school of psychology unites these views, that is, it believes that all these factors manifest themselves through a creative psyche, and therefore, the study of the creative psyche of the artist, the spiritual aspects of artistic creativity [Karimov B., 2016; 178] puts it in the center of attention. Each author represents life through its work in accordance with its goals, ideas, ideologies and values. He not only awakens emotions, but also opens the doors for reading alien and invisible peace, which helps to disclose the content of life and existence.

Based on this, we consider the artistic literature created by the author as one of the most important ways (means) of the knowledge of the person and his life, its unique experience and unique values. We will always have more information about the life of a person through his personality and the author's personal gogistics on life through the psychological situations described in the novel than about science of scientific psychology. Of course, this is our opinion. Thus, the novel is the most suitable genre for the use of a psychological approach to person. Art not only recreates life, but also forms and develops it. Thus, literature is a valuable tool for understanding the life experience that a person acquired, reaches and can achieve. Only the study of literature

will allow us to see rational, emotional, sacred and cruel dimensions of life to get human experience. The goal and the task of the writer from the work is to eradicate ignorance, delusions and false feelings.

In literary criticism of modernism, which began to have its own image object at the end of the nineteenth and early twentieth centuries, raised issues such as psychologism and psychological analysis. The dissertation on psychology in the stories of A. Kakhhor, first introduced by A. Alimuhammedov, is the first research work on the problem of psychological analysis in Uzbek literature [Alimuhammedov A., 1947; 2-3]. We see that the tradition, started by A.Alimuhammedov, began to be widely studied by Uzbek literary criticism in the 60s. In preliminary studies, psychologism was considered not at the level of a literary and aesthetic problem, but on the ability of the writer to create images of characters and psychologically reliable elements from the point of view of the nature of the nature in general, mood, portrait, landscape, internal speech, dialogue [Kushyanov M., 1965; Kuszhonov M., the standards of Yu., 1968; Shermahamedov P., 1971, etc.]. Some aspects of psychology problems were covered in research work on the interpretation of the psyche in the 70s of the twentieth century [Shodiev N., 1973; Abdurahmonova M., 1977]. In addition to the elements of psychology mentioned above, work was also done to study psychology in the context of approaches to solving problems. Psychologist is the interaction of literature and sciences of psychology. Based on this, it can be said that literary criticism and psychology - two disciplines studying the internal and external world of man. In the same time, the science of psychology studies human behavior and its causes, and the artistic literature consists of an image of human behavior based on artistic criteria in relation to Real realities. These two disciplines of the social sphere, studying the behavior and relationship of a person, the spiritual world are interconnected. The main object of the relationship between literature and psychological science is the literary work. Literary works are examined by man, circumstances and details related to it, and strive to describe their external and inner world as much as possible. For this reason, the literary work becomes an important object of a certain psychological state at a certain time. Psychological methods are widely used in literary creativity to describe the psychological state of a person. Literary critic M. Bobokhonov In his research work, psychologist in the fiction literature in three main forms: "... Congenital sign of literature; Specific expression of the author's psyche; It manifests itself as aesthetic principle, which is consciously selected by the author and determines the integrity of the work "[Bobokhonov M., 2012; 18].

The person who has passed the stages of historical development is complicated. The secular knowledge and skills of the main character are expanding and become more serious, the formation of the concept of "me", the emergence of the human I (that is, the positive side of the self-consciousness), the development of moral, political, ideological, philosophical theories and a variety of public administration led to internal conflicts. In this regard, we rely on the view of the literary critic and critic M. Kushyanov: the environment forms the nature of people, asks him a firm direction "[Kushyanov M., 1979]. A. In confirmation of our opinion, we can lead the complexity of the image of Saidi in the Roman Kachhor "Satrob". The complexity of the image of Saidi is that it is very difficult for him to make clear conclusions and decisions, because

social conditions and the system, internal contradictions and economic dependence made it such. As a person realized his identity, his material and spiritual culture also increased. Different processes in society led to a further acceleration of manifestation and development of human psychology from different sides. Growing interest in the image of the internal epics jenre.

**Conclusion.** In the literature, various concepts about emotions, reactions, stresses, concerns, intentions, desires, people and many issues related to existence are interpreted artistically interpreted. Therefore, in the artistic literature, the main material of the art, more precisely the Creator, is the science of psychology and psychiatry. Consequently, literature is the main source of experience and individual truths, and this is mainly an artistic phenomenon associated with spiritual feelings and qualities, human emotions. Based on the scientific discoveries of psychology in the world of science, it must be said that he explores the universe of literary activities, and he travels to the inner world of his heroes. Consequently, science psychology is necessary for a better analysis of literary works. Studies confirm the bilateral relationship between literature and psychology. Based on the scientific discoveries of psychology in the world of science, it must be said that he explores the universe of literary activities, and he travels to the inner world of his heroes. Consequently, science psychology is necessary for a better analysis of literary works. It should be noted that the area of literary psychology has not yet been developed, that is, this process is still at the level of terminology. For the development of this area, scientific research is needed. It will be an important step in replenishing the existing gap in the psychology of literature. In such studies, obvious similarities and features between literary sciences and psychology and psychology are discussed and the foundations are created for the emergence of new studies in this area.

Many modern artists write in areas of realism, modernism and neomophologism. In such works, the image of the soul is often expressed in two in two different ways, that is, through the principle of denial-denial or approval-approval of dialectical philosophy. Of course, each writer has its own individual style. Accordingly, one writer creates in the first one, someone in the second, and another writer is syncretically. Each writer has the right to express his ideological goal in the artistic work through nonymifologism, return to the reality of time, to Luka. In any case, the artistic reality reflected in it should be in motion.

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# THEORETICAL FUNDAMENTALS OF MULTILINGUAL TERMINOLOGICAL DICTIONARY

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**Annotasiya.** Maqola terminologik lug‘atlarning tavsifi va tasnifiga bag‘ishlangan bo‘lib, terminologik lug‘at tuzish tamoyillari va metodlari keltirib o‘tilgan. Bundan tashqari, ko‘plab lug‘atshunos olimlarning fikrlari o‘rganib chiqilgan. Shu bilan birga bugungi kun leksikografiya yo‘nalishidagi dolzarb masalalar va ularni lug‘atshunoslik sohasidagi o‘rni haqida to‘htalib o‘tilgan.

**Tayanch so‘zlar:** leksikografiya, terminologiya, glossariy, bir tilli lug‘atlar, ikki tilli lug‘atlar, ko‘p tilli lug‘atlar, terminoelemetnlar, alifbo-uyali lug‘atlar, ideografik lug‘atlar, alifbo-relyasion tartibli lug‘atlar, gipermatnli lug‘atlar.

**Аннотация.** Статья посвящена описанию и классификации, а также принципам и методам составления терминологических словарей. Кроме того, изучены мнения многих известных лексикографов. Вместе с этим рассмотрены актуальные на сегодня вопросы в области лексикографии.

**Ключевые слова:** Лексикография, терминология, глоссарий, одноязычные словари, двуязычные словари, многоязычные словари, терминоэлементы, алфавитно-ячеечные словари, идеографические словари, алфавитно-реляционные словари, гипертекстовые словари.

**Abstract.** This article is devoted to the description and classification of terminological dictionaries, and includes the principles and methods of compiling terminological dictionaries. In addition, the opinions of many lexicographers have been studied. Also, the current issues in the field of lexicography and their role in the field of lexicography are discussed.

**Keys words:** lexicography, terminology, glossary, monolingual dictionaries, bilingual dictionaries, multilingual dictionaries, terminological elements, alphabet-cell dictionaries, ideographic dictionaries, alphabetical-relational dictionaries, hypertext dictionaries

**Introduction.** Terminography is the science of the theory and practice of creating specialized terminological dictionaries. It is a complex science that combines the practice of terminology and lexicography - lexicography. Terminography is one of the most important types of human activity in the field of terminology, whose tasks are to regulate, systematize and unify scientific terminology. It is important to distinguish the following:

1) descriptive terminology: its task is to develop a clear, concise and simple interpretation of the term;

2) Recommended terminology: its function is to indicate which term should be used in the context of written and oral scientific communication.

Terminological dictionaries are compiled mainly in alphabetical order and contain scientific, technical or other field terms or their translation. Field terminological

dictionaries contain information that reflects the specific vocabulary of a particular specialty or field of knowledge.

The term is a special word (phrase) adopted in professional activities and used in special contexts. The main features of the term:

a) the specialized nature of meaning;
b) belongs to a particular terminological system;
c) connection with a clear concept.

Terms are only linguistic units that have a specific meaning. The accuracy of a term (within its own terminological field) and the intelligibility of the concept expressed by it is a feature that distinguishes it from other words.

At present, it is not easy to clearly assess the importance of terminology. Because, according to Yu. Marchuk, "every day a special dictionary is published."

**Literature Review.** VV Dubichinsky points out the main problems of modern terminology theory today:

1) development of methodological principles of creation of terminological dictionaries;
2) creation of scientifically based typology of special dictionaries;
3) development of a fixed invariant dictionary project for the creation of various special dictionaries;
4) determination of the main parameters of terminological dictionaries;
5) development of basic requirements for terminological works;
6) study the macro and micro structure of the dictionary;
7) analysis of methods of selection of terminological vocabulary;
8) development of basic techniques for describing terms;
9) the use of computerization in the compilation of terminological dictionaries.

Terminography has three main functions:

a) systematization;
b) providing information;
c) didactic-educational.

V. Morkovkin distinguishes five layers of terms that differ functionally according to the scope of the text, specialization:

a) general vocabulary;
b) general nonterminologically limited vocabulary;
c) general special terminology;
d) general industrial terminology;
e) terminology of narrow areas.

VV Dubichinsky, on the other hand, distinguishes three different terminological lexicons that differ in quality, given that the terminological dictionary belongs to only three layers:

1) general scientific and general technical;
2) sectoral terminological dictionaries;
3) special dictionaries of narrow field.

Terminological dictionaries have more perfect requirements by SV Greenev:

1) adequate coverage of special vocabulary of the chosen field of science;
2) availability of necessary information about special lexical units;
3) lack of necessary information;

4) integration of the content of the same type of dictionaries and reference devices to make it easier for the user to switch from one dictionary to another;
5) the harmony of all the elements in the structure of the dictionary and the maximum harmony between the elements.
The main stages of preparation of terminological dictionaries are clearly and succinctly described by V.M. Leichik:
1) study of the literature;
2) selection of terms and their editing;
3) compiling a card index of selected terms;
4) development of a conceptual scheme of concepts;
5) creation of the alphabetical file;
6) selection of equivalents.
VV Dubichinsky classifies the structure of terminological vocabulary as follows:
1) one-word terms;
2) terminological expressions: a) expressions-terms (copyright, fast driving, limited liability company); b) free terminological expressions (promissory note, mathematical law, disarmament measures, etc.);
3) abbreviated terms (EKUB, EKUK, AQT);
4) nomenclature (names of objects in a particular field of science (AKFA frames, Artel TV).

According to VV Dubichinsky, the choice of terminological lexicon requires focusing on the necessary requirements, such as the structure of the term, brevity, accuracy, simplicity, the ability to make, euphony (pleasant divorce), compliance with the rules and norms of literary language.
NN Abramova in her article "Formation of multilingual dictionaries and their use in cross-language search information" describes the importance of multilingual lexicographic products: "In the modern world, the role of multilingual dictionaries in globalization and integration of countries and peoples is growing. The importance of multilingual dictionaries is not limited to translation. They are used for language teaching, combining terminology in various fields of science and technology, searching for information from foreign language databases through native language queries (interlingual search). Due to the rapid development of Internet technologies in recent years, the relevance of multilingual lexicography has increased dramatically. Although there is a widespread view that all literate internet users around the world should understand English as a language of interethnic communication, this is not enough to find any information. U.S. researcher Robert Levin estimates that more than 800 million, or more than 65% of Internet users, do not speak English. In addition, the annual growth of non-English speaking Internet users has exceeded 140 million. At least half of the texts on the internet are not in English. This evidence demonstrates the urgency of creating search engines with interlingual capabilities. ”

**Research and Methodology.** Such systems are not yet widespread on the Internet. PROMT has released the first computer translation system called WebTranSite, which is equipped with a means of translating Internet search queries from English, German and French into Russian and vice versa. But the quality of the translation does not satisfy the users. The same can be said about the SYSTRAN

(Systran, USA) translation system on the Altavista server, but it has more capabilities in terms of the number of languages.

A key part of the job in developing and developing an interlingual search is compiling dictionaries. Electronic dictionaries are designed for automated use in the search for information in traditional book databases, document collections, and more. As a result, the vocabulary of dictionaries should be as close as possible to the lexical content of the texts being searched. This goal can be achieved by creating dictionaries based on texts. Creating dictionaries is a complex and time-consuming process: when it comes to multilingual dictionaries, the difficulties increase several times.

The practice of multilingual dictionary development is based on traditional dictionaries and thesaurus: they are first converted to electronic form using scanning and text recognition technologies, and then automatically converted to the desired format. All popular electronic dictionaries - for example Lingvo, MultiLex, Eckado and others - are created using this method.

The tasks facing lexicography today are related to various areas of human practice: translation, teaching native and foreign languages, computers, information retrieval systems, cultural studies, ethnography, professional communication problems, sociology, psychology and others.

“Lexicography” includes practical lexicography, which consists of the creation of dictionaries or dictionary materials, along with theoretical lexicography, which includes the theory and history of composition. VV Dubichinsky, referring to B.Yu. Gorodetsky, says: “Lexicography as a theoretical science has a complex nature: its historical and philological aspect is the typology of dictionaries, their cultural aspect is of constant interest, while its epistemological aspect is the transformation of dictionaries into knowledge accumulated by society. and as a method of demonstration, its semantic and lexical aspects are related to the generalization of lexical information in accordance with the modeling of language structure ”.

As VV Dubichinsky rightly points out, today lexicography is expanding its role, solving not only lexicographical-practical, but also information-cognitive-methodological problems. Today, lexicography is at the crossroads of information technology: computer linguistics, applied scientific experiments, general and pedagogical linguistics.

The task of the translator is not limited to mastering the equivalents of translated languages on the basis of translation dictionaries, but it is important to make optimal decisions and evaluate the whole on the basis of semantic interpretation, taking into account the national-cultural features of the language lexical-semantic system. In this context, it is important to approach the study of bilingual and multilingual dictionaries from three perspectives:

1) aspect of the addressee: what is the purpose of the dictionary, its users, the audience of its use;

2) linguistic aspect: requirements for equivalent relations between units of different languages;

3) empirical aspect: in terms of the state of perception of translation communication.

Based on these positions, V.V. Dubichinsky, following L.L. Stupin, distinguishes three main functions of the bilingual dictionary, which are the main forms of translation dictionaries:

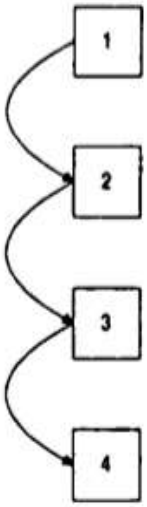
a) the function of interpretation (understanding the content of a text in a foreign language depending on the level of knowledge of the language);

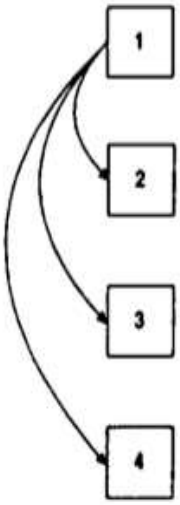
b) reproductive function (the text is transmitted to the interlocutor through translation);

c) translation function (the most difficult and important stage is the creative presentation of a text in a foreign language with a detailed semantic interpretation).

However, not only detailed semantic interpretation, but also direct approach translation equivalents, focusing on the specific features of the language pair, rapid addition (updating) of comments to the dictionary text, setting certain boundaries and rules for adequate metallicity of lexicography as a basis, etymological definition, encyclopedic information unnecessary) The lack of material is seen as an advantage of a bilingual dictionary.

**Analysis and Results.** Since VV Dubichinky served as an assistant in practical translation activities, he assesses the main function of translation dictionaries as follows:

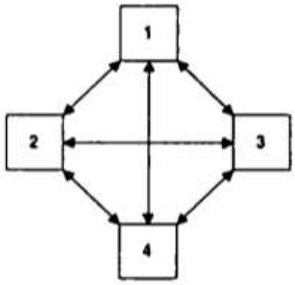



Typically, multilingual dictionaries use two different algorithms when developing a dictionary article:

Figure 1 involves sequential comparisons of a linguistic unit from one language to another, second to third, and so on. It can be seen from these diagrams that the basis in multilingual lexicography is usually a single “core” language, and this dictionary is mainly composed for that language. This is probably the user's native language. In both diagrams there is a risk of incorrect translation at any link in the chain, so the perfect algorithm for compiling a multilingual dictionary is described by VV Dubichinsky as follows:

Figure 3




According to Figure 3, cross-references in different directions help to eliminate ambiguities, while repeated comparisons in different positions of different languages help to determine translation equivalents and the adequacy of translations in general. The implementation of this algorithm is problematic due to its complexity: the more languages the dictionary covers, the lower the chance of achieving an objective lexicographic description.

There is even the idea that it is not possible to create multilingual dictionaries. For example, VP Berkov writes: “Today, the main part of dictionaries of several languages are terminological dictionaries. Due to the non-terminological but common polysemy, it is not possible to achieve perfection in compiling multilingual dictionaries. ”

This is due to the fact that the translation equivalents in different languages do not exactly match. One can partially agree with this view: the lexicographic description of a polysemantic abstract keyword requires special attention. But the possibility of creating a multilingual dictionary according to Figure 3 cannot be ruled out.

**Conclusion.** It is desirable that multilingual translation dictionaries be published not as universal dictionaries, but as dictionaries for a narrow field. Given the complexity and multifaceted nature of the translation process, the opposition to a “bilingual and multilingual dictionary” should not be ruled out altogether. Translated lexicography requires a system of rigorous science-based dictionaries: associative, regional, figurative, and many other dictionaries with different interpretations (with different semantic structure of meanings) rather than a set of lexicographical works with a theoretical and methodological orientation, including bilingual and multilingual dictionaries. does.

There is a great deal of experience in compiling multilingual terminological dictionaries in world terminology. Trilingualism of automobile and road terminology, English-Russian of useful plants, English-Russian of mathematical terms, French-Russian of public administration terms, English-Russian of linguodidactical terms, English-Russian of accounting terms, Russian-English of architectural and repair terms. French, Russian-English-German-French-Dutch terms of construction, Russian-English of applied art terms, German-Russian, Russian-English dictionaries of historical art terms and many other multilingual dictionaries. It is clear from this that in world terminography, multilingual terminological dictionaries of narrow field terms of many languages have been created. This, of course, is also a testament to the perfection of education in this field.

It is important to note that various problems of creating a multilingual terminological dictionary in world terminology and terminology have also been comprehensively solved.

From the above analysis, it is clear that multilingual terminological dictionaries differ from monolingual terminological dictionaries in their structure, the content of the dictionary article, and the nature of the explanatory and illustrative examples. However, a common feature for monolingual and multilingual terminological dictionaries is that this dictionary consists of only terms.

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# PARADIGMATIC PROPERTIES OF DEICTIC UNITS IN THE TEXT

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**Annotatsiya.** Ushbu maqolada deyktik birliklarning matndagi paradigmatik xususiyatlari haqida so`z yuritilgan. Shuningdek, pragmalingvistikada til birligining nutq vaziyati, kontekst bilan bog‘liq holda o‘rganuvchi masalalaridan biri deyksis nazariyasi ekanligi, pragmalingvistikada til birliklari orqali kommunikativ muloqot ishtirokchilari, muayyan voqelik, u amalga oshirilgan vaqt, o‘rin kabilarga ishora qilish deyksis hodisasi sifatida, tilning ishora birliklari esa deyktik birliklar tarzida talqin etilishi muhokama qilingan.

**Kalit so`zlar:** deyktik birliklar, pragmalingvistika, paradigmatik xususiyat, tilshunoslik, deyktik iboralar, nutq, matn, muloqot.

**Аннотация.** В этой статье обсуждаются парадигматические особенности дейктических единиц в тексте. Также важно отметить, что в прагмалингвистике речевая ситуация языковой единицы, один из вопросов, изучаемых применительно к контексту, - это теория дейксиса, обсуждаются интерпретация конкретной реальности, времени, в котором она имела место, место и т. д. как феномен дейксиса, а также интерпретация знаковых единиц языка как дейктических единиц.

**Ключевые слова:** дейктические единицы, прагмалингвистика, парадигматический признак, лингвистика, дейктические фразы, речь, текст, коммуникация.

**Abstract.** This article discusses the paradigmatic features of deictic units in the text. It is also important to note that in pragmalinguistics, the state of speech of a language unit, one of the issues studied in relation to the context, is the theory of deixis, the interpretation of a particular reality, the time at which it took place, the place, etc., as a deixis phenomenon, and the interpretation of the sign units of language as deictic units are discussed.

**Key words:** deictic units, pragmalinguistics, paradigmatic feature, linguistics, deictic phrases, speech, text, communication.

**Introduction.** One of the areas of modern linguistics that studies language units in relation to the human factor is pragmalinguistics, in which language units are studied in relation to the state of speech and context. In pragmalinguistics, the state of speech of a language unit and one of the issues studied in relation to the context, is the theory of deixis. In pragmalinguistics, the use of language units to interpret participants in communicative communication, a particular reality, the time, place, etc., is interpreted

as a deixis phenomenon, and the sign units of language are interpreted as deictic units ”[8, 16].

The main task of deictic means is to connect language units with reality in the process of communication and to express a subjective attitude towards it. The use of deictic phrases is important for the correct formation of speech.

**Methods and literature review.** It is well known that the classification of deictic characters in linguistics is one of the most discussed issues. Many linguists have traditionally divided deixis into deixis of person, time, and space. In this article, we analyze the deix of personality and the language units that represent it on the example of the literary text of Alisher Navoi's works.

When we talk about the deix of a person in linguistics, we see that some linguists have studied it in relation to the deix of a subject. In particular, A.A.Kibrik sees the deix of the person as an aspect of the deix of the subject. A.A.Kibrik admits that pointing to a person and an object creates an object dexterity. [7] In our view, personality and object dexterity are separate types of dexterity, because dexterity is the person at the center of the field. This requires the study of personality dexterity as a separate type of dexterity.

**Research results.** Each language has a number of linguistic units that express the meaning of the person, as well as units that refer to the person in the process of speech communication. Accordingly, linguistics distinguishes between units of language that directly express a person and units that indirectly refer to a person in the process of communication.

Certain language units are used in spoken communication to refer to a specific person. The result is personality dexterity. The units referring to the person are interpreted as the deictic units representing the deix of the person.

In Uzbek, deictic units referring to a person are wide-ranging, including person and show pronouns, *hech kim, hech qaysi* indefinite pronouns, *allakim, kimdir, birov* suspect pronouns, *kim* interrogative pronoun, *hamma, barcha, bari* designation pronouns, personal pronouns, as well as personal-numerical indicators of the verb, possessive suffixes, famous horses , jump quality, jump numbers can be entered. The most common of these is the personal pronoun.

It is well known that personal pronouns refer directly to the person in the speech, and it is through the context that the person they are referring to emerges. This can be seen in the example of Alisher Navoi's lyrical legacy: *“Sanoye’ va aruz fanida barcha el ani musallam tutarlar erdi. Aning tab’i diqqatini har kishi bilay desa “Shabistoni xayol”*. (Majlis un-nafois) Although it is known that the pronouns **ani** and **aning** in these bytes refer to a person, it is possible to tell which person they are referring to by the preceding sentence. Compare: *“Mavlono Yaxyo Sebak – Xuroson mulkining rangin fozili erdi, ko‘p ulum va fununda mohir erdi. Sanoye’ va aruz fanida barcha el ani musallam tutarlar erdi. Aning tab’i diqqatini har kishi bilay desa “Shabistoni xayol”*. (“Majlis un-nafois”).

It is understood that the speech situation is important in determining what the context circle deictic characters are referring to.

In some cases, personal pronouns may be dropped in the text. In this case, the function of pointing to the speaker's personality is assumed by personality figures [6,

60]. For example: *"Mavlono Sulaymoniy – Bobur Mirzo xizmatida bo'lur erdi. Va badihani ravon aytur erdi".* " ("Majlis un-nafois"). The personal pronoun *Men* refers to the first person in the text - the speaker. Sometimes the rhyme is dropped in the text, and the person-number suffixes of the verb take on the function of pointing to the person. For example:

*Ishq tarkiga qilurmen tun-u kun ko'ngluma tuhmat.*

*Ki, otin tutmag'ay el tutsa bu oyin bila shuhrat.* (Alisher Navoi, "Favoyid ulkibar", p. 56) As we can see, Navoi used the old Turkic form of the first-person affix *-man,* which represents the first person, *-men.* This index refers to the person in the text, the speaker and forms the deix of the person.

In conversation, instead of the pronoun *men,* words such as *faqir, bandayi ojizingiz, telba, kamina, qulingiz* sometimes refer to a person. For example: *"Mavlono Baqoiy kamongarlikka mashhur va o'zini muammoiyliqqa ham shuhrat berdi. Ammo faqir hargiz andin maummoki, nimaga yaragay, eshitmadim*. (Majlis un-nafois). The word *faqir* in this example refers to the speaker and forms the deix of the person. It should be noted that this unit also referred to the social status of the speaker, resulting in a dexterity of social status. This means that the deictic unit used in this microtext refers to the individual and social deixis. The following example can be seen in the following example: *"Bir kun ham mazkur bo'lg'on taqrib bila Sultoni sohibqiron Oliy majlislarida banda bu so'zni arz qildimkim, bir kun Mavlono Lutfiy Mir Xusravdin bu nav' g'arib ma'ni naql qildi, deb".* (Alisher Navoi, Majlis un-nafois, p. 202) In the example given, the *banda* lexeme performed the same function as the *faqir* deictic unit above. This lexeme also serves a deictic function, referring to the speaker as a person; created social dexterity by referring to the social status of the speaker. There are many such examples in Navoi's works. Because the poet refers to himself through these units, the creator does not consider himself superior to others, that is, through these units the qualities of humility are manifested. The analysis of such examples reveals new units that give rise to dexterity, as well as the poet's eloquence.

Analyzes show that in speech, the formation of the personal deix of the verb's personal pronouns is more active than the pronouns. However, the speaker effectively uses the pronoun I to convey to the listener his communicative goals, such as revealing his inner self, emphasizing his personality [6, 60]. This can be seen in the following example: *Vahki, davron ahlidin juz bevafolig' kelmadi, Har nechakim, ko'rdilar men zori hayrondin vafo.* (Favoyid ul-kibar, p. 28) In the following verse, the speaker contrasts himself with other speakers: *Manga davron og'u berdi, anga no'sh, Men etsam zahrxand, aylar shakarxand.* (Alisher Navoi, "Favoyid ul-kibar, p. 91)

It is clear from the examples that the function of the personal pronoun *men* is broad and that its function is expressed through context.

In both of the above examples, this personal pronoun formed the person deixis. The interrogative pronoun refers to a specific person in the text and the person to whom it refers is determined by the context. In the following verses, along with the pronouns referring to a person, it is clear *kim* the interrogative pronouns are referring to a particular person: *Kimki, yetkay ishq dard-u dog'idin ofat anga, Dog' mehri saltanatdur, dard erur sihhat anga.* (Alisher Navoi, "Navodir ushshabob", p. 7) These verses use several deictic units, such as *kimki, anga* in the first verse and *anga* in the

second verse. He formed a personal deix, pointing to a man in great pain. This means that Alisher Navoi wisely used interrogative and demonstrative pronouns as a deictic tool. As we have seen, the above deictic tools are very important in deciphering the content of bytes. In some cases, the speaker uses the pronoun *we* instead of the pronoun *I*, referring to himself. For example: *Sud qildi ulki ichti vasl bazmi ichra may, Bizga soqiy tutmadi bu sog'ari sahbo, ne sud.* The court ruled over the nation during the feast of May. (Alisher Navoi, Badoe' ul-vasat, p. 96) Some nouns are used in the text to refer to a specific person and act as deictic units, which are also pure deictic units. We can see this in the following verse: *Jomi Jam ichra Xizr suyi nasibimdur mudom, Soqiyo, to tarki joh aylab gado bo'ldum sanga.* Jami Jam, Hizr, refers to a specific person and forms a personal deix.

The reader, who is somewhat familiar with the literature and history, immediately imagines the person named above, and quickly learns to whom Jami Jam is referring through the horses of Hizr. The fact that famous horses point to the deix of a person can be seen in the following verses: *G'ussa changidin navoye topmadim ushshoq aro, To Navoiydek asir-u benavo bo'ldum sanga.* In this verse, the word Navoi refers to the poet, to the speaker himself. Through this deictic unit mentioned in this verse of the ghazal, the reader gets to know the author of the ghazal. As you can see, nicknames can also be considered as a deictic unit referring to a person. In the scientific literature, it is noted that the title of a work of art also serves a deictic function.

According to R. Davlatova, a scholar who has studied deictic units in the Uzbek language, a title consisting of human names refers to a work of art, forming a deix of the subject and a deix of the person referring to the person named [6, 61]. Alisher Navoi's creative heritage includes such works. Navoi's friends Hasan Ardasher and Pahlavon Muhammad are mentioned in the titles of Navoi's "Holoti Sayyid Hasan Ardasher" and "Holoti Pahlavon Muhammad". Apparently, these headlines refer to a specific person and form a personal deix.

In Uzbek, numbers are also considered as a unit that can refer to a person's dexterity. The following is an example of our opinion: *Tushtilar bir yo'l aro ikki rafiq, Biri edi yo'lsiz, biri sohib.* (Alisher Navoi "Lison ut-tayr" p. 75). In this passage from Alisher Navoi's "Lison ut-tayr", the number one used in the second verse refers to the part before it – *"ikki rafiq"* resulting in a personal deix. In the following verses, the numbers refer to both the preceding and the following parts: *Biri noqisvash, biri komil sifot, Onga Mudbir munga Muqbil erdi ot*.(Alisher Navoi "Lison ut-tayr" p. 75)

Apparently, the numbers refer to the words *ikki rafiq* before him and to Mudbir and Muqbil in the second verse. This means that the identity of the person to whom the numbers refer is determined by the text.

**Conclusion.** From the above, it can be concluded that the use of deictic units referring to a person in a certain text prevents speech ambiguity, ensures the integrity and coherence of the text, and increases the content of the text. Alisher Navoi's use of deictic units in his works has ensured the art and consistency of the text. The use of deictic characters in a literary text encourages the reader to think and observe.

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# THE ROLE OF SHAMS TABRIZI IN JALALIDDIN RUMI'S BECOMING A HIGH THINKER

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**Annotasiya:** Ma'lumki, insoniyat tarixida bir insonning boshqa dinda, boshqa mazhabda, boshqa o‘lkada istiqomat qilishiga qaramay, ikkinchi bir insonga xoh ijtimoiy, xoh siyosiy, xoh ma'naviy, xoh iqtisodiy jihatdan ta'sir o‘tkaza olishi, ko‘mak yoki quvvat bera olishi hayratlanarli hodisa emas, albatta. Ammo bunday jarayonlar ba'zan olamshumul kashfiyotlarning amalga oshishiga, buyuk g‘oyalarning tug‘ilishiga sabab bo‘ladi, jamiki bashariyat uchun “ma'naviy meros”ga aylanadi. Mazkur maqolada Jaloliddin Rumiy va Shams Tabriziy o‘rtasidagi do‘stona muhabbat hamda ustoz-shogirdlik munosabatlari haqida so‘z boradi.

**Kalit so‘zlar:** tafakkur, irfon, tasavvuf, do‘stlik, ustoz-shogirdlik, muhabbat, qadriyat, ma'naviy meros, sufizm.

**Аннотация:** Как вы знаете, в истории человечества нет ничего удивительного в том, что человек может влиять, поддерживать или расширять возможности другого человека, будь то в социальном, политическом, духовном или экономическом плане, независимо от того, исповедует ли он другую религию, мазхаб или страны. Однако такие процессы иногда приводят к осуществлению универсальных открытий, рождению великих идей и становлению «духовным наследием» всего человечества. Эта статья о дружеской любви и отношениях учителя и ученика между Джалалиддином Руми и Шамсом Тебризи.

**Ключевые слова:** созерцание, гнозис, мистицизм, дружба, учитель-ученичество, любовь, ценность, духовное наследие, суфизм.

**Abstract:** As you know, it is not surprising in the history of mankind that a person can influence, support or empower another person, whether socially, politically, spiritually or economically, regardless of whether he shares another religion, *madhhab* or country. However such processes sometimes lead to the realization of universal discoveries, the birth of great ideas, and becoming “spiritual heritage” for all mankind. This article is about the friendly love and teacher-student relationship between Jalaliddin Rumi and Shams Tabrizi.

**Keywords:** contemplation, gnosis, mysticism, friendship, teacher-discipleship, love, value, spiritual heritage, sufism.

**Introduction.** It is common knowledge that today a special attention is paid to the development of spiritual and educational spheres in almost all countries of the world. In particular, a number of activities are being carried out to study and research the scientific heritage of great thinkers, preserve and translate ancient manuscripts, accepted as our spiritual heritage, and form a culture of reading books among young

people. Such processes serve as an important tool in the formation of the methodology of spiritual and philosophical discourse in the system of philosophical science.

In particular, one of the great figures of the medieval Muslim East, Jalaluddin Rumi's spiritual heritage, the mystical-philosophical views, inspired mankind for a healthy faith, high spirituality, strong contemplation, solidarity, harmony and tolerance. The rumor of this rumor has so far been widely acknowledged by his study of her spiritual heritage that she has lost her dignity. If we read and analyze any of the mystic manuscripts, we will be convinced that their main idea is to encourage Rumi to live in harmony with the human and its principles of peace, harmony and religious tolerance. This, in turn, is the main reason Jaloliddin Rumi is a favorite for all nations and peoples.

**Literature Review.** Shams-e Tabrizi also played an important role in Jalal ad-Din Rumi's transformation into a great thinker and scholar. Several resources provide with valuable evidence about their meeting, sympathy to each other, and mentorship relationship. Jalal ad-Din Rumi describes Shams-e Tabrizi as follows: "He is an enthusiastic Sufi who has received his high divine inspiration from the Malamati tariqa in Khorasan, dressed himself in divine love and charm"[1:p.26].

It was his meeting with the dervish Shams-e Tabrizi on 26 November 1244 (624 hijri) that completely changed his life. When Mawlana met Shams-e Tabrizi, he became a completely different person. Rumi was transformed into an ascetic. Fatwas and sermons were replaced by music, melodies and dances. Their first meeting place at present is located in the Saljuqpalas Hotel in Konya, in front of the Ministry of Education building, and the place is now popularly known as the "Marja al-Bahrain" – "the meeting of the two seas". Scientists who study Rumi point out that there are many legends and stories about the meeting of those two friends and the most reliable among them was the story narrated by Mulla Hindistoni.

**Research Metodology.** In several sources the first meeting between Jalal ad-Din Rumi and Shams-e Tabrizi was recorded as a historical event because that meeting helped Mawlana to "unravel the handcuffs" of rational thought and transcend him to the world of divine enlightenment. However, it should be noted that Rumi went through the stage of internal preparation for that meeting where his master Burhan id-Din Muhaqqiq contributed a lot. He was a great mentor who could awake Jalal ad-Din Rumi's interest in the works and philosophy of Farid id-Din Attar and Sheikh Sanoi.

They had a long conversation after that meeting, and both admitted that a new world had been discovered in their lives. Usman Nuri Tupbosh writes as follows: "Shams-e Tabrizi introduced himself and his values to Mawlana Jalal ad-Din Rumi and untied the chains on his feet because Mawlana was like an eagle ready to fly when he met the great master. Shams-e Tabrizi helped him go out of his heart fence by releasing the chain rings on his legs. After that, Mawlana began to burn like a moth around the light in the charm of the divine representation of Shams-e"[7:p.190]. Shams-e Tabrizi forbad Jalal id-Din to read all the books that he was reading, and took him into the world of mysticism by saying, "These books have spoken their word, now it is time to say your word". Rasul Hadizada explained two reasons why Jalal ad-Din Rumi entered the world of mystic knowledge. According to the scholar, firstly, it was the impact of

Shams-e Tabrizi, and secondly, the science of mysticism was widespread during Rumi's period that is in the XII-XIII centuries when all the scholars of that time studied that science. Those hard days it was a bit difficult to openly express scholastic theology and philosophical considerations. In that process, the science of mysticism became the only way to reveal mystical vision. Shams-e Tabrizi was also aware of the Ladun knowledge (ʿilm ladunī ), and therefore he never settled in one place for a long period of time. That is why he was also known as "Bird" or "Flying Shams-e" among people. But Jalal ad-Din Rumi praised him as "Sultan-ul Gadoyin" and "the king who is both a commander-in-chief and an army – the king of an army of the sun and light". Jalal ad-Din Rumi created his greatest mystical poem "Maṭnawīye Ma'nawī" (Spiritual Couplets) under the influence of the spiritual connection between him and Shams-e Tabrizi and the education he received from Tabrizi. The great mentor handed in the "key" to Rumi in solving many scientific and religious problems. According to Aflaki Ahmad Dada's "Manaqib-ul-Arifin", December 5, 1247, was the last day of Shams-e Tabrizi on earth because he was killed by his enemies that night. After that event Jalal ad-Din Rumi, mourned a lot for his best friend's death, and started living with *ishq* (love) to his friend for the rest of his life. The death of Shams-e Tabrizi was a mental ruin for Rumi [3:p.93]. When Rumi lost his best friend, he started to compose figurative and sensitive *ghazals* (Persian poems), saturated with mystical symbolism but filled with sincere human feelings. The historians have compared the meeting and sincere friendship of Jalal ad-Din Rumi and Shams-e Tabrizi to the meeting of Socrates and Plato, Goethe and Schiller. Jalal ad-Din Rumi paid tribute to his friend in the following way: "Shams-e Tabrizi showed me the way of truth. I am indebted to him for my faith and knowledge. There is no difference between me and Shams-e. If he's the sun, I'm a particle. If he's the sea, I'm a drop of it. The light of the particle comes from the sun. The life of a drop is from the sea". Shams-e Tabrizi also praised his friend with the following compliments and in that way expressed his big respect to him: "I have never met anyone like Jalal ad-Din Rumi. The only one I met was Mawlana".

Shams-e Tabrizi was the person who revealed his splendid talent of divine love and harmonized Jalal id-Din's passion for asceticism and *riyadh* (doing good deeds and abstaining from sinful ones) with outward and inward love. Overcoming the self in order to experience Allah directly is an indescribable concept. Mawlana, collecting pearls from the sea for his ghazals signed them under the pseudonym "Homush" (sad, wailful). When he expressed his divine love to the Perfect one he described his inward state as "Be like me and know this". Both Mawlana and Shams-e Tabrizi were united in the river of divine love and its manifestation. "Mawlana Rumi's love for Shams-e Tabrizi is like the love of Musa (Moses) for Khidr"[4:p.28]. Azmi Bilgin, in his research on the inner love between Rumi and Tabrizi, writes the following: "Although Prophet Moses had a high degree of prophetic and messenger abilities, and Kalamullah (Qur'an), he placed Khidr at the top of these ranks among the servants of Allah. Mawlana's Khidr was Shams-e Tabrizi"[5:p.28].

**Analysis And Results.** Due to his endless love for his friend, Jalal ad-Din Rumi spent most of his time with Shams-e Tabrizi being involved in different conversations and forgetting about his responsibilities and activities in madrassa. When Mawlana was accompanied by Shams-e Tabrizi, he was passionately immersed in the world of As-

Sama' dance, *ney* (reed flute) melodies and enchantment of *rubab* (Afghan national musical instrument). Yahya Kemal describes this state of Mawlana in the following way:

*Bu damki shavq ila tobon olur ko'ngil ko'ngildin,*
*Birga irodu shitobni olur ko'ngil ko'ngildin.*
*Yetar hikoyat-u holati Shams va Mavlono,*
*Ne rutba mekhru-durafshon olur ko'ngil ko'ngildin.*
*Aql sarhadlaridan oshgan ma'naviy safarlarda,*
*Yongani mash'alu iymon olur ko'ngil ko'ngildin* [8:p.35].

*(It is time to reward one's heart with enthusiasm,*
*And take impetuosity from each other's hearts.*
*That's enough to listen to the stories of Shams-e and Mawlana,*
*It is time to have love from each other's hearts.*
*On spiritual journeys beyond the limits of the mind,*
*It is time to receive faith from each other's hearts).*
(Translated by V.Chulieva)

Communication with those who have reached the high level of perfection also helps to gain superiority of the human psyche. The more eagerly *saleh* (virtuous) people study and repeat the external knowledge, the more they will see the beauty of mystical representatives in the mirror, and will be able to converse with them [2:p.195-196].

It is known that the role of Shams-e Tabrizi was incomparable in the formation of Jalal ad-Din Rumi as a great Sufi poet and philosopher. "Dīwān-e Kabīr" was compiled in honour to him written in the aftermath of the disappearance of Rumi's beloved spiritual teacher, Shams-i Tabrizi. Rumi dedicated all his ghazals glorifying divine love, praising his master and lamenting his disappearance and adopted his name as a pseudonym [6:p.52]. In 1248, Jalal ad-Din Rumi compiled his lyric poem Dewan or Dewan-i Shams-i Tabrizi (The Works of Shams-e of Tabriz) consisting of 42,000 bytes. It contains more than 2703 ghazals and 1790 rubais.

"Dīwān-e Kabīr" was published several times in Iran, India and Turkey. It has a number of translated versions, but Dawud Samoilov's translations were recognized as the perfect ones. Raynold Nicholson, an American orientalist who was actively involved in the translation of Jalal ad-Din Rumi's works, in 1898 translated and published a collection of selective poems taken from "Dīwān-e Kabīr". In the work, also known as "Kulliyoti Shams-i Tabrizi" written by the Iranian Sufi scholar Badiʿ-al-Zamān Foruzānfar consisting of a total volume of 42,000 verses included 3,365 ghazals and kasidahs, 15 tarjes, and 1994 rubais. The eight-volume work was published in Tehran in 1957-1963.

**Conclusion/Recommendations.** Almost all of the works of Rumi evoke a discussion of various dialectical opposing ideas and complex emotions in the minds and imaginations of his disciples. According to Professor R.Nicholson, admirers and followers of Rumi must have at least a spark of the fire built by the mystic scholar in order to perceive his simple poetry and art.

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# THE DEVELOPMENT OF DEMOCRATIC SOCIETY AND THE STRATEGY OF SOCIAL CHANGES IN HUMAN THINKING

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**Annotatsiya:** Mazkur maqolada demokratik jamiyat rivoji va inson tafakkuridagi o'zgarishlar aloqadorligining nazariy-falsafiy jihatlari yoritiladi. Unda demokratik jamiyat rivojining inson tafakkuriga ta'siri, uning o'zaro bog'liqligi tahlil etiladi. Demokratik jamiyat rivoji inson tafakkurining yuksalishi uchun muhim omil ekanligi ijtimoiy-falsafiy jihatdan o'rganilib, tegishli xulosalar beriladi.

**Kalit so'zlar:** islohot, taraqqiyot, ambivalentlik, mentalitet, suverenitet, umuminsoniy qadriyat

**Аннотация:** В этой статье рассмотрены теоретические и философские аспекты взаимосвязи между развитием демократического общества и изменениями в человеческом мышлении. Анализируется влияние развития демократического общества на человеческое мышление, его взаимозависимость. В статье также исследуется социально-философское исследование развития демократического общества являющегося важным фактором развития человеческого мышления, и делаются соответствующие выводы.

**Ключевые слова:** реформа, развитие, амбивалентность, менталитет, суверенитет, универсальная ценность.

**Abstract:** This article discusses the theoretical and philosophical aspects of the relationship between the development of a democratic society and changes in human thinking. It analyzes the impact of the development of a democratic society on human thinking, its interdependence. The article also examines the socio-philosophical study that the development of a democratic society is an important factor in the development of human thinking and draws appropriate conclusions.

**Keywords:** reform, development, ambivalence, mentality, sovereignty, universal value

**Introduction.** The democratic changes being implemented in Uzbekistan today are developing in harmony with the changes in the thinking of our people. Such democratic reforms took place in the years of independence in connection with the reforms in the socio-cultural sphere. The commonality of democratic development with spiritual and moral renewal was based on the oriental qualities, worldview and way of life of our people. The combination of renewal in human thinking and democratic development is a hallmark of our national development. These include the mentality of the population, political and legal culture, strong civic position, voting for candidates who reflect the interests of a democratic society in elections, socially active participation in the life of the state and society. These indicators are in line with the development of a democratic society with changes in human thinking and reflect the height of spiritual life and the maturity of the nation.

**Discussion.** In order to understand this topic, we must first understand the essence of the concepts of "democracy", "democratic society" and "change of thinking". National spiritual revival takes place in a democratic society, and through this process, our society rises nationally. The process of national uplift creates renewal in human thinking. The spiritual aspects of democracy are universal values, the foundations of national statehood, national mentality and philosophical laws. Today, the commonalities of democracy are reflected in its universally recognized principles and have been interpreted differently by philosophers. In particular:

**In the encyclopedic dictionary of philosophy:** "Democracy described as a form of political system based on the proclamation of the principles of freedom and equality of citizens" [1]. It envisages the recognition of human rights and the protection of the priority of national and state interests as a general aspect of democracy.

**The Dictionary of Basic Concepts of Spirituality lists two main aspects of democracy:** "Democracy: 1) democracy is a form of people's power enshrined in the Constitution and laws on the basis of the principle of freedom and equality of citizens; 2) democracy is a political concept that represents a free, fair society and state that is established and unfolded in practice" [2]. This source lists the positive aspects of a form of government that meets the needs of modern societies, as opposed to an encyclopedic dictionary of philosophy.

Society is improving in the course of its development, and deepening moral, legal duty, interests connected with responsibility, bring into being new directions in human thinking. Renewals in human thinking play a crucial role in the development of society in the evolutionary transition from a particular period of reform to new reforms. Philosopher F. Musaev divides the anthological essence of spirituality in the national democratic development in the following directions:

**First,** the harmony of national democratic development and socio-moral values;

**Second,** the harmony of oriental democracy with oriental morality;

**Third,** the dependence of national democratic development on social labor, human creative activity, research aimed at changing the world, its surroundings;

**Fourth,** the formation of new economic values and economic thinking based on the impact of market relations on economic life;

**Fifth,** the establishment of universal moral values in social relations;

**Sixth,** the use of commonalities of secular knowledge with transcendental views;

**Seventh,** the social and spiritual maturity of man is the goal of the development of society;

**Eighth,** to look at the political and moral activism of the individual as a criterion for the development of national democracy [3].

The laws of social philosophy show that the process of change in human thinking is not an easy process. Because the remnants of the old system remain in the human mind for a certain period of time and have an impact on people's behavior and life. This condition is called ambivalence in science. This concept means that in the structure of spirituality, incompatible, contradictory concepts and ideas exist side by side for a certain period of time.

At a time when spirituality is experiencing a period of peaceful development, spiritual ambivalence is almost non-existent or very low. At the turning points in development, ambivalence is more pronounced. This situation can be overcome, first of all, on the basis of involvement in innovations in human spirituality and behavior, educating it in the spirit of awareness and responsiveness.

The rise of the peoples of world history has always begun with their spiritual, ideological unification. They have successfully passed complex tests based on the national idea. The national idea has raised their devotion, spirituality and culture to the Motherland and mobilized them for great goals [4].

**Discussion.** An important aspect of the issue is that the renewal of human thinking is a historical and philosophical process associated with an objective assessment of the people's past, cultural and spiritual heritage, the importance of national and universal values, their understanding and rational use and development. In this process, if the people are unaware of their history, national culture, values, spiritual heritage, they will have no clear vision of the past, no strategic goal for the future, and no desire to mobilize for a noble cause by uniting on this path. As long as a nation in a state of spiritual decline cannot get out of it, it may soon be influenced by the culture of other nations, lose its national mentality, identity, and forget its dignity. It can be seen that the process of renewal in the human thinking of society and the people is inextricably linked with each other. This means that the social, economic and political development of a society is impossible without certain spiritual factors.

It takes two things to make progress - money and a mind that can spend it wisely. If we call this mind "spirituality" in the broadest sense, it becomes clear that the level of our national progress depends both directly and indirectly on our national spirituality [5].

According to the philosopher Abdurahim Erkaev, the positive needs of the new formation determine the direction of the development of society. If they have higher needs in a positive sense, there will be positive material and spiritual changes in the society, if they have negative needs, the society will change in a negative direction [6].

In the process of change in human thinking, there is no society that can rise to spiritual development without strengthening the spiritual and moral values, national traditions, religious and philosophical achievements in the hearts and minds of people. Indeed, the spiritual heritage, cultural achievements and religious values of the people have served as the fundamental foundation of Eastern philosophy and spirituality for thousands of years. Despite the difficulties of the tsarist and colonial eras, our people

managed to preserve their historical, philosophical, spiritual and cultural heritage and national and religious values and pass them on to future generations. After gaining independence, the state faced the task of carrying out broad reforms in all spheres of public administration and social life, drastically reforming society and the way of thinking. Indeed, it has become clear that the dictatorial regime that has ruled for 70 years has not justified itself in any area [7].

From the first days of Uzbekistan's independence, the spiritual renewal of society, the restoration of the invaluable spiritual and philosophical heritage created by our great ancestors, its enrichment and presentation to the world community have been identified as strategic priorities of our state policy. The change in the mentality of society, the restoration of the spiritual and philosophical heritage of our people has created a natural and philosophical process that leads to the realization of the identity of our citizens, the rise of their sense of pride and honor. After gaining independence, the sovereignty of the people and the priority of human rights were recognized in our country, and the Uzbek people had the right to self-determination. As the head of our state Shavkat Mirziyoyev acknowledged: "Today, summing up the difficult and arduous path we have chosen during the years of independence, chosen by the will of our people, we can decide our own destiny in a short historical period, take a worthy place in the world community, our national statehood, eternal values and we are proud to say that we have made great strides in restoring our traditions, our sacred religion, and ensuring human rights and freedoms" [8].

It was important to restore the national mentality of our people and create a true history, to understand the identity of the Uzbek people, to form in their hearts a sense of pride in the spiritual and philosophical heritage of the motherland and ancestors. The glorious past of the Uzbek people has become a school of true education and example for our nation, and has served the development of historical memory and consciousness of our people. Indeed, the invaluable intellectual heritage of great figures and scholars from Central Asia has served as a fundamental basis in determining the path of our historical development through spiritual renewal, philosophical worldview.

It is worth noting that in the period of independence, spiritual life also reached a new level, rare talents were brought up. Their high artistic, deep philosophical works are deeply rooted in the hearts of our people and have made a great contribution to the development of intellectual property [9].

Imam Bukhari, Abu Isa Termezi, Mahmud Zamakhshari, Hakim Termezi, Ahmad Fergani, Abu Nasr Farobi, Abu Rayhan Beruni, Al-Khwarizmi, Ibn Sino, Ahmad Yassavi, Najmiddin Kubro, Bahauddin Naqshband, Abu Mansur Moturidi, Amir Temur, who grew up in our country, Mirzo Ulugbek, Alisher Navoi, Zahiriddin Muhammad Babur, Abdulhamid Cholpon, Abdurauf Fitrat, Fayzulla Khodjaev, Abdulla Qodiri, Abdulla Avloni, Usmon Nasir not only contributed to the development of the national spirituality of the peoples of Central Asia, but also to the development of world science, culture and history. Today, their creative work is recognized by the whole world community.

The scientific and philosophical heritage created by our ancestors on the basis of the law of historical succession should serve the next generation, the development of the younger generation in the spirit of national and universal values, the development

of a democratic society and changes in human thinking. Indeed, it is no coincidence that our culture, formed over the centuries in the territory of our country, has been one of the centers of science and enlightenment in the history of mankind.

**Conclusion.** In short, the democratic changes taking place in our country, in turn, have created a process of change in human thinking, developed through the traditions of our people, the values formed in the process of socio-historical development.

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## SCIENTIFIC AND PHILOSOPHICAL VIEWS OF ZAMAHSHARI

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**Annotatsiya:** Ushbu maqolada buyuk mutafakkir Mahmud az-Zamahshariyning hayot yo`li, jahon ilm-fani va madaniyati rivojiga qo`shgan hissasi shuningdek, allomaning ma`naviy merosi xususan, diniy-falsafiy qarashlari tadqiq etishning ilmiy ahamiyati ochib berilgan.

**Kalit so'zlar:** islom, din, falsafa, axloq, adolat, shaxs, ma`naviyati, tarbiya, Al –Kashshov, arab grammatikasi, tilshunoslik, Qur`oni Karim.

**Аннотация:** В статье раскрывается жизнь великого мыслителя Махмуда аз-Замахшари, его вклад в развитие мировой науки и культуры, а также научная важность изучения духовного наследия ученого, в частности, его религиозных и философских взглядов.

**Ключевые слова**: Ислам, религия, философия, этика, справедливость, личная духовность, образование, Аль-Кашшоф, арабская грамматика, лингвистика, Священный Коран.

**Abstract**. This article reveals the life of the great thinker Mahmud az-Zamahshari, his contribution to the development of world science and culture, as well as the scientific importance of studying the spiritual heritage of the scholar, in particular, his religious and philosophical views.

**Keywords**: Islam, religion, philosophy, ethics, justice, personality spirituality, education, Al-Kashshof, Arabic grammar, linguistics, the Holy Quran.

**Introduction.** It is recognized in the world that a comprehensive study of the philosophical and moral heritage of not only Western but also Eastern thinkers is not only a modern natural-scientific paradigm, but also the ideological and methodological basis of educational theory. In particular, the exemplary life and scientific activity of our great scientists, who grew up on our land, and whose important discoveries still amaze the world today. In particular, the role of Mahmud az-Zamahshari in the development of Islamic culture and philosophy is invaluable. It would not be a mistake to describe the scholar's contribution to world science and culture as spiritual courage. In this sense, the study of the religious and philosophical heritage of the scholar is of great importance in the education of a well-educated, independent-minded generation.

On the basis of a comparative analysis of the philosophical and moral views of Mahmoud az-Zamahshari in a number of research institutes and centers around the world to reveal its importance in the education of the modern person, tafsir, hadith, nahv, dictionary, ilm-ul-bayan, revelation, surahs and verses of the Qur'an Scientific research on the need to study the meaning of hadiths in order to adhere to a culture of compromise in social relations, not only in the East, but also in the West, in particular, European orientalists Brockelman, Bentsing, Gibb, Goldtsier, Neldeke, Wright, I.Yu. Krachkovsky, B.Z.Kholidov , Conducted by such scientists as A.B.Kholidov, V.M.Belkin, V.V.Bartold, A.K.Borovkov, A.Krimsky.

**Literature Review.** In Uzbekistan, special attention is paid to the study of the views of Eastern thinkers on the world and man, education and upbringing, faith and belief, family and marriage, personal spirituality, state and public administration, the use of their ideas in line with modern spirit. Also, "in-depth study, deep understanding and wide dissemination of the works of thinkers of the Islamic world, their invaluable contribution to the development of world civilization" [1] serves as a means of ensuring intergenerational succession. Indeed, "Islam calls us to peace with goodness, to preserve the original human qualities. The invaluable contribution of many brilliant representatives of the Central Asian Renaissance to Islamic and world civilization "[2] is now important in ensuring the balance of religious and secular knowledge, in the formation of secular thinking.

Law of the Republic of Uzbekistan No. 618-I of May 1, 1998 "On Freedom of Conscience and Religious Organizations", No. ZRU-406 of September 14, 2016 "On

State Youth Policy", Decree of the President of the Republic of Uzbekistan dated June 23, 2017 Resolution of the President of the Republic of Uzbekistan dated February 7, 2017 No PF-4947 "On measures to establish the Center of Islamic Civilization of Uzbekistan under the Cabinet of Ministers", Decree of the President of the Republic of Uzbekistan dated February 7, 2017 No PF-4947 this research to some extent serves in the implementation of the tasks set out in the regulations. Our great ancestors connected the issue of human spiritual and moral perfection with science. It has its own deep meaning and logical basis. Indeed, it is impossible to achieve a mature human career without being aware of the mysteries of existence and without making effective use of the possibilities of the mind. That is why scientists at all times have paid great attention to the study of the essence, necessity, value of education, methods and means of its implementation, the purpose of which is expected. In particular, we can see this in the work of Renaissance thinkers. In this study, we will try to substantiate the scientific and practical significance of the study of the contribution of Mahmud az-Zamahshari, who had a place among the Central Asian scholars and philosophers of this period, to the development of philosophical and moral views. It is known that the cultural upsurge in the Near and Middle East, which lasted for several centuries from the ninth century, is referred to as the "Renaissance of the Oriental Peoples" and the "Muslim Renaissance." In the West, however, such a period dates back to the fifteenth and sixteenth centuries, and in a sense emerges as a continuation of the Eastern Renaissance.

Zamakhshari (March 19, 1075) was born in the village of Izmikshir in Khorezm. His full name is Abul Qasim ibn Umar az-Zamahshari.

The scholar's father, 'Umar ibn Ahmad, was the imam of the mosque, and his mother was a pious and devout woman. His book, Al Mufassal, on Arabic grammar, is second only to the Arabic scholar Sibawwah. During his lifetime, he was praised as "Master of all scholars", "Master of all Arabs and non-Arabs", "Jarullah - the neighbor of Allah", "Honor of Khorezm" and other nicknames.

Mahmud received his primary education in his village and later continued his education in Gurganch and Bukhara madrassas. After graduating from the madrasa, he engaged in independent reading. During his studies, he was in close contact with and learned from famous scholars of his time, such as Abu Dharr ibn Jarir Zabbiyya Isfahani, Nasir Hasiri, Abusa'd Zakani, and Abul Khattab ibn Abulbatir.

**Research Methodology.** The great encyclopedic scholars who grew up in our country achieve great success in the field of social sciences, as well as in the natural sciences. Farobi, Zamakhshari, Aziziddin Nasafi, Narshahi, Yusuf Khas Khojib, Mahmud Kashgari, Lutfi, Sakoki, Navoi, Babur are among them [4].

Mahmud Zamakhshari mastered calligraphy and made a living by copying books for people. This can be seen in the fact that when he was young, he fell from the roof and broke one of his legs, forcing him to sit and work. He was always in search of knowledge. Despite his disability, he traveled to Isfahan, Khorasan, Baghdad, Hijaz, and twice to Mecca in search of knowledge. He lived in Iraq and the Arabian Peninsula for several years, and as a great linguist, he wrote such masterpieces as "Asos ul-balaga" ("Foundation of Chechenism"), "Alfoiq fi gharibil-hadith" ("Assimilation of

unfamiliar words in the hadith"). made a worthy contribution to the development of science [5].

The scholar said, “The gait of a person who walks the right path is more majestic than the gait of a lion. It is as if a lowly person praises and is proud of his lineage, and a thirsty person is deceived by the light of water. ”[6] Indeed, boasting about one's lineage is also condemned in religion.

His views on the philosophy of governance and leadership, including "Every leader and leader who does not pursue the right policy with truth and justice, will suffer severe suffering and calamity," were accepted as a rebuke and admonition for officials of his time.

Zamakhshari created his own toponymic works such as “Al-jilob valamkina valmiey” or “Kitabu asmo il-adviya val-jibal” (“Mountain, address and waters” or “Book of medicine and names of mountains”). He is the author of Muqaddamat ul-arab (Introduction to Literature), Al-Mustaqso fi amsol il arab (The One Who Completes Arabic Articles), Nawabig ul-Kalim (Words of Wisdom), Maqomat az Zamakhshariy ”(“ Zamakhshariy maqomlari ”),“ Atvoq uz-zahab fil ma'vo'iz val-khutab ”(“ Golden beads of exhortations and exhortations ”) and developed the science of philosophy and literature. It also consists of lyrical, philosophical poems, poems of veterans, mourners and poets.

**Analyses and Results.** Zamakhshari's contemporaries Abu Samad Muhammad Sa'ani (1179-1229), the Arab historian Yaqut Khamavi (1179-1229), and the Egyptian Jalaladdin Kiftiy (1167-1248) claim that he was an incomparable scholar and imam (leader) of contemporary writers. He wrote poems dedicated to Khorezmshah Atsiz, who worked in the field of governance in the time of Zamakhshari.

During his lifetime, Zamakhshari wrote more than 80 works on the Arabic language, literature, history, geography, philosophy and other sciences, but only 50 of them have survived. Zamakhshari's "Devon ur-rasoil" ("Collection of treatises"), "Devonu khutab" ("Collection of sermons"), "Devon ut-tamsil" ("Collection of proverbs and sayings"), "Devonu tasliyat iz-Zarip", "Devonu We know only the names of his works: One of his works of art that has come down to us is Devon az-Zamahshari, a rare manuscript of which is kept in the Egyptian library. Zamakhshari's Al-Kashshof, a commentary on the Holy Qur'an, is especially popular in the Muslim world. At the world-famous Al-Azhar Religious University in Cairo, students study the Qur'an through Al-Kashshof. Scholars of the Muslim world describe Zamakhshari's Al-Kashshaf as the "revealer of the Qur'an" and say that many of the mysteries of the Qur'an would not have been revealed without it.

Zamakhshari became famous not only in the Islamic world as a scholar and poet, but also as a mature religious scholar with his scientific and philosophical works and artistic creations.

Mahmud al-Zamahshari's remarkable philosophical and rationalist views, his clear reflections on the ancient problems of philosophy, his astonishing interpretations, and his unexpected answers to classical questions still amaze many philosophers.

**Conclusion.** Although the creative heritage of the scholar has not reached us in full, all the works that have survived to this day have not lost their relevance for the field of philosophical history even today. It would not be wrong to say that the name

of Mahmud az-Zamahshari created revolutionary changes in the whole history of philosophical medieval thought. For the first time in the history of Islamic philosophy, he shed light on the peculiarities of the problems of metaphysics, ethics, and logic. For this reason, the contribution of Mahmoud az-Zamahshari's philosophical and moral views to the development of the spiritual culture of the Muslim East cannot be ignored, as his ideas are relevant not only in the study of national and religious philosophical currents but also in world philosophy in general.

By the way, our great thinker Hazrat Miralisher Navoi mentions Zamakhshari in the chapter dedicated to the description of Abdurahmon Jami, the teacher of the epic "Sab'ai sayyar" ("Seven travelers"):

The lesson in Arabic was his.
Ibn Hajib was a fireplace student.
Ibn Hajib did not say, Jorullah,
There is no warning in the work of interpretation.

Teaching Arabic is his constant job, Ibn Hajib is his humble student, not only Ibn Hajib, but even Jarullah cannot be compared to him in Arabic grammar.

The scientist passed away alone, claiming that family worries hindered creativity, but he knew many of his students and works as his own children. Zamakhshari died in 1144 at the age of 69 in Khorezm. Ibn Batuta (1304-1377), an Arab traveler who visited Khorezm in 1333, wrote that he had seen the tomb of Zamakhshari near Old Urgench and that a dome had been built on it.

In short, Professor A. Rustamov and orientalist U. Uvatov have made a great contribution to the study of Zamakhshari's scientific and philosophical views and his work in general, as well as his translation into Uzbek.

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# ETYMOLOGICAL ANALYSIS OF THE PHENOMENON OF THINKING IN SCIENCE AND PHILOSOPHY

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**Annotatsiya:** Ushbu maqolada tafakkur va tafakkurning etimologik tomoni falasafiy jihatdan muhokama qilingan. Muallif ilm-fanda va falsafada tafakkur muammosini etimologik tomonlarini qiyosiy taqqoslash bilan masalaga kengroq to`xtalgan. Tafakkurning fenomenologi ijtimoiy ong va ijtimoiy munosabatlarga ta`siri, ulardagi ifodasi mahsuli ekanligi haqida fikr yuritiladi. Shuningdek, tafakkur fenomenini etimologogik tahlil qilishda unga mos keladigan vosita va usullari bilan bog`laydi.

**Kalit so'zlar:** Tafakkur, aktiv protsess, universal vosita, sof aql, inson va jamiyat, harakat, ibtidoiy falsafa, totemistik, animestik, mif teologiyasi.

**Аннотация**. В статье рассматривается этимологический аспект мышления и рассуждения с философской точки зрения. Автор останавливается на проблеме более подробно, сравнивая этимологические аспекты проблемы мышления в науке и философии. Он считает, что феномен созерцания является продуктом воздействия на общественное сознание и общественные отношения, выражения в них. Он также связывает феномен мышления с соответствующими инструментами и методами в его этимологическом анализе.

**Ключевые слова**: мышление, активный процесс, универсальный инструмент, чистый разум, человек и общество, движение, первобытная философия, тотемистическая, анимистическая, мифологическая теология.

**Annotation**. In this article, the etymological aspect of thinking and intellect is discussed philosophically. The author dwells on the issue by comparing the etymological aspects of the problem of thinking in science and philosophy. He thinks that the phenomenon of thinking is expressed in the influence of social consciousness and social relations. It also connects the phenomenon of thinking with the appropriate tools and methods in its etymological analysis.

**Keywords**: Thinking, active process, universal tool, pure mind, man and society, action, primitive philosophy, totemistic, animistic, myth

**Introduction.** Scientific research usually begins with the identification of the object (subject) and the basic concepts that apply to it. In our study, the object is scientific and religious thinking, and the basic concept is thinking.

The concept of "thinking" does not occur in other, international languages, such as English or Russian. We find its social and philosophical essence in the works of our great ancestor Alisher Navoi. The great poet and sage writes: "He is the one who does everything, the one who knows with thinking." [1] At this point, the poet wanted to declare that the ability to think, to be able to do, to know, to understand many things with the help of thinking is given to humanity. In another work, the poet emphasizes: : "Let the people of the society think and let the officials think" [2]. The fourth volume

of the Annotated Dictionary of the Uzbek Language, published in 2008, defines the concept of “thinking” as follows:

Thinking is “the process of thinking, thinking, reasoning, the active perception of objective reality in imagination, comprehension, and discussion, the ability to think.” [3] In short, thinking is a reality that represents a way of thinking. It is a way of understanding and expressing objective reality through thinking. We find similar views in the 2010 book Spirituality: An Explanatory Dictionary.

It is noted that thinking has the following functional features: thinking 1) reflects reality in a generalized way; 2) directly reflects the objective being; 3) the product of human creative activity, research; 4) is expressed, understood and explained through language. [4]

In our opinion, consciousness, reason, and worldview also reflect reality in a generalized way, which means that these subjective phenomena should be considered as attributes of thinking. Thought is not a product of thinking in itself, it is manifested through subjective phenomena such as intellect, perception, knowledge, and worldview. Therefore, to say that thinking “directly reflects an objective being” can lead to its identification with all subjective phenomena.

In the Dictionary of Philosophy, thinking is defined as "a highly structured matter, the highest product of the brain, an active process of perception of the objective world in concepts, discussions, theories, and so on." [5]

This "active process" brings to the fore the subjective phenomena of mind, cognition, cognition and worldview, which are the ones that activate thinking. In the Encyclopedia of Philosophy, thinking is interpreted more broadly. “Thinking is the highest form of objective perception of the world; the process of reflection of objective reality in the mind. In the process of consciousness, thoughts, reflections, ideas, hypotheses, etc. are formed in man, and they are expressed in the mind of the person in the form of concepts, judgments, and conclusions. [6] At the same time, the authors argue that thinking “emerges in the process of socially productive activities of people… Thinking is a product of social development. Like all social phenomena, the way of thinking is determined by social conditions. It exists only in connection with the mode of production, the social structure of society, ideological views and other social relations.” [7] The fact that thinking is a product of social processes proves that it is a subjective reality like consciousness. But the way of thinking and reasoning manifests itself only through reason, perception, knowledge and worldview. It is impossible to think without them. For some reason, these features of thinking are not clearly reflected in the scientific and philosophical literature. The impression is that thinking is made up of thoughts, reflections and imaginations, and sometimes are realities related to the mind. Such an approach pushes back the originality of reason, rationality, perception, and leads to the abstraction of thinking. In our opinion, thinking is the search for ideas based on reason, worldview, and rationality. Hence, thinking is, from an etymological point of view, a subjective reality such as the search for thought, reasoning, and observation.

**Literature Review.** There is still no clear approach to the social philosophical and epistemological interpretations of thinking in the scientific literature. Therefore, if we

look at it in accordance with the mind, knowledge, worldview, our thoughts on this subject become clear.

Depending on the subjects, thinking can be divided into individual, group, national, ethnic and universal. Each of them is an object of independent research. We are interested in the aspect of social character, which is required, first of all, by the nature of social philosophy.

The mind is a factor that unites society and human activity on the basis of common norms and values. Only a society based on reason, perception, and man understands each other as two subjects, realizing that progress can be achieved by supporting each other. Aristotle once wrote, "Some act rationally, and their abilities are also rational." [8] If we interpret the philosopher's concept of "action" in a broad sense ("action is the source of life"), we come to the conclusion that social development is created through the intellect. The great French philosopher Rene Descartes elaborated on the social philosophical aspects of reason and cognition. He sees the mind as a "universal means", "ability", "all-leading", "natural power", "limited quality", "image of material things", "pure mind". According to him, a person's scientific research and intellect should consist of "reliable and unmistakable things" that they perceive. [9] "No knowledge can be acquired without mental intuition or deduction." [10] At this point, the philosopher refers to experiences based on reason, perception, and supports the knowledge formed through them. "It is not enough to have a good mind, the most important thing is to apply it." [11] In science, in philosophy, there is an approach to the mind, to perception, to the cognitive abilities of man, as an object, an object, but this does not negate the dynamic nature of rationality. The dynamic nature of the mind is reflected in its transition to practice, to human activity, to its objectification. The real life of man, as if it were outside the realm of his own life, is different from the requirements of existence, which philosophers see as "still in the categories of non-existent existence, purpose, and essence." [12] The category of “non-existent being” is covered in detail in the philosophy of Hegel and Heidegger, and the important point for us is that these categories are noteworthy in that they express how the human mind can perceive being. Being is not an object represented in a category, it is more suited to the concept of "non-existent being", that is, the antinomic. From the point of view of social philosophy, it is not the existence of the mind that is important, but its rational power, its influence on human and social life as a tool, and its activity in understanding the "non-existent being." [13] This social aspect of the mind has turned it, thinking, into a large, unique phenomenon in human life that determines the essence of activity. The study of issues of scientific and religious thought, the disclosure of the dialectical connection between them, should also be seen as an expression of this phenomenon. Then we realize that the mind is not a phenomenon "for itself", "pure intellect", but a phenomenon related to human and social life, and that any change in social existence is manifested as an effect of this phenomenon.

**Research Methodology.** Researchers who have defined thinking show that it is related to the mind. Yes, thinking is a product or a manifestation of the processes of consciousness and perception. But this is not just an appearance, in our opinion, it manifests itself fully when it acquires a social character. This leads to an appeal to the

social manifestations of consciousness, intellect, that is, social consciousness and social relations.

The phenomenon of thinking is the product of the influence on social consciousness and social relations, their expression. The formation of this product consists of various stages. In the social philosophical literature, they refer to the social consciousness:

- individual, group, national and universal by subjects;
- subjective and objective in relation to objects;
- theomythological, philosophical, scientific by type;
- psychologically sensitive, empirical, metaphysical;
- ideological, pedagogical, liberal in terms of educational features;
- views, beliefs, ideals related to life goals;

• According to their functional aspects, enlightenment is divided into educational, technological, prognostic, etc.

These classifications and approaches are noteworthy from a scientific point of view, as they allow for a systematic functional analysis of the object. It is well known that structural functional analysis consists of certain systems according to the intrinsic, intrinsic properties of the object, which reveal the permanent and dialectical interdependence of these systems.

If we proceed from the goals and directions of our research, it is expedient to analyze the phenomenon of thinking from a mythotheological, philosophical and scientific point of view. Such an approach allows, firstly, a harmonious approach to secular knowledge and religious knowledge, and secondly, helps to clarify the methodological aspects of the problem, thus giving a scientific, philosophical and positive direction to the research. This approach is consistent with the "scientific positivism" of O. Conte and G. Sepenser. [14]

**Analyses and Results.** In theomyphological views, according to modern interpretations, the factors of reason, cognition, are not a priority, they are manifestations of non-vital, fantastic and irrational perception of an objective being. Yes, today scientific and secular knowledge does not recognize theomyphological views very much, if applied to them, it imagines them as archaic concepts, the expression of the first manifestations of consciousness, the reflection of irrational experiences. However, in our opinion, the mythotheological imaginations were the product of their time, a real reality for primitive people. According to E. Taylor, a well-known ethnographer and culturologist, the animistic, totemistic views reflected the philosophical thinking of primitive people, which was important for the next stages of thinking of primitive people as the relationship to the world, the environment, life. [15] It was a stage of contemplation in which primitive men did not separate themselves from the wider world, they accepted supernatural forces and, as social consciousness was not yet a sufficiently developed, fantastic imagination as realities for themselves. The fact that the first, primitive thinking consisted of non-vital elements was not a tragedy for the people of that time, because with the help of this thinking they understood the world and perceived themselves, entered into relationships. Animistic, totemistic, and anthropomorphic views, as the "primitive philosophy" of their time, took root in people's minds, imaginations, and relationships, and the whole

consciousness was a subjective reality within these fantastic imaginations. Later they became theological concepts. Thus, the combination of mythological and theological thinking took place in people on the basis of the formation of a certain life experience, rational thinking. The basis of rational thinking in religion did not go unnoticed, it enriched the mythological imagination with certain elements of thinking, that is, understanding. Therefore, there is a certain rationality and mythological elements in theological views, and it is this harmony that has led religion to take a deeper place in people's lives as a real reality.

**Conclusion.** The history of thinking shows that people could not remain within the framework of "primitive philosophy" in the process of evolutionary development, evolutionary development forced them to enrich their non-vital imaginations with new approaches, rational thinking, intellectual research. Later, religion, like mythological notions, became their real existence, a reflection of their social life. That is why later in thought, especially in philosophy, the prevailing view was that subjective views, rather than real life, predominated, and built the whole way of thinking on the traditions of subjectivism. In the new epoch, when religious philosophy became a major current, and reliance on reason, reason, and rationality came into force, B.C. Spinoza, D. Yum, Gegel, V.Solovev, N.Berdyaev, V.Rozanov, P. Supported by Florensky, M. Heidegger, etc. are paradoxes in thinking. In the legacy of these philosophers, mythotheological thinking reached its peak, and their religious and philosophical research allowed not only to preserve the original primitive philosophy, but also to discover new aspects of mental thought.

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# GHAZALI AND HIS PHILOSOPHY OF EDUCATION

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**Annotasiya.** Mazkur maqolada ma'rifat sohibi Abu Homid G'azzoliyning til ofatlari to'g'risidagi falsafiy qarashlari tahlil etilgan. Mutafakkirning til ofatlari to'g'risidagi qarashlari uning mashhur "Ihyou ulumid-din" (Diniy ilmlarni tiriltirish) asarining "Muhlikot" (halokatga olib boruvchi ofatlar) qismidagi "Til ofatlari" kitobi asosida ochib berilgan.

**Kalit so'zlar:** til, yaxshilik, yolg'on va'da, yolg'on so'z, yolg'on qasam, chaqimchilik, maqtov

**Аннотация.** В статье представлен философский анализ взглядов просвещенного Абу Хамида аль-Газали на языковые барьеры. Взгляды мыслителя на языковые барьеры раскрываются на основе его книги "Ихёу улумид-дин" (Возрождение религиозных наук) в его книге "Катастрофы языка" в разделе "Мухликот" (Барьеры, ведущие к разрушению).

**Ключевые слова:** язык, доброта, ложное обещание, ложное слово, ложная клятва, клевета, похвала.

**Abstract:** This article analyzes the philosophical views of the enlightened Abu Hamid al-Ghazali on language calamities. The thinker's views on language calamities are revealed on the basis of his book "Ihou ulumid-din" (Revival of Religious Sciences) in his book "The Calamities of Language" in the "Muhlikot" (Calamities That Lead to Destruction) section.

**Keywords:** language, goodness, false promise, false word, false oath, slander, praise

**Introduction.** According to al-Ghazali, "language is a great blessing of Allah, a wonderful and delicate art" [1.5]. Indeed, existence, non-existence, all known and unknown things are explained using language. Although language is a small organ in our body, it plays an important role in human life activities. It is clear from the views of the thinker that whoever releases the reins of his tongue, the devil will drag him to the edge of the abyss and lead him to destruction. This is why language is the most disobedient member of man. The fact that this boneless organ moves easily leads to unintended consequences. The only way to avoid language calamities is to be silent, Ghazali said. On this basis, Ghazali shows the sentence as four types:

1. Sentence consisting only of harm.
2. Sentence consisting only of benefit.
3. A sentence consisting of harm and benefit.
4. There is no harm or benefit [1.13].

According to the scholar, it is necessary to remain silent only on the matter of harm. It is better to refrain from saying that there are harms and benefits to avoid harm. There is no benefit or harm in wasting time. The most necessary is a sentence consisting only of benefit. Ghazali said that this is the calamity of the language. If only the saying

of profit, falsity, gossip and other calamities are mixed, the limit of profit and loss is hidden and the person remains in danger.

The thinker shows that the tongue has the following twenty calamities [1.14]:

**Literature Review.** The first is nonsense. The fact that a person speaks a sentence that does not harm neither himself nor anyone else, is an exaggeration (optional). But as long as there is no benefit from this word, it will be a waste of time. Ghazali likens time to the investment of a believer. Indeed, whoever knows the value of his time, which is his main wealth, spends it only on something useful. Knowing this saves the tongue from uttering nonsense. According to the scholar, whoever abandons the remembrance of Allah and utters meaningless words, “he is as if he could take a pearl, but he is like a person who takes a stone instead” [2].

The second of the tongue calamities is talkativeness. It is a matter of saying things that are necessary or unnecessary. It is possible to express a really necessary sentence in a word or two, or to exaggerate it as much as you want. So, to be able to express the goal in one word, but to switch to two or three words, is madness.

The third calamity is giving in to false words. Al-Ghazali considers women, drunken parties, the pleasures of the rich, various inappropriate ceremonies, and other unpleasant situations to be the subject of superstitious words. It is true that the only measure to avoid superstitious words is to make the sentence short. False words also include unfounded or unscientific hostility (argument) [2.195]. Indeed, enmity arouses hatred, intensifies anger, provokes jealousy, and tarnishes reputation.

The fourth catastrophe, the controversy. Al-Ghazali says that a person’s faith will not be perfect until he is right and gets away from the debate. The implication is that argument hardens hearts and creates hatred. Controversy arises from protesting every word of others. That is, the debater goes against his interlocutor on the suspicion that there is something wrong in the words or meaning of what is being said, or in the intent of the speaker.

The fifth calamity is hostility. It is difficult for a person to keep his tongue to the limit when he is hostile. Hatred fills the heart with hatred and provokes anger. If a person becomes angry, he forgets what he is arguing about. That’s why Ghazali says the person who started the hostility is at least mentally disturbed.

The sixth calamity is chatterboxing. Chatterboxing is the length of a sentence, trying to show its eloquence. To the scholar, everything must be limited to a specific purpose. The purpose of the sentence is to explain what is meant.

The seventh calamity is cursing and obscenities. It is very ugly to insult, to defile the tongue with obscene words, and our Shari’ah forbids it. Because cursing is expressed through words related to a sexual event. The source of these words is evil and blame [2.196].

The eighth calamity is damnation. It is a crime to damn them, whether they are alive or dead, human or animal [1.46]. In fact, people ignored the damn and gave free rein to the language. Damnation the tongue should be avoided. According to the scholar, the meaning of “damn” is to be expelled from Allah, to turn away from Allah.

The ninth calamity is an obscene song and a perverted poem. It is clear from the views of the thinker that it is not haram to write or read poetry, unless it consists of

perverted meanings and obscene words. He bases this view on the idea of the Prophet that “there is wisdom in poetry”.

The tenth calamity is humor. The scholar explains that the original of the joke was condemned, but that a slight mutation was allowed as an exception. Because when a person becomes accustomed to a constant joke, it becomes his hobby, his nature becomes prone to humor. Having a good time is a voluntary activity. But it is wrong to be constantly attached to that hobby. Therefore, when humor is excessive, laughter increases. A lot of laughter kills the soul, fills the soul with hatred, takes away the skill and dignity. The thinker says, “Humor that is free from these vices is not condemned” [1.58],.

The eleventh calamity is ridicule and mockery. “Mocking” means disregarding, insulting, blaming and laughing at. In the eyes of the scholar, ridicule and mockery are also forbidden because they hurt the heart. Laughter that hurts the heart, which is based on ridicule, is impure. However, if someone enjoys making fun of themselves, the thinker points out, this is a joke.

The twelfth calamity open the secret. Revealing a secret is forbidden by Sharia. Because when a secret is revealed, there is disrespect and suffering for what is kept secret and for the secret. According to al-Ghazali, it is haram to reveal a secret in such a situation if it harms someone by revealing it. If the secret is revealed, even if it is not harmful, it will be degraded. However, among them “his wife was allowed to lie and use tricks in war” [2.197].

The thirteenth calamity promises a lie. Language is always at the forefront of making promises, but lust is more likely to fail to keep a promise. Once a promise has been made, it must be kept until there is no excuse for not keeping it.

The fourteenth plague is a lie and a false oath. According to the German philosopher Friedrich Nietzsche, man cannot live without lies. He needs a lie, he can’t be true to the truth, he can’t bear the burden of the truth. “Do not disturb the peace of the people! Let them live with their lies and deceptions. Lying is good, lying is the pillar of life”, - Nietzsche said [3]. Lying is sometimes like oxygen, making breathing easier and working faster. So for some, lying is a way of life. However, it is not correct to fully agree with the opinion of the German philosopher. He looked at man only in the context of humanity.

**Research Methodology.** According to the thinker, a person who wants to lie must seriously consider whether the purpose for which he is lying is more important than telling the truth according to the Shari’ah. Determining this is not an easy task. So, it is safer - to leave the lie.

Fifteenth calamity is gossip. Al-Ghazali said, “O my brother, know that Allah, in His Qur’an, speaks sharply about the evil of gossip and likens gossip to eating the flesh of the dead”. [4]. According to the scholar, the limit of gossip is that you say something to your brother that he does not like. This is manifested in different situations. Whether the word refers to a fault in his body or to his lineage, behavior, actions, wealth, or even his clothes, it is considered gossip. According to al-Ghazali, the avoidance of gossip is treated with a mixture of knowledge and practice.

Here are four reasons for gossip:

1. Suppression of bitterness (revenge).

2. Peer compatibility, the treatment of friends and their help.

3. Discriminating against others and elevating one's own will.

4. Humorously, by making people laugh by imitating others, silently harming some people [2.201].

Al-Ghazali says that gossip is formed in the heart as a result of the suspicion of the nafs and the consequent inclination of the heart. Indeed, the heart is not satisfied with suspicion, but it requires investigation and goes on the path of espionage.

The sixteenth calamity is denunciation. A delator is more likely to convey someone's message to the person being spoken to. Ghazali explains that the essence of denunciation is to unravel the mystery, to tear the curtain over what is supposed to stand. The only way to get rid of it is to keep quiet about all the unpleasant things people see in their cases.

Al-Ghazali says that anyone who hears the whistleblower should follow six things. These are:

1. Not believing the whistleblower.
2. To turn him away from this thing and exhort him.
3. To hate it in the way of Allah.
4. Not to have a bad suspicion about a missing (not present) brother.
5. Not to spy and check the speaker for what he told him.
6. Not wanting to do what delator did [2.205].

The seventeenth calamity is flattering. It is hypocrisy to hesitate between two sides that are hostile to each other, and to hypocrisy with words that they like next to each other, and words that they like next to each other. The thinker says that flattering is worse than slander. The reason for this is that the whistleblower carries the word of only one side. The flatterer carries the words of both sides. Ghazali explains that the cure for the pain of flattering is to deny the evil of evil, if he is unable to do so, to remain silent and hate it in his heart.

The eighteenth calamity is praise. According to the scholar, praise has six calamities: four belong to the praiser, two belong to the one to be praised.

The first of the calamities that befell the compliment is a lie. The more praise is given, the greater the risk of false interference with it.

The second is arrogant. Because praise is a form of expressing love. The inner world does not conform to the praise often spoken in language. As a result, the one who praises becomes an arrogance.

The third is to say something that is impossible for the person being praised.

The fourth is to praise a person who is unworthy of praise.

The first calamity that befalls the one to be praised is arrogance and conceit. The second calamity is that the one who hears the praise becomes dull. After all, he is drunk, self-satisfied, and completely satisfied with the praise he receives in his honor.

Ghazali says that the only way to avoid praise is to warn the praiser of all the secrets within him, of all that is going on in his memory, and to let him know that praise is not a good thing.

The nineteenth calamity is ignorance. Ignorance in the eyes of the scholar is not to notice the subtle mistakes in the content of this sentence. The remedy for surviving ignorance is silence, according to the thinker. According to the Ghazali Prophet (peace

and blessings of Allaah be upon him), “He who is silent will be saved,” and he who is silent will be healthy. And health is one of the two prey, he says.

The twentieth catastrophe is the question of the ordinary people. According to the scholar, ordinary people belong to the category of ordinary people who ask questions such as the attributes of Allah, the words in the Quran, and whether they are ancient or later. Their main task, according to the scholar, is to follow what is said in the Quran. It is therefore emphasized that they are wasting time with unnecessary things, forgetting the original.

**Conclusion.** According to the thinker, it is not good to ask about things that are vague, difficult to understand, even if they do not have the power to understand. This is based on the following thoughts of the Prophet: When people ask each other questions, to the extent that it is said, “Allah created all creatures”, they say, “Then who created Allah?” they say.

If they say, “Say, It is One God”. (That is, It has no partner. It is alone). Allah is great (that is, all needs are asked of It, but It does not need anyone). It was not born”.

In short, since the development of our country depends on a healthy level of enlightenment that every representative of our people must achieve, Ghazali’s philosophy of education, in which his views on language calamities, and ways of education are necessary and relevant today.

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## ACTUAL PROBLEMS IN MODERN AGRICULTURE

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# PROBLEMS OF IMPROVING THE RECLAMATION STATE OF IRRIGATED LAND DURING THE OPERATION OF OPEN COLLECTORS OF THE SYRDARYA REGION

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**Annotatsiya**: Maqolada Sirdaryo viloyati kollektor-zovur tarmog'i va uning bugungi holati, shuningdek, Sho’ro’zak ochiq kollektorining sug'oriladigan yerlarning meliorativ holatiga ta'siri haqida qisqacha ma'lumot berilgan. Maqolada ochiq kollektorning qurilishi va undan foydalanish bo’yicha tahlil materiallari keltirilgan. Ishning maqsadi Sho’ro’zak kollektori yaqinidagi vaziyatni yaxshilashga qaratilgan bo'lib, yer osti suvlari sathini pasaytirishga, shuningdek texnik jihatdan zamonaviy gidromeliorativ tizimlarini yaratishga imkon beradi.

**Kalit so'zlar**: Kollektor, tahlil materiallari, ta'mirlash-tiklash ishlari, Sho’ro’zak, namuna olish, tajriba maydonlarini tashkil qilish.

**Аннотация**: В статье приводится краткая информация коллекторно-дренажной сети Сырдарьинской области и ее состояние на сегодняшний день, а также влияние открытого коллектора Шурузяк на мелиоративное состояние орошаемых земель. Статья содержит материалы анализа строительства и эксплуатации открытого коллектора. Цель данной работы направлена на улучшение обстановки окрестности коллектора Шурузяк, позволяющее понижение уровня грунтовых вод, а также создать гидромелиоративные системы технически современного уровня.

**Ключевые слова**: Коллектор, материалы анализов, ремонтно-восстановительные работы, Шурузяк, отбор проб, организация опытных участков.

**Abstract**: The article provides brief information on the collector-drainage network of the Syrdarya region and its state today, as well as the impact of the open collector Shuruzyak on the reclamation state of irrigated lands. The article contains materials for the analysis of the construction and operation of the open collector. The purpose of this work is aimed at improving the situation in the vicinity of the Shuruzyak collector, which allows lowering the groundwater level, as well as creating technically modern irrigation and drainage systems.

**Key words**: collector, analysis materials, repair and restoration work, Shuruzyak, sampling, organization of experimental sites.

**Introduction.** The specificity of the hydrodynamic and hydrochemical regime requires a local approach to the placement of drainage systems. In small areas, closed water circulation systems are created to regulate the volume and quality of drainage water used for irrigation or for other needs [1].

In the world, the development of obtaining high yields of agricultural crops in various climatic conditions is of particular importance, taking into account the land reclamation state, the level of groundwater and their mineralization, as well as conducting targeted research works aimed at developing methods to improve the reliability of the collector operation [2]. In this regard, one of the most important tasks is to improve the methods of increasing the stability of collector slopes.

The research objectives are to develop an integrated approach to operation and planning of repair and restoration work on collector and drainage systems, taking into account the mandatory implementation of alternative measures, not opposing them to each other, but finding their rational combination.

**Material And Methods.** The Shuruzyak collector was built in 1912-1915. The collector depth was shallow - 1.5-2.0 m. As new lands were developed, the collector was reconstructed several times. According to the survey in 1926, its depth was 1.5-4.0 m. In 1957, after another reconstruction, the average collector depth reached 4.5 m, in the upper part 2.0-3.5 m, in the lower - 5-8 m. In 1970, its depth was brought to 2.5 - 9.0 m. The total length of the CDS was 1,033.9 km [3].

Deepening of collectors and drains was carried out gradually. It was not possible to carry out the reconstruction with deepening immediately to the required depths due to the fact that the soils of the upper cover fine earth on the Shuruzyak massif are close to quicksand soils in their water-physical properties. When the pressure gradient of a certain value is exceeded, the slopes of collectors and drains begin to float, causing deformation and flooding of the channel. In this regard, the channel of the Shuruzyak collector was deepened by approximately 1.0 m during the next reconstruction. Then the entire collector-drainage network was buried. As a result, groundwater levels dropped - conditions were created for the next reconstruction.

By the mid-1960s, the construction of the collector-drainage network according to the estimated length was almost completed. However, reaching the design depth of the collectors and drains in the difficult hydrogeological conditions of the old irrigation zone of the Hungry Steppe with pressurized groundwater in the underlying layers and the instability of slopes turned out to be very difficult, and in some places it was practically impossible. It became necessary to find other ways to solve the problem of combating secondary land salinization.

**Results And Discussion.** The Shuruzyak collector, 65,17 km long, has construction parameters designed to pass the design flow rate of 38,0 $m^3/s$. It was accepted into permanent operation in 1912 and recently it does not allow flow rates exceeding 10 $m^3/s$ [4].

The collector is a water intake for the main collectors of the Gulistan region Kuibotgan, VSh-X, VSh-5, VSh-9, VSh-11, VSh-11a, from the side of the Saykhunabad region Ovrazhny, Kendik, Syrdarya region of the Eastern VZhD, VSh-25, VSh-19, VSh-30, VSh-34, Malek, Chegara, VOV, Sharkiy.

The gross drained area is more than 27,54 thousand hectares. The collector is designed to pass a maximum flow rate of 38,0 $m^3/s$, has a cross-section along the bottom b=3,0-4,0 m, h=5,0-9,0 m, bottom slope i=0,00009-0,00012, current velocity V=0,9-1,2 m/s, roughness n=0,033, and slope placement before the berm m=2,0, and above the berm m=1,5. Throughout the collector $H_{buil}$=5,0 m.

The depth of the groundwater, depending on the relief marks, ranges from 0 to 3,5 m. The groundwater level from the beginning of the year to April, due to the infiltration of atmospheric precipitation, rises by 0,5-1,0 m, reaching a maximum value, then until November it decreases to the initial level.

The zone of influence of the collector covers the irrigated lands of the Shuruzyaksky depression with an area of 27,54 thousand hectares, mainly occupied by cotton, grain and rice. Also, along the collector there are a large number of fish farms [5].


Fig. 1. Scheme of the main collector Shuruzyak.

The Shuruzyak collector ensures the drainage of a part of the collector-drainage runoff from the "old" irrigation zone of the Hungry Steppe, where the open horizontal drainage, built in the 50s, does not give the required effect today.

The reasons are:

- swelling of the slopes of open drains and collectors due to the layered structure of loamy and fine quicksand sands of the soil profile;
- in this zone there is a significant underground inflow from the Chirchik-Angren basin under the bed of the Syrdarya river, which determines sub-confined waters in the territory of the Bayaut, Shuruzyak, Sardoba depressions;
- irrigation canals of various levels in the earthen bed have a slightly low efficiency, which causes a large load on drainage;
- vertical drainage well systems built in the 60-70s gave an effect, but now their statute of limitations has expired, the flow rates of wells built with metal casing pipes have low efficiency due to a drop in flow rate and a lack of submersible pumps for operation;

- in view of the unsatisfactory condition, manifested in the form of germination by vegetation (reeds, etc.) of the coastline and the bottom of the collector, a decrease in the transporting speed of water in the collector is observed, causing an accelerated process of siltation and backwater;

- areas with hydraulic structures and structures that do not meet modern standards and operational requirements (pillars, bridge piles, etc.), creating an artificial backwater, leading to an increase in the normal water level in the collector;

- silting of supply channels to pumping stations that take water from the Shuruzyak collector. For water intake by pumping stations, the channel of the collector is partially blocked by non-engineering structures named "tugan";

- the water level of the collector in the end part for the period of floods (early spring, February-April) is lower than the water level of the middle course of the Syrdarya river, in view of this, there is also a backwater, leading to negative consequences for the adjacent territory;

- outbuildings that do not meet the requirements - Provisions "On water protection zones of reservoirs and other reservoirs, rivers, main canals and collectors, as well as sources of drinking and domestic water supply, medical and cultural and recreational purposes in the Republic of Uzbekistan" № 174 dated April 7, 1992 and the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On approval of the regulation on the procedure for establishing water protection zones and zones of sanitary protection of water bodies in the territory of the Republic of Uzbekistan" № 981 dated December 11, 2019;

- the lack of access for maintenance services to the mouth of the existing reservoir is due to waterlogging and dense vegetation growth due to the close proximity of the old reservoir channel.

A radical direction for improving the situation is the reorganization of irrigation and drainage systems, which allows to sharply reduce the specific water intake for irrigation and lower the groundwater level, as well as to create technically modern irrigation and drainage systems.

**Conclusions.** As a result of many years of research, the following conclusions were made:

1. The constructed collector and drainage network gave a positive effect on desalinization of soil and ground and desalination of groundwater. However, there was no global desalinization of lands.

2. For further desalinization of lands, it is necessary to remove the pressure of groundwater. Horizontal drainage can only slightly weaken the pressure of groundwater, but cannot completely remove it. The pressure of groundwater enhances the sinking of the slopes of open collectors and drains.

3. The final solution to the problem can be achieved when vertical and horizontal drains work together. Vertical drainage should completely remove the groundwater pressure, and horizontal drainage should ensure a decrease in groundwater levels.

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# SOLUTION OF THE ENERGY EQUATION OF A TWO-PHASE MEDIUM TAKING INTO ACCOUNT HEAT TRANSFER BETWEEN PHASES

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**Annotatsiya.** Ushbu maqolada tovushdan tez harakat qiluvchi gaz va qattiq zarrachlarning oqish masalasi ko'rib chiqiladi. Izlanish natijasida zarrachali gazning soplalarda oqishi davomida yengil fazaning devor osti sohasi aniqlangan. Sonli hisoblashlar aniq misollar orqali bajarilgan. Olingan natijalar asosida egri burchakli sirt ko`rinishi chizilgan. Bosim tasdiqlanishi va haroratning sirt bo`ylab tarqalishi diametr va zarrachalarning konsentratsiyasi turli qiymatlarda hisoblangan.

**Kalit so`zlar.** Ikki fazali muhit, supersonik oqim, kam to'lqin, dinamik siljish, issiqlik uzatish, barotrop muhit.

**Аннотация.** В данной работе рассматривается задача об обтекании газа с твёрдыми частицами со сверхзвуковой скоростью. При исследовании течения газа с частицами в соплях обнаружена пристеночная область легкой фазы. В конкретном примере сделаны численные расчеты и на основе полученных результатов построены форма поверхности криволинейного угла, распределение давления и температуры потока вдоль поверхности при различных значениях диаметра и концентрации частиц.

**Ключевые слова:** двухфазная среда, сверхзвуковое обтекание, волна разрежения, динамическое скольжение, теплообмен, баротропная среда.

**Abstract.** In this paper, we consider the problem of supersonic flow around a gas with solid particles. When studying the flow of gas with particles in the snot, a near-wall region of the light phase was found. In a specific example, numerical calculations are made and, on the basis of the results obtained, the shape of the surface of a curvilinear angle, the distribution of pressure and temperature of the flow along the surface at various values of the diameter and concentration of particles are constructed.

**Key words:** two-phase medium, supersonic flow, rarefaction wave, dynamic sliding, heat transfer, barotropic medium.

**Introduction.** In this paper, the problem is solved using the energy equation of both single-phase and two-phase media, taking into account heat transfer between phases. Using an interpenetrating model of a multi-velocity continuous medium[1] and equation [2], the problem is solved about the flow around a “curvilinear angle” of more than 180 by a gas flow with solid particles at a supersonic speed (Fig. 1). In a barotropic medium [3], in the case of a rarefaction flow over the surface of the body, two regions are obtained: I- between the characteristic and the dividing line (dotted line) and II- between the dividing line and the solid surface (solid curve). In the study of the flow of gas with particles in the nozzles, the near-wall region of the light phase was found [4-8]. Without taking into account the volume occupied by the particles, the supersonic two-phase flow around a thin airfoil was considered [9] and, in particular, the structure of the rarefaction wave and the near-wall region during dynamic phase slip were investigated.°

The article [13] analyzes the transfer of matter in inhomogeneous porous media taking into account the inhomogeneous distribution of the velocity field.

**Research Methodology.** In [14], the problem under consideration is of great importance for aviation and rocket and space technology. The article presents a comparative testing of the Chen and Secundov models and the turbulence model based on the dynamics of two fluids for an axisymmetric subsonic jet. $k-\varepsilon\gamma_t-92$

In contrast to [3,9], the above problem is solved using the energy equations of both single-phase and two-phase media, taking into account heat transfer between phases; the kinematic parameters of the gas in region II are determined from the solution of the corresponding boundary value problem, and the temperature is determined from the equation of the gas energy in finite differences. In a specific example, numerical calculations are made and, on the basis of the results obtained, the shape of the surface of a curvilinear angle, the distribution of pressure and temperature of the flow along the surface at various values of the diameter and concentration of particles are constructed.

**Analysis and results.** Consider a plane supersonic flow around a concave corner of a two-phase medium with an initial velocity $U_0$... In this case, a rarefaction wave arises, which in the linear formulation degenerates into characteristics, and for a plane stationary flow of a mixture of gas and particles in the absence of external and heat flows, we have the equations of motion, continuity and energy [2]:x-ωy=0

$$\left.\begin{aligned} u_n\frac{\partial u_n}{dx}+v_n\frac{\partial u_n}{dy}&=-\frac{1}{p_{ni}}\frac{\partial p}{\partial x}+\frac{K}{p_n}\sum_{j=1}^{2}(u_j-u_n)\\ u_n\frac{\partial v_n}{dx}+v_n\frac{\partial v_n}{dy}&=-\frac{1}{p_{ni}}\frac{\partial p}{\partial y}+\frac{K}{p_n}\sum_{j=1}^{2}(v_j-v_n)\end{aligned}\right\}. \quad (1)$$

$$\frac{\partial}{\partial x}(p_n u_n)+\frac{\partial}{\partial y}(p_n u_n)=0 \qquad (2)$$

$$\left.\begin{aligned} \overrightarrow{V_1}\nabla i_1-\frac{1}{p_{1i}}\overrightarrow{V_1}\nabla p+N=0,\overrightarrow{V_2}\nabla i_2-q=0\\ N=\frac{p_2}{p_1}\left[q+\frac{K}{p_2}(V_2-V_1)^2\right],\ V_n^2=u_n^2+v_n^2,n=1,2\end{aligned}\right\}. \quad (3)$$

Taking into account that a mixture of gas and solid incompressible particles is considered here, we supplement the system with equations of state of the phases (1)-(3)[10]

$$p = R_1 p_{1i} T_1 \, , p_{2i} = const, i_1 = c_1 T_1, i_2 = c_2 T_2 \, , \quad (4)$$

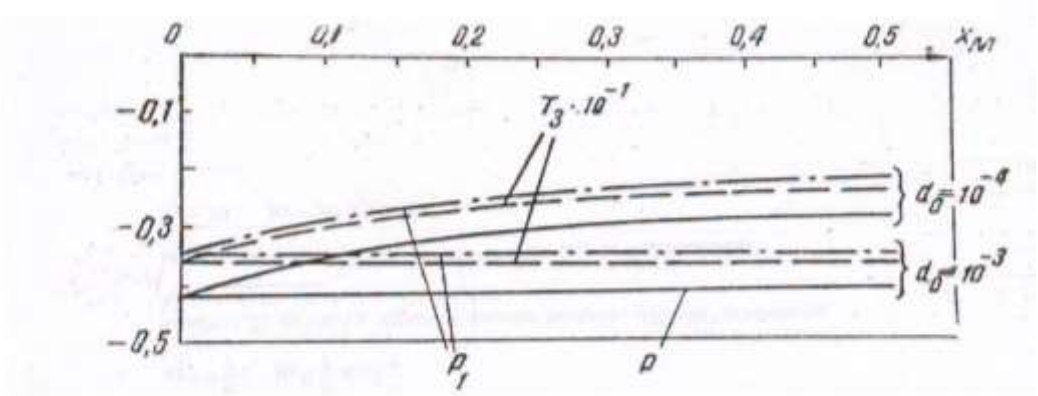
the expression for the function of interphase heat transfer$q$

$$q = \gamma(T_1 - T_2) \quad (5)$$

and the ratio

$$\frac{p_1}{p_{1i}} + \frac{p_2}{p_{2i}} = 1; \quad (6)$$

Here $p-$ pressure, $u_n, v_n -$ velocities, $T_n$ –temperature, $p_{ni}, p_n$ –true and reduced phase densities, $n-$ й phase, к, $\gamma -$ coefficients of interaction and heat transfer between phases, which in this case are taken as constant, depending on the diameter $d_0$ and density $p_{00}$ of particles, $R_1 -$ gas constant, $c_1 c_2 -$ heat capacity coefficients.




Pic. 1. The contour of the flow around the corner is larger than the flow of gas with solid particles. 180°

K system valid in region I, the linearization method is applied at (1)-(6)

$$\left.\begin{array}{c} u_n = u_0 + \grave{u_n} \, , \; \rho_n = \rho_{n0} + \delta_n \, , \rho_{1i} = \rho_0 + \varepsilon_1 \\ T_n = T_0 + \grave{T_n} \, , p = p_0 + \grave{p} \end{array}\right\}, \quad (7)$$

where $u_0, \rho_{n0}, p_0, \rho_0, T_0$ –constants; $\grave{u_n}, \varepsilon_n, \delta_n, \grave{T_n}, \grave{p}$ – small values, indices 1 and 2 correspond to the parameters of the gas and particles.

In the case of an irrotational potential flow (1)-(6) taking into account (7) take the form:

$$A_1 \frac{\partial^3 \varphi_1}{\partial x^3} + A_2 \frac{\partial^3 \varphi_1}{\partial x \partial y^2} + A_3 \left(\frac{\partial^3 \varphi_2}{\partial x^3} + \frac{\partial^3 \varphi_2}{\partial x \partial y^2}\right) - A_4 \frac{\partial^2 \varphi_1}{\partial x^2} + A_5 \frac{\partial^2 \varphi_1}{\partial y^2} + A_6 \frac{\partial^2 \varphi_2}{\partial x^2} +$$
$$A_7 \frac{\partial^2 \varphi_2}{\partial y^2} + A_8 \left(\frac{\partial \varphi_2}{\partial x} - \frac{d\varphi_1}{dx}\right) = 0 \; , \quad (8)$$

$$B_1 \frac{\partial \varphi_1}{\partial x} - B_2 \frac{\partial \varphi_2}{\partial x} = -B_3(\varphi_1 - \varphi_2) \; ; \quad (9)$$

$\varphi_1, \varphi_2 -$ velocity potentials, $A_i (i = \overline{1,8}), B_j (j = \overline{1,3}) -$ known constant coefficients depending on the Maxa number in the gas, concentration and phase interaction coefficient.

Since the parietal region II is occupied by a gaseous medium, then for the potential of the velocity of the disturbed flow $\varphi_3$

$$\varphi_{3yy} = \mu^2 \varphi_{3xx} (\mu^2 = M_1^2 - 1). \quad (10)$$

The pressure and temperature of the flow on a solid surface are found by the Bernoulli and energy equations [11] in finite difference. This approximation of the energy equation will be the more accurate, the smaller the thickness of the near-wall region II.

Let the phase separation line is set straight and forms c and an angle $\beta_0$ with the axis x. Obviously, this line is represented as the boundary streamline of particles, through which the gas freely passes into region II. Therefore, for $(8)-(10)$ we have the boundary conditions

$$y = 0,\ \varphi_{2y} = -u_0\beta_0,\ \varphi_{1y} = \varphi_{3y}\ ,\ \varphi_{1x} = \varphi_{3x}. \quad (11)$$

We add that the velocities of the two-phase system in infinite features are also limited on the characteristic

$$\varphi_1 = \varphi_2 = 0 \qquad (12)$$

On the solid boundary, the condition is satisfied gas environment, i.e. when

$$y = f(x), \varphi_{3y} = -u_0\beta(x), \left[\beta(x) = \frac{df(x)}{dx}\right]; \qquad (13)$$

Here $\beta(x)-$ the angle of inclination of the tangents to the elements of the curvilinear side of the angle, which depends on the shape of the dividing line, the structure of the flow, is an unknown function and must be determined in the process of solving the problem.

Applying to (8), (9) the Laplace transform[12], it is easy to obtain solutions with $X$ (8), (9) satisfying boundary conditions (11) and (12):

$$\varphi_1(x,y) = u_0\beta_0 e^{-a_0 y}\frac{\rho_{00}}{\rho_0}\sum_{v=0}^{\infty} b_v\left\{\frac{t^{*v+1}}{(v+1)!} + \sum_{x=1}^{\infty} c_x^0\frac{t^{*v+x+1}}{(v+x+1)!} - \frac{k}{\rho_{10}}\frac{\rho_0}{\rho_{20}}\left(\frac{\rho_{00}}{\rho_0} - 1\right)\left[\int_0^{t^*} f_1(t^*-\tau)f_3(\tau)d\tau + \sum_{x=1}^{\infty} c_x^0\int_0^{t^*} f_2(t^*-\tau)f_3(\tau)d\tau\right]\right\},$$

$$\varphi_2(x,y) = u_0\beta_0 e^{-a_0 y}\sum_{v=0}^{\infty} b_v\left[\frac{t^{*v+1}}{(v+1)!} + \sum_{x=1}^{\infty} c_x^0\frac{t^{*v+x+1}}{(v+x+1)!}\right], \qquad (14)$$

where

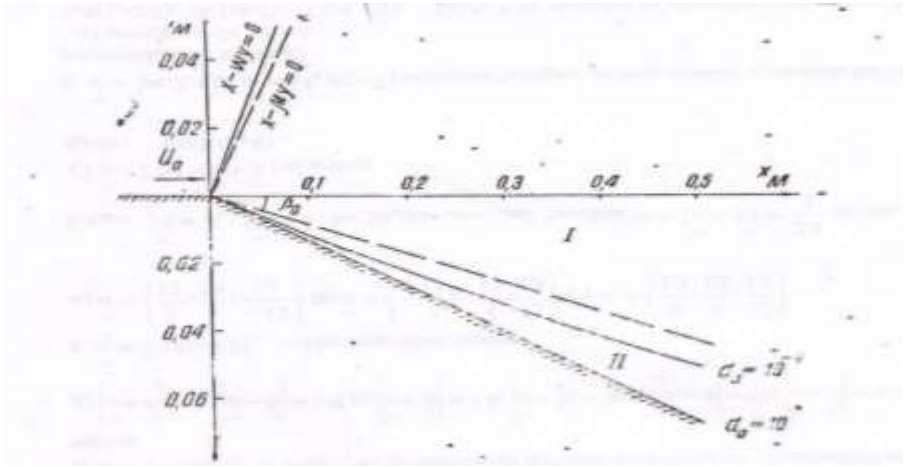
$$t^* = x - wy, w^2 = -\frac{A_1B_2 + A_3B_1}{A_2B_2 + A_3B_1},$$

$$f_1(t^*) = \frac{t^{*v+1}}{(v+1)!},$$

$$f_2(t^*) = \frac{t^{*v+x+1}}{(v+x+1)!}$$

$$f_3(t^*) = e^{-\frac{B_3}{B_1}t^*},$$

$a_0, \alpha_1, \alpha_2, \beta_1, \beta_2, b_v, c_x^0 -$ known constant coefficients. Now, taking into account (14) and the equations of motion and energy (1), (3), it is easy to obtain formulas for the pressure and temperature at the phase separation line.




Pic. 2. Distribution of gas flow pressure and gas temperature (dash and dotted line) in the flow region. Equation (10) has a solution:

$$\varphi_3(x,y) = f_1(x-\mu y) + f_2(x+\mu y) \quad (15)$$

functions $f_1(x)$ and $f_2(x)$ taking into account (11), are known from solution (14) in the flow region of a two-phase medium, are not given. Substituting (15) into (13), we obtain a first-order differential equation with respect to, which determines the shape of the solid surface.

The direct problem was solved in a similar way, i.e. at a given value of the angle $\beta_{00}$ of a solid surface with an axis , in the process of solving the parameters of regions I, II and the shape of the interface of the phase line are found.

For a specific calculation, consider the case $v_0 = 0$ , $x = 1$ and use the Stokes resistance law with cd=24/Re to find the phase interaction coefficient. Then the results for a steam-water mixture [10] at $p_0 = 10$ атм, corresponding to the initial parameters.

$$T_0 = 481 \text{ град}, c_1 = 4{,}8 \cdot 10^3 \text{ м}^2/\text{сек}^2 \cdot \text{град},$$
$$c_2 = 4{,}4 \cdot 10^3 \text{ м}^2/\text{сек}^2 \cdot \text{град}, \beta_0 = 0{,}0875,$$
$$M_1 = 1{,}85 \text{ , } \rho_{00}/\rho_0 = 1{,}8 \text{ , } \rho_0 = 0{,}5 \text{ кг} \cdot \text{сек}^2/\text{м}^4,$$
$$\rho_{00} = 0{,}9 \text{ кг} \cdot \text{сек}^2/\text{м}^4, \rho_{10} = 0{,}45 \text{ кг} \cdot \text{сек}^2/\text{м}^4$$

and coefficients $K, \gamma$ for different values of the particle diameter are shown in Pic. 2. According to calculations, the thickness of the region II depends on the concentration and diameter of the particles, i.e. the finer the particle, the thinner region II, and when it $d_0 = 10^{-5}$см almost disappears, then, apparently, the flow should be considered as one-speed. The parameter of the two-phase flow is less than the parameter of pure gas; therefore, the disturbed region I becomes wider than the disturbed region of pure gas.

**Conclusion .** Mixture pressure increment curves gas and particles in Pic. 2 in absolute value is higher than the corresponding single-phase flow curves, and the gas temperature distribution curve on a solid surface ($T_3 = T_3^{`}/T_0$) at $d_0 = 10^{-4}$см is concave relative to the axis and located above the corresponding straight line for $d_0 = 10^{-3}$см.

In conclusion, as a result of the research, the sub-surface area of the light phase during the flow of particulate gas in the nozzles was determined. The results obtained are also plotted and explained graphically. These results can be widely applied to the national economy and the gas industry.

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## IMPROVEMENT OF AIR-SOLAR APRICOT DRYING TECHNOLOGY IN HELIOTHEADERS

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**Annotasiya:** Buxoro Davlat Universiteti ilmiy laboratoriyasida quyosh qurilmalarida o‘rikni quritish uchun havo-quyosh texnologiyasi bo‘yicha tajribalar o‘tkazildi. Taklif qilinayotgan quyosh tizimida tabiiy konveksiya xodisasi qo‘shimcha tirqishlar yordamida yaratiladi. Konsepsiyalar tanlandi, uning asosida hisoblash usuli ishlab chiqildi va to‘g‘ridan-to‘g‘ri quritgich elementlarining geometrik o‘lchamlari aniqlandi. Balandlik o‘lchovlarining uzunlikka va shunga mos ravishda quritgichning kengligiga nisbati formulasi aniqlandi va atrof -muhitdan havo oqimi uchun mo‘ljallangan tirqishlarning o‘lchamlarini aniqlash usuli ishlab chiqildi. kameraga va

bug‘-havo aralashmasining quritgich kamerasining ichki qismidan atrof-muhitga chiqishi uchun. Quritgich elementlarining o‘lchamlarini tanlashning bunday usullari ularning ishlashining maqbul rejimini yaratadi, shuningdek uning kamerasi ichida tabiiy konveksion havo aylanishini yaratadi. Ishlab chiqarilgan quyosh qurilmasida o‘tkazilgan tajribalar natijalari grafik jihatdan tahlil qilinadi.

**Kalit so‘zlar:** Havo-quyoshli quritish, quritish texnologiyasi, energiya tejamkorligi, quyosh radiasiyasi, quritish agentti, issiqlik quvvati, quyoshli isitish kamerasi, muvozanatli namlik.

**Аннотация:** В научной лаборатории Бухарского государственного университета проводились эксперименты по воздушно-солнечной технологии сушки абрикосов на солнечных установках. В предлагаемой солнечной системе явление естественной конвекции создается дополнительными заслонками. Выбраны концепции, на основе которых разработан расчетно-вычислительный метод и определены геометрические размеры элементов сушилки прямого типа. Установлена формула соотношения размеров высоты на длину и соответственно на ширину сушилки, также разработан метод определения размеров заслонок, предназначенные для поступления воздуха из окружающей среды вовнутрь камеры и для выхода паровоздушной смеси изнутри камеры сушилки в окружающую среду. Такие методы выборов размеров элементов сушилки создают оптимальный режим их работы, также создают естественную конвекционную циркуляцию воздуха внутри его камеры. Результаты экспериментов, проведенных на изготовленном солнечном устройстве, проанализированы графическим методом.

**Ключевые слова:** воздушно-солнечная сушка, технология сушки, энергосбережение, солнечное излучение, сушильный агент, теплоемкость, солнечная нагревательная камера, сбалансированная влажность.

**Abstract:** In the scientific laboratory of Bukhara State University, experiments were carried out on air-solar technology for drying apricots on solar installations. In the proposed solar system, the phenomenon of natural convection is created by additional shutters. Concepts were selected, on the basis of which a computational and computational method was developed and the geometric dimensions of the elements of a direct-type dryer were determined. The formula for the ratio of the dimensions of the height to the length and, accordingly, to the width of the dryer has been established, and a method for determining the dimensions of the dampers has been developed, designed for the flow of air from the environment into the chamber and for the exit of the vapor-air mixture from the inside of the chamber of the dryer into the environment. Such methods of choosing the sizes of the elements of the dryer create an optimal mode of their operation, and also create a natural convection circulation of air inside its chamber. The results of experiments carried out on the manufactured solar device are analyzed graphically.

**Key words**: air-solar drying, drying technology, energy saving, solar radiation, drying agent, heat capacity, solar heating chamber, balanced humidity.

**Introduction.** To use solar installations operating in different modes in the process of direct drying of fruits in Uzbekistan, it is necessary to study the following problems on a scientific basis:

- it is necessary to coordinate the optimal operating modes for the selected fruits, which requires the construction of each type of solar technology;
- Only after careful mastering of the technology of air-solar drying of selected fruits, it will be necessary to conduct an experimental study on which part of the drying process and at what time one of the solar devices can be used.

The research was based on the analysis of the experimental results obtained in the solar dryer created by the authors and their processing.

**Literature review.** The most efficient type of solar dryers are natural convection direct type dryers, which are easy to manufacture and use. These types of dryers do not use any auxiliary equipment, which protects the dried fruit from external contamination. Scientists from different countries have created different designs of such dryers and conducted research on them. In the studied works, additional devices were installed on the devices, which required electricity [1], [2], [3]. The authors [3] and [4] in their scientific articles focus on direct-type solar dryers with natural convection air circulation inside its chamber. These dryers are simple in design model and the most economical types. They do not use any auxiliary equipment and are cheap compared to other types of solar dryers.

Problem statement. Determining the optimal size of the solar dryer, drying apricots using the improvement of air-solar drying technology in solar devices, creating a natural convection phenomenon.

**Research methodology.** The dimensions of the solar dryer are selected according to the following formula: $\alpha = \frac{F_{dno}}{F_{ogr.}} = \frac{2,06}{4,94 + 2,06\frac{H}{L}}$


Fig. 1. Experimental direct type solar dryer.

Taking into account the utilization factor of the bottom of a solar dryer $\alpha = \frac{F_{dno}}{F_{ogr.}} = 0,36$ with the angles of an inclined surface in relation to the horizon (through which direct and scattered solar radiation comes) $\beta_1 = 38^o$, $\beta_2 = 52^o$, (taking into account the geographical latitude of the region), a solar dryer was developed and used

for drying apricots. Figure 1 shows an actual view of an experimental direct type solar dryer.

To determine the kinetic dependence of the drying process, a combined view of the drying curves, drying speed $u(\tau)$, temperature of dried apricots $T_a(\tau)$ and drying materials $T_{a.c.}(\tau)$, as well as moisture content of drying materials $d_{a.c.}(\tau)$ and moisture content $U(\tau)$ of dried apricots is shown in Figure 2. The average daily moisture content of the drying agent is determined from the humid air $i,d$ – diagram according to the recorded average values of daily relative humidity. The average daily temperature $T_{a.c.}(\tau)$ and humidity $d_{a.c.}(\tau)$ of the drying agent are shown in Figure 2 in the form of curves 1 and 2, and their dependence on the drying process time is shown. Figure 2 shows the average daily temperature $T_a(\tau)$ and humidity $U(\tau)$ $^oC$ of dried apricots in the form of curves 3 and 4, depending on the time of their drying process. Based on the above data, the average values of the daily drying rate of apricots per hour according to Dalton's law were determined [5]:

$$u = \frac{W}{F \times \tau}$$

$u$ -Daily drying rate of apricots, *F*- surface, $\tau$ - time, *W*- Apricot mass.

Figure 2 shows a graph of the time $10^{-3} \times kg / м^2 \cdot s$ dependence of its drying process in the unit of measurement in the form of a 5 curved line.

**Analysis and results.** During the drying process, the average hourly average temperature (($T_{вх.}(\tau)$ and $T_{вых.}(\tau)$), and the relative humidity (($\varphi_{vx}(\tau)$ and $\varphi_{вых.}(\tau)$) of the drying agent were recorded at the inlet and outlet barriers in order to prove that the natural convection cycle of the dryer took place directly inside the solar dryer chamber. Table 1 shows the recorded results. Based on these data and using the humid air (i-d) diagram, the following were determined: hourly average density $\rho_{вых}(\tau)$, moisture content $d_{вых}(\tau)$, $d_{вх.}(\tau)$ and partial pressure of the drying agent at the incoming and outgoing barriers during the day $P_{вх..}(\tau)$ and $P_{вых.}(\tau)$ (Table 1).

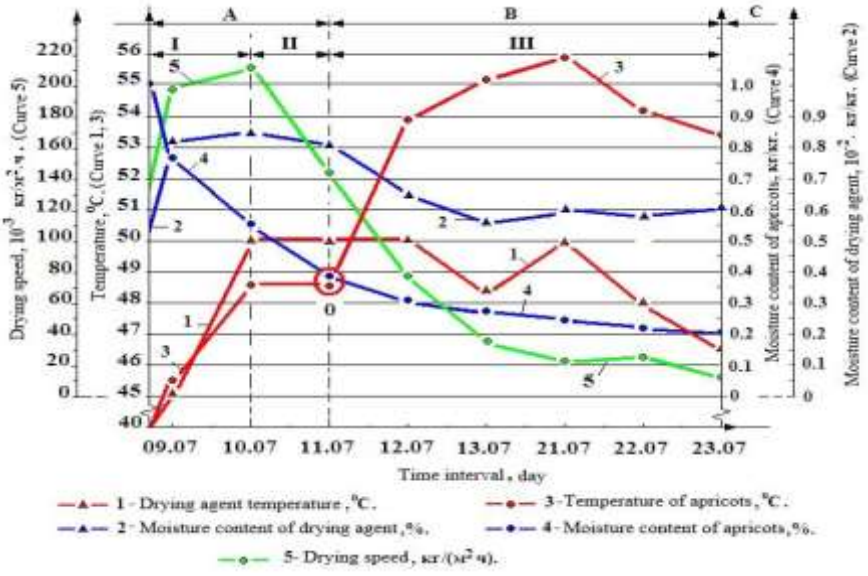


*Figure 2 Stages of the apricot drying process and periods: A, B and C - wet, hygroscopic and balanced state of apricots, respectively;*

1- Table

Recorded results of temperature and relative humidity at the inlet and outlet barriers of the dryer

| № | Date of measurement | Relative humidity in the input barrier, %. | Relative humidity in the outlet barrier, %. | Inlet barrier temperature , oC | Outlet barrier temperature, oC | Partial air pressure in the inlet barrier, кPa. | Partial pressure of air in the outlet barrier, kPa. |
|---|---|---|---|---|---|---|---|
| | $\tau$, кун | $\varphi_{вх.}$ | $\varphi_{вых.}$ | $T_{вх.}$ | $T_{вых.}$ | $P_{вх.}$ | $P_{вых.}$ |
| 1 | 09.07. | 21,6 | 32,6 | 40,1 | 46,9 | 3,2 | 3,4 (0,2) |
| 2 | 10.07. | 23,4 | 35,5 | 40,5 | 47,2 | 3,22 | 3,5(0,28) |
| 3 | 11.07. | 25,0 | 33,9 | 40,3 | 45,0 | 3,21 | 3,35(0,14) |
| 4 | 12.07. | 18,6 | 24,0 | 42,5 | 47,5 | 3,25 | 3,45(0,2) |
| 5 | 13.07. | 16,3 | 19,0 | 44,5 | 49,5 | 3,4 | 3,6(0,2) |
| 6 | 21.07. | 18.0 | 24.6 | 42,4 | 47,4 | 3,25 | 3,45(0,2) |
| 7 | 22.07. | 17.3 | 23.7 | 40,9 | 46,8 | 3,15 | 3,4(0,25) |
| 8 | 23.07. | 16.4 | 21.6 | 41,2 | 46,8 | 3,20 | 3,36(0,16) |

Using the data obtained, the density and humidity of the drying agent at the inlet and outlet barriers, the average hourly air consumption for evaporation of moisture from the apricot during the day by the solar dryer are determined using the following formula [6]:

$$\Delta L = \frac{W}{\rho_в 0,001(d_{\text{introduction.}} - d_{\text{exit.}})}$$

The results of the calculation of air consumption during the day by the solar dryer for evaporation of moisture from apricots are given in Table 2.

Excluding the losses, the heat capacity of the drying agent was calculated by the following formula:

$$Q = \Delta L \cdot (P_{\text{introduction.}} - P_{\text{exit.}}).$$

The results of the calculation of the heat capacity of the drying agent and the production of thermal energy are given in Table 2.

By the nature of the interaction between the humidity of the dried apricot and the drying agent (Fig. 2), we determine the law of variation of the average moisture content and the average temperature of the dried apricot from the time of drying. According to the method proposed by the author [7], the drying process of apricots is divided into three stages: wet (A), hygroscopic (B) and equilibrium state (C) (Fig. 1).

Table 2

Determining the average air flow rate per hour to evaporate apricot moisture from a solar dryer

| Measurement days | 9.07. | 10.07. | 11.07. | 12.07. | 13.07. | 21.07. | 22.07. | 23.07. |
|---|---|---|---|---|---|---|---|---|
| Dryer air consumption, $m^3$/h | 699,1 | 212,6 | 97,4 | 76,1 | 35,2 | 15,2 | 15,9 | 8,4 |
| Heat capacity, kJ/h | 139,8 | 59,5 | 13,64 | 15,22 | 7,04 | 3,04 | 3,98 | 1,34 |
| Heat energy generation, kJ (kV*s) | 419,4 (0,12) | 595 (0,17) | 163,7 (0,045) | 182,6 (0,05) | 84,.5 (0,024) | 36,6 (0,01) | 47,81 (0,013) | 16,1 (0,005) |

**Conclusions and suggestions.** In the wet state (A) stage, the process of drying apricots continues mainly under the influence of sunlight from 09.07.2020 to 11.07.2020 with evaporation of moisture from the surface of apricots (top layers of apricot flesh) for 25 hours. It should be noted that at this stage the temperature of the drying agent is higher than the surface temperature $\approx 1{,}5^{o}C$ of the dried apricots and the ambient temperature $\approx 10^{o}C$. At this stage, the top layers of apricot flesh are dried. The moisture content of apricots reaches 40%.

In the hygroscopic stage (B), moisture evaporates from the inner layers of the apricot flesh. This phase lasts for 60 hours under the influence of sunlight from 12.07.2020 to 13.07.2020 and from 21.07.2020 to 23.07.2020. In this case, the reverse process, i.e. condensation and moisture absorption by the masses of the upper layers of dried apricots from the drying agent, can also be observed. It is noteworthy that the surface temperature of dried apricots at this stage is higher than the temperature $6^{o}C$ of the drying agent. In this case, the temperature of the apricot peel changes the quality of sensitivity.

In the second period of drying (II), when the drying rate decreases ( $210 \cdot 10^{-3} kg/м^2 \cdot s$ from $140 \cdot 10^{-3} kg/м^2 \cdot s$ ), a heat balance (curve 1) is established between the amount of heat delivered to the apricot surface and the amount of heat used to evaporate the water. At the same time, the surface of the dried apricot remains moist, but the moisture comes from the inner layers of the apricot flesh through the capillaries.

The second stage of the drying process (B) corresponds to a period of decline $140 \cdot 10^{-3} kg/м^2 \cdot s$ from $10 \cdot 10^{-3} кг/м^2 \cdot c$ the full drying rate to. The reason why the temperature of the drying agent (curve 1) rises relative to the temperature on the surface of the dried apricot (curve 3) and the ambient temperature is explained as follows:

- Water vapor molecules in the drying agent receive additional energy due to the absorption of solar radiation by wavelengths $\lambda = (2,2-3,0) mkm;\ \lambda = (4,8-8,5) mkm;$ $\Delta\lambda_3 = (12-30) mkm;$ ;

- due to this energy the temperature of the drying agent increases with respect to the surface of the apricot and the ambient temperature [7].

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## INCREASE STUDENTS COMPETENCE IN MODELING SOFTWARE PROCESSES THROUGH OBJECT-ORIENTED PROGRAMMING LANGUAGE

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**Annotatsiya:** Muhandislik ta’limini modernizatsiyalash tushunchasi mehnat bozori talablarini hisobga olgan holda ta’lim tizimining barcha bo‘g‘inlarida o‘qitishda kompetentli yondashuvni joriy etish asosida mutaxassis tayyorlash sifatini oshirish vazifasini qo‘yadi. Shuning uchun ham ushbu tadqiqotda obyektga yo‘naltirilgan dasturlash kursini o‘rganishda texnika oliy ta’lim muassasalari talabalarida kompetensiyalarni shakllantirish jihatlarini ko‘rib chiqishdan iborat. Tadqiqotning maqsadi kadrlar tayyorlash mazmuni, usullari, shakl va vositalariga fundamental va kasbiy yo‘naltirilganlikni singdirishni hisobga olgan holda kasbiy tayyorgarlikni kompetentli yondashuv doirasida isloh qilish va kompetensiyalarni aniq mazmun bilan

to‘ldirishdan iborat.

**Kalit so’zlar:** kompetentlik, masalalar yechish, masalalar yechish usullari, dasturiy jarayonlarni modellashtirish, masalalarni algorntmlarni yechishga o‘rgatish usullari.

**Abstract:** The concept of modernization of engineering education aims to improve the quality of training based on the introduction of a competent approach to teaching at all levels of the education system, taking into account the requirements of the labor market. Therefore, in this study, the study of object-oriented programming course is to consider aspects of the formation of competencies in students of technical higher education institutions. The aim of the study is to reform vocational training in the context of a competent approach, taking into account the inclusion of fundamental and professional orientation in the content, methods, forms and tools of training and to fill the competencies with specific content.

**Key words:** competence, problem solving, problem solving methods, modeling of software processes, methods of teaching problem solving algorithms.

**Аннотация:** Концепция модернизации инженерного образования направлена на повышение качества обучения на основе внедрения грамотного подхода к обучению на всех уровнях системы образования с учетом требований рынка труда. Поэтому в данном исследовании изучение курса объектно-ориентированного программирования заключается в рассмотрении аспектов формирования компетенций у студентов технических вузов. Целью исследования является реформирование профессионального образования в рамках компетентного подхода и наполнение компетенций конкретным содержанием с учетом включения фундаментальной и профессиональной ориентации в содержание, методы, формы и инструменты обучения.

**Ключевые слова:** компетенция, решение проблем, методы решения проблем, моделирование программных процессов, методы обучения алгоритмам решения проблем**.**

**Introduction.** The main quality of a qualified specialist is the ability to solve professional tasks competently and in a timely manner. Only with this quality can an engineer be at the center of the scientific and technical process. One of the priorities of public education policy today is the transition from a knowledge-based paradigm to a competency-based approach. According to the concept of modernization of education, the goal of modern higher education is to train highly qualified, competitive professionals who are able to carry out a high level of professional activity.

**Literature review.** Object-oriented programming is a natural science in technical higher education institutions. The knowledge acquired by students studying object-oriented programming is a fundamental basis for the study of specialties and special disciplines, the acquisition of new equipment and innovative technologies[1]. The teaching of object-oriented programming should be inextricably linked with the specialty and should be based on the consideration of specific processes and events related to the professional activity of the future specialist. However, the inclusion of the task of integrating programming competence into process modeling competencies in an object-oriented programming curriculum, the implementation of professional

training by solving engineering problems is associated with objectively existing challenges[2].

**Research Methodology.** Any problem that can be solved using a computer requires the development of special software. The inefficiency of software development using old programming tools for pending computer problems and the complexity of the software development process create the need for new programming languages. This issue is handled by experienced programmers or programming teams. The main task of teachers of the basics of programming in educational institutions is to train such programmers, to effectively organize the process of teaching them the necessary information (programming basics, programming languages, information technology, etc.) to use them in their future careers.[2].

The content of the educational process in the formation of professional competence for students of technical educational institutions in the study of object-oriented programming courses - a set of knowledge, skills, abilities and personal qualities and attributes to be formed in students and methods, forms and means. Since the objectives of training are not only the formation of knowledge, but also the formation of certain types of activities, including process modeling competence, the content of training should include an integral part of the activity. Therefore, the didactic model of the topic should include two blocks: the main topic, which includes the content of the programming course in the first place, is included in the curriculum and provides the formation of a block of tools or a procedural block, knowledge acquisition, various skills, including skills related to professional activity. The main block for the science of object-oriented programming includes thematic knowledge and procedural complex auxiliary knowledge (logical, methodological, historical, interdisciplinary and evaluative)[3].

**Analysis and results.** One of the most important criteria for learning the subject of object-oriented programming is to solve engineering problems in programming, that is, to apply the acquired knowledge in engineering practice.

In order to successfully solve problems in programming, it is necessary to know the functional relationship between standard functions: be able to work with mathematical formulas; to be able to program processes starting with simple algorithms and ending with complex algorithms; ability to work in modern programming technologies; the ability of computers to read and create spreadsheets; be able to use modeling in the development of programs to solve specialization problems[4].

An important goal of object-oriented programming training is to master the methods of solving practical engineering problems on the one hand, and to achieve all the goals of programming training on the other hand can only be achieved by teaching problem-solving programming system.

Solving programming problems Performs tasks such as programming language operators, modeling problems in engineering.

The main tasks of problem solving: input-motivational; cognitive; developer; educator; application of the studied processes in mathematical modeling; formation of students' programming skills and competencies; formation of general skills and abilities of students; analysis and evaluation of program results.

Basic rules of teaching methods for constructing problem programming in the development of object-oriented programming competence: to develop a general approach to the logical search for solutions of algorithms of any engineering problem; to form a general approach, students should have a clear understanding of the process and features described in the problem to solve problems from programming; Problem solving from programming is a complex activity consisting of a series of actions, which in turn can be a number of processes (orientation, planning, execution, control); to perform complex activities from programming, students must have strong skills to perform individual actions and the processes that are part of it; express programming issues through engineering problems and develop programming competence; the structure of the activities carried out in the development of programming competence[5].

In the development of students' programming competence, the implementation of the goal consists of goal-oriented actions, each action is carried out as a separate set of processes.

Problem solving begins with the analysis of the text of the problem, the purpose of which is to create a model solution model of the problem. Through the first action, the perception of a particular task situation occurs. The choice of the elementary conditions, requirements and objects, features and objects of the problem and the relationship between them allows to present it in the form of an ideal software problem, to build a model of its software solution. The next step is to make a plan to solve the problem, to determine the goal and the desired task. Once you have created a task plan, you can begin to implement the task solution. The final action is to check the accepted solution, the purpose of which is to check the correct solution of the problem, to evaluate the reliability of the result and to formulate the answer to the problem.

Let's take a closer look at what technologies we used in the field of object-oriented programming. Practical lessons used teaching methods such as project method, discussion, business games, role-playing games, debates and similar communicative pedagogical technologies. Students should work on these methods in monologue, dialogue, public speaking, presentation, report, pair and group. The structure of teamwork competence:

Motivational competence — Presence of internal motivations for teamwork, strong desire to develop personal skills, interest in teamwork, understanding of its importance for personal and professional growth;

Individual competence — Presence of character traits such as balance, openness, tolerance, self-control, flexibility of thinking, stress-stability, initiative, tolerance, ability to work, dedication, social activism;

Cognitive competence — Set a goal for your activity, analyze the data, summarize, implement the activity and predict its outcome;

Communicative competence — Algorithm properties and methods of description from programming, types of algorithms, programming of various structural algorithms, development of oral and written speech, adherence to communication etiquette, ability to communicate, negotiate and speak in a multicultural society;

Activity competence — Ability to work in a team, know how to work together, be able to play their role in the team, be able to perform their duties successfully and

on time.

The following operations should be performed as part of all efforts included in the engineering competencies to program engineering issues: routing, planning, execution, and control.

In the study of object-oriented programming courses for the formation of students' programming competencies, students go through the following stages, gaining basic general knowledge:

The first - to study the structure of the given problem from programming (to illuminate the basic condition, object and requirements of the problem), to study the basic concepts for logical understanding of the problem (to get acquainted with the problem - to direct and execute).

The second — create the simplest algorithm in which the relationship between the demand and the condition of the problem is clear (familiarization-orientation and execution of the problem).

Third — algorithm mastering certain methods of solving problems, choosing the ideal algorithm for the problem. Requirements and conditions Solve problems related to management with a single unknown or simple conclusion (task familiarization-planning) (task implementation - planning).

Fourth — “to get acquainted with the condition of the engineering matter” and “implementation of engineering problem solving algorithm” (acquaintance with task control) assimilate control over the execution of actions (control over the implementation of decision tasks)

Fifth — study engineering issues to verify the results obtained from the program (verification of the obtained result and its analysis-directing and execution).

Sixth — “create an algorithm plan to solve the engineering problem” (problem-solving algorithm plan development-orientation and execution) mastering the operations of the implementation of the movement.

Seventh — control procedures “planning” master the process (problem-solving algorithm plan-planning) (check the result and analyze it - control).

Eighth — mastering the control operations of control operations and the complete structure of the activity on the algorithm for solving engineering problems (problem-solving algorithm plan development-control) (check the result and analyze it - control).

Ninth — apply the learned structure of activities to the development of a program of issues on new topics and sections, to participate in a more generalized form of the structure of activities formed by students.

**Conclusion.** In conclusion, the conceptual basis of object-oriented programming is the connection between programming and engineering, which is the most important in the formation of professional competencies of students of technical higher education institutions. The development of program competence is the basis for education focused on engineering paradigms, the formation of knowledge, skills, abilities and personal qualities and attributes in the student, as well as the interaction of natural sciences, specialties and special disciplines and integration in education.

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# RESEARCH OF CHANGES IN THE TECHNOLOGICAL PARAMETERS OF T-SHIRTS FABRICS

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**Annotasiya:** ushbu maqolada turli tolalar aralashmasidan, ya'ni 68,4% paxta+31,6% lavsan tolalari aralashmasi, 42% paxta+58% lavsan tolalari aralashmasi, 6% jun+17% lavsan+67% paxta tolalari aralashmasi, 100% viskoza tolali va 8,5% jun+4% lavsan+87,5% paxta tolalar aralashmasidan iplar olinib, "To'qimachilik matolari texnologiyasi" kafedrasi laboratoriyasidagi zamonaviy to'quvchilik dastgohida ko'ylakbop gazlamalar olindi va ularning texnologik ko'rsatkichlari aniqlandi.

**Kalit so'zlar:** havo o'tkazuvchanligi va ishqalanishga chidamliligi, ko'ylakbop gazlamalar yengil, havo o'tkazuvchanligi yuqori, mustahkam, tanda va arqoq bo'yicha zichligi, tikuv-trikotaj ,to'qimachilik korxonalari

**Аннотация**: в данной статье пряжа представляет собой смесь различных волокон, т. е. смесь 68,4% ириски+31,6% лавсановых волокон, 42% ириски+58% лавсановых волокон, 6% шерсти+17% лавсана+67% ириски, 100% вискозного волокна и 8,5% шерсти+4% лавсана+87,5% ириски и технологии "в отделе laboratorys в современном швейном цехе получают газообразные цветы и их технологические компоненты.

**Ключевые слова:** воздухопроницаемость и стойкость к трению, материалы для платьев легкие, воздухопроницаемость высокий, прочные, плотные по основу и утоку ,швейно-трикотажные, текстильные предприятия

**Abstract:** in this article, a mixture of different fibers, that is, 68.4% cotton + 31.6% lavsan fibers, 42% cotton + 58% lavsan fibers, 6% wool + 17% lavsan + 67% cotton fibers, 100% viscose, 8, 5% wool + 4% lavsan + 87.5% cotton yarn, and textile fabrics were obtained from textile fabrics in the laboratory of the department of "Technology of textile fabrics" and their technological processes.

**Keywords:** breathability and resistance to friction, shirt materials are light, air permeability is high, durable, dense in base and flow ,sewing and knitting, textile enterprises

**Introduction.** One of the urgent tasks of the textile industry today is the development of new assortments of shirt fabrics and improvement of quality indicators, meeting the needs of the population in shirt fabrics, development of the republic's economy through the effective use of local raw materials.

The adoption of the decree of the president of the Republic of Uzbekistan "on measures to further deepen the reform of the textile and sewing industry and to expand its export potential" PQ-4186 with the aim of introducing modern forms of Organization of cotton and textile production in the Republic of Uzbekistan and ensuring the production of competitive products serves

New high-tech jobs will be created due to high and stable growth rates of the textile and clothing industry of the republic, attraction and development of foreign direct investment, production and export of competitive products, implementation of strategically important modernization projects. creation, technical and technological re-equipment of enterprises, introduction of an advanced "cluster model". At the same time, a comprehensive analysis of the development of the textile and clothing industry, the changing conditions of the world market in the face of increased competition requires state support for the industry, as well as the development and implementation of more sustainable and dynamic development mechanisms.

The range of dress fabrics produced by textile enterprises is diverse, they differ in structure, fiber composition and properties. Moreover, these fabrics are produced according to the season. Fabrics for seasonal dresses are made from snow and cross yarns.

The range of clothing items includes indoor clothing, bathrobes, casual shirts, blouses, sundresses and party dresses, age appropriate clothing for kids, preschoolers, school children, teens, women and more.

Shirts made for the summer season should be lightweight, have high breathability, durability, shirts made for the winter season should have a high density and thickness, as well as have high heat retention properties.

The structure of textile fabrics is determined by the weave and weave of the warp and back yarns. The appearance, properties and the fact that a textile fabric is used depends on its structure.

One of the indicators characterizing the structure of shirt fabrics is their density, the other is their weaving. The density of a fabric is determined by the number of threads per unit of length, usually 100 mm.

If the density of the tissue on the weft and back is different from each other, the density of those tissues is called uneven tissue. When they are equal, the density is called flat fabric. Usually, the tissues are more dense on the body than on the back. However, with some fabrics (for example, satin, poplin), the opposite is true.

The density of the shirting fabric varies widely. The thinner the yarn of a fabric of the same density, the thinner the fabric, i.e. the less it is filled with yarn.

**Methodology.** The density of the gaskets varies depending on the purposes for which they are used. For example, with an increase in the density of the gaskets, its elongation strength, air permeability and resistance to friction increase. In addition, the fiber content of the gauze also has a different effect on its properties.

In addition, one of the features of the gaskets is its breaking strength. The power of interruption of the gaskets is also dependent on their fiber content and density.

Research work was carried out on the determination of technological indicators of gaskets. The results of the research obtained are presented in Table 1.

Table 1

**Changes in the technological parameters of T-shirt fabrics**

| t / r | Fiber fabric composition | Linear density of yarn, teks | | Mowed | Density, pieces | |
|---|---|---|---|---|---|---|
| | | according to the weft | according to the back | | according to the weft | according to the back |
| 1. | 68,4% cotton+31,6% lavsan fiber | 28 | 28 | polotno | 420 | 260 |
| 2. | 42% cotton+58% lavsan fiber | 28 | 28 | polotno | 230 | 190 |
| 3. | 6% wool+17% lavsan+67% cotton fiber | 24 | 24 | polotno | 340 | 220 |
| 4. | 100% viscose | 27 | 27 | polotno | 450 | 280 |
| 5. | 8,5% wool+4% lavsan+87,5% cotton fiber | 26 | 26 | polotno | 420 | 350 |

The histograms showing the change in the linear density and density of the threads in the composition of the T-shirt fabrics with different fiber content were presented in Figures 1 and 2

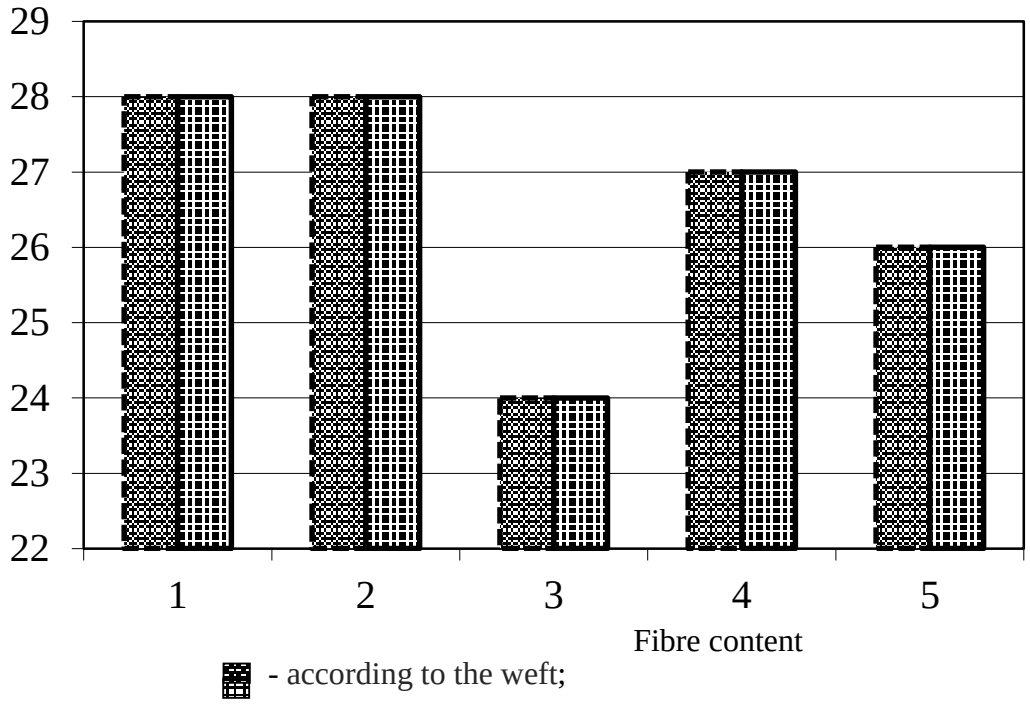


Figure 1. Changes in the linear density of the weft and back in tissues with different fiber content.

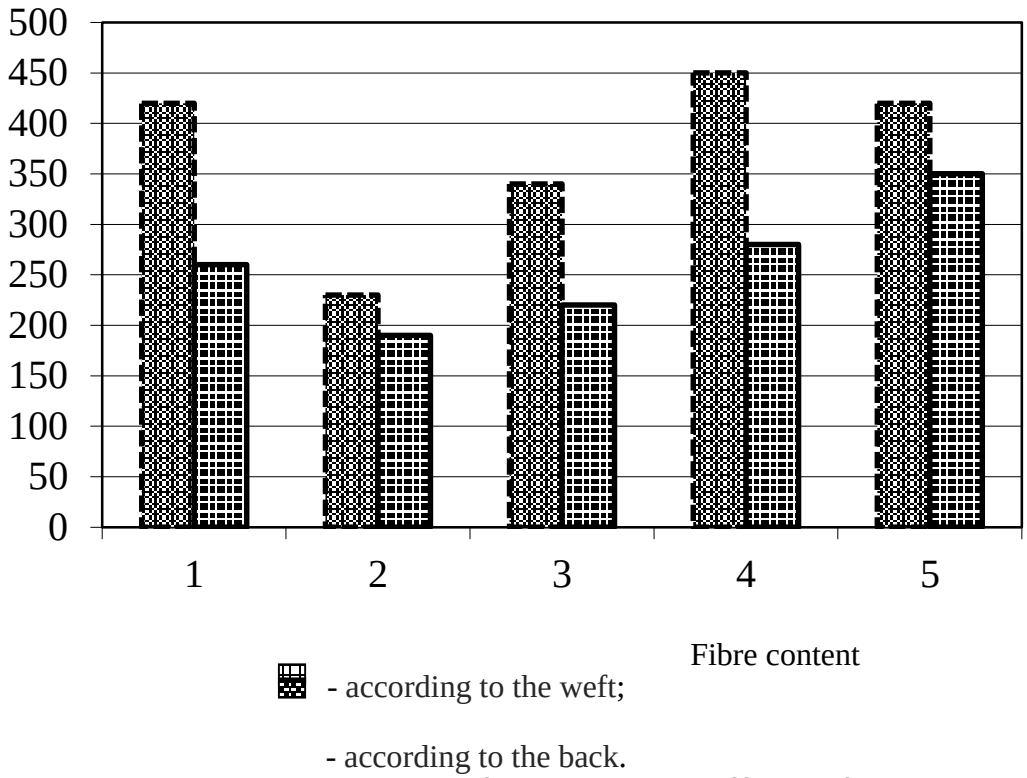


Figure 2. Changes in the density of tissues with different fiber content in the direction of the weft and back.

Technological parameters of clothes with different fiber content show that the linear density of 68.4% cotton + 31.6% lavsan fiber is 28 tex on the body, 28 tex on the back, 420 tex on the back, 420 on the back. % cotton + 58% a mixture of lavsan fibers, linen density 28 tex on the body, 28 tex on the back, 230 tex on the body, 190 on the back, 6% wool + 17% polyester + 67% cotton fabric. Linen has a linear density of 24 tex on the body, linear density on the back 24 tex, density on the body 340, linear density on the back 220 tex, linear density on the body made of 100% viscose fiber 27 tex, linear density 27 tex on the back, density 450 on the torso, 280 on the back, 8.5% wool + 4% lavsan + 87.5 tex on the back.

The results of the study showed that, depending on the purpose of using the tissues, their linear density and the change in density in the direction of the body and back will differ.

The main parameters of the fabric are, firstly, the content and density of the fiber, and secondly, its tensile strength.

Research work has been carried out to study the mechanical properties of tissues. For this, samples of shirt fabrics with different fiber content were taken and their mechanical properties were studied. The surface density of the fabric samples obtained, the tensile strength and elongation at break in the body and reverse directions were determined in laboratory conditions using modern devices.The results obtained by the test are presented in Table 2.

Table 2

Different fibers to the quality indicators of T-shirt fabrics effect of composition

On the basis of the results from Table 2, the graphs from a mixture of fibers of different composition were drawn in 3-5 drawings on the basis of the shear strength of

the gaskets on the base and the direction of the arc, the displacement Uzay and the

| t/r | Fiber of gauze composition | The power of interruption of the gassing, N | | Finishing face density, g/m2 | Interruption of the gassing, interest | |
|---|---|---|---|---|---|---|
| | | | | | base according to | Weft according to |
| 1. | 68,4% cotton+31,6% lavsan fiber | 588,3 | 511,7 | 116,2 | 36,9 | 25,9 |
| 2. | 42% cotton+58% lavsan fiber | 639,1 | 567,3 | 110,2 | 24,2 | 24,6 |
| 3. | 6% wool+17% lavsan+67% cotton fiber | 508,9 | 425,5 | 109,4 | 36,3 | 21,2 |
| 4. | 100% viscose | 515,3 | 311,0 | 115,0 | 27,2 | 18,1 |
| 5. | 8,5% wool+4% lavsan+87,5% cotton fiber | 476,8 | 404,4 | 102,3 | 28,2 | 20,8 |

change in the density of the surface.

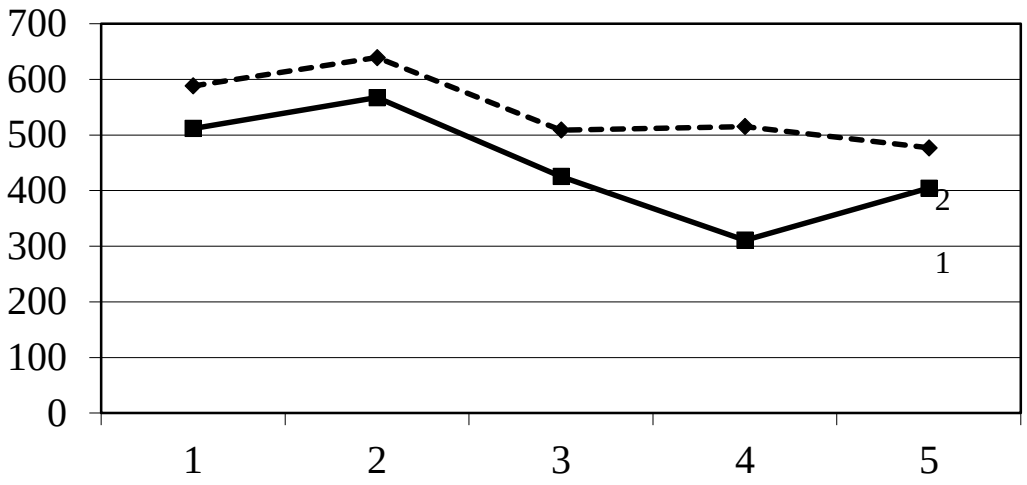


Figure 3. A shirt with a tolatarkib variety, a change in the power of the severance on the base and back directions of the finishing fabrics.

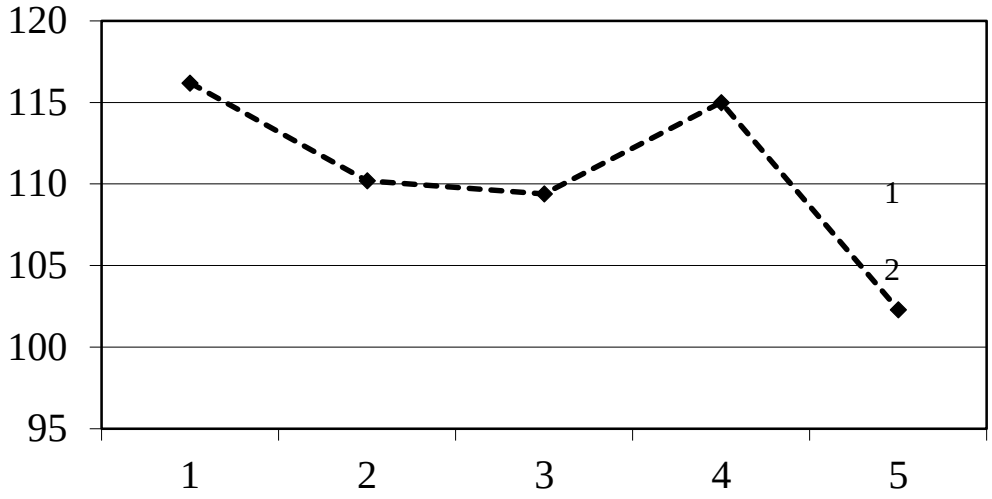


Figure 4. A change in the surface density of T-shirt fabrics, the fiber content of which is different.

**Conclusion** If we compare the results of the research with the quality indicators of the T-shirt gas obtained from the mixture of 68,4% cotton+31,6% lavsan fibers, the T-shirt gas obtained from the mixture of 42% cotton+58% lavsan fibers, the break-off power of the T-shirt gas obtained from the mixture increased to 8,0%, the break-off% wool+17% lavsan+67% shirt from a mixture of cotton fibers the elongation strength of the gauze in the direction of the base to 13,5% , the power of interruption in the direction of the weft decreased by 16.8%, the density of the surface decreased by 5.9%, the power of interruption in the direction of the body decreased by 1.7%, the power of interruption in the direction of the weft decreased by 18.1%, the power of interruption in the direction of the base by 100% viscose fiber the elongation rate decreased by 30,1%, and the elongation power of the shirtshop gassing obtained from a mixture of 8.5% wool+4% lavsan+87,5% cotton fibers by the direction of the base to 18,9% , the power of interruption in the direction of the back decreased to 21.0%, the density of the surface to 11.9%, the power of interruption in the direction of the base to 23.6%, the power of interruption in the direction of the weft decreased to 19.7%.

As can be seen from the analysis of the results of the study, it was proved that the mechanical properties of the shirt-top gaskets obtained from a mixture of 42% cotton+58% lavsan fibers are higher than those of other fiber-containing gaskets.

The test analysis showed that, depending on the fiber content of the gas, it was determined that the power of the break in the direction of the base varies from 8,0% to 18,9%, the power of the break in the direction of the weft varies from 9,9% to 39,2%.

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