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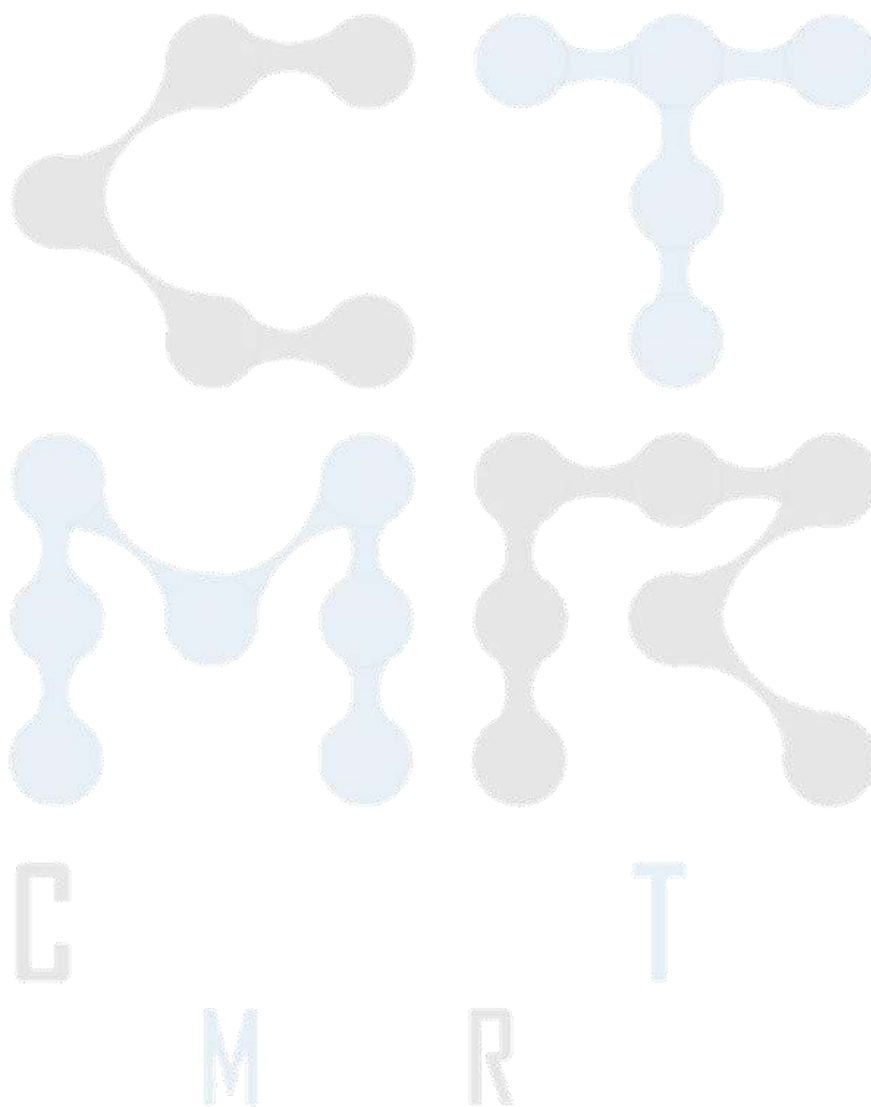
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THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

THE IMPORTANCE OF ENGINEERING GRAPHICS IN IMPROVING THE SKILLS OF FINE ARTS AND ENGINEERING GRAPHICS TEACHERS.

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Annotation

According to the qualification description, the teacher of "Fine Art and Drawing" is a highly qualified specialist in folk decorative art, technical creativity, artistic design, leading technical and artistic design circles, as well as decorating schools and classrooms at the required level. is required. To date, it is necessary to creatively improve the content of the educational process in order to form the qualities listed above in the future teachers.

Key words: individual, composition, engineering, computer, communication, monitoring

If we analyze the content and structure of the drawing course taught in the "Fine Art and Engineering Graphics" bachelor's course from the point of view of the specialist's professional activity, we will face a number of shortcomings. Firstly, the pedagogical direction of the materials and the future professional activity of the graduate were not taken into account when describing theoretical and practical information; secondly, most of the individual graphic assignments performed by students have been neglected by the pedagogical direction, thirdly, the content of the graphic core in the qualification recommendation letter of the teacher of fine arts and engineering graphics has not been brought into one system. In our republic, teachers of drawing and painting are mainly trained in "fine arts and engineering graphics" bachelor courses. Sometimes drawing can be taught by teachers of vocational education in general secondary schools. Drawing and painting teachers are assigned the task of conducting training in other subjects of the graphic cycle in vocational colleges based on the specialist qualification. These subjects have their own characteristics according to the direction of specialization. Examples of subjects included in graphic arts in vocational colleges include design, construction drawing, artistic planning, topographical drawing, applied graphics (advertising and industrial graphics), print design, poster, computer graphics, interior and equipment architecture, and graphic design. a set of subjects can be shown.

As a result of the above-mentioned shortcomings, a textbook that fully covers the program materials from drawing has not been published for students of the "Fine Arts and Engineering Graphics" undergraduate course. Most of the existing textbooks do not cover the features of education, in particular, the feature of the future professional activity of a graphic designer-pedagogue. We can fully express this opinion in relation to the independent assignment options given to graphic pedagogues.

Also, if we take into account the artistic education of the "Fine Art and Drawing" teacher, he is an artist-designer in vocational colleges, an artist in industrial design, an artist of industrial equipment and transport systems, an artist of objects of cultural and household importance, We must also emphasize that they can conduct training in many specialties, such as a pattern artist, a lacquer

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

miniature artist, a calligraphy and miniature artist, an artist in the fields of decorative applied arts. Teachers of drawing and fine arts can conduct classes of higher methodical level of these subjects. Because they are expected to acquire fundamental and in-depth knowledge, skills and competences during their education in the universities of fine arts, drawing and drawing geometry (along with the perspective section). Designers and art designers need knowledge and skills in these areas. It is necessary to look for ways to include modern subjects in the model curriculum in order to make it possible to pass additional courses in graphic arts in vocational colleges, and to organize facultative and clubs from similar fields in general education schools.

In most of these directions, if students have acquired knowledge, skills and qualifications during their education at a higher educational institution, they can master some new modern subjects through professional development and independent study. possible In that case, it is crucial how the teacher develops the skills of independent work, effective use of educational and scientific-methodological literature. it is of great importance in the formation of qualities such as freedom and hard work. It is impossible to train teachers of "Fine Art and Drawing" according to modern standards without extensive and in-depth teaching of the science of drawing and its branches. It is particularly important for students to know the information about the use of drawing in life, technology, science, architecture, and design. Drawing is objectively considered an independent strong block of specialized sciences. That is why knowledge, skills and competences in drawing and drawing geometry (especially its "Perspektiva" section) are often separated from fine and applied arts in professional activity. is necessary.

With the development of computer graphics, it can be observed that the interest in making high-quality drawings by hand among students began to decrease somewhat. It is difficult to imagine making a competent drawing on a computer without acquiring fundamental knowledge of drawing and good graphic techniques. We believe that it is very useful to include brief information about the history of drawing tools and their current status in developed countries in the textbooks and training manuals of future drawing and painting teachers. This increases students' interest in graphic arts. Most of the textbooks published so far for students of "fine arts and drawing" do not have such a section. The skills of working with dreams and paints using drawing tools and stencils are also useful for the future teacher.

The teacher of "Fine Art and Drawing" must have mastered the basics of graphic design. Unfortunately, the technique of working with dreams and paints is not covered in Uzbek language textbooks and training manuals. It's time to create such guides for students and those interested in decorative arts.

The knowledge of the teacher who teaches drawing should be wide and deep in the field of graphic science, beyond the scope of evaluating students' knowledge. For this, the teacher:

- The history, modern state and prospects of development of graphic arts and their teaching methodology;
- Sections of graphics such as "Numeric projections", "Perspective", "Shadows", "Axonometric projections";

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

- It will be useful to know the practical applications of graphics apparatus in science, technology, design, life, creative activities of young people, creative biographies of famous geometers and pedagogues, interesting graphic tasks and games.

In recent years, a number of positive works have been carried out in these directions in our country. In particular, at the Uzbekistan-Finland Pedagogical Institute, students are taught the history of graphics and creative biographies of scientists who contributed to its development. Work is being carried out to improve the content of graphics cycle subjects in other HEIs. However, it is difficult to say that the changes in the education system of the republic are not fully reflected in the model curriculum. Modern subjects are not included in the cycle of graphics, the features of pedagogical activities are not taken into account in the model curricula of visual arts, drawing geometry, perspective and drawing subjects. On top of that, the time allocated to study drawing geometry and drawing has been reduced in the current model curriculum, and the modules of the subjects have been combined.

It is natural that the expressed opinions will be controversial, and the participants of the conference may have different approaches to the issue. However, it is necessary to pay maximum attention to the methodical development vectors of the graphic education system and the directions of development of the educational system of our society when preparing the next normative documents of the "Fine Art and Drawing" bachelor's course.

Here, let's briefly touch on the requirements for textbooks and training manuals for graphic design subjects:

1. Reflecting social and humanitarian trends:
 - a) Practical benefit in everyday life;
 - b) Information from areas such as aesthetic orientation and universal culture-history, art history, architectural design;
 - c) Positive emotional sensitivity;
 - d) Formation and development of interest in science;
 - e) Development of artistic abilities of students - future teachers of fine arts and drawing;
 - f) Development of personal and creative abilities;
2. Technical and polytechnic direction;
3. General pedagogical direction;
4. Special Caspian lighting and access to the "Fine Art and Drawing" specialist model;
5. Use of new information and pedagogical technologies;
6. The existence of interactions between graphic cycle subjects and other subjects in the curriculum;
7. The existence of mutual relations between the structural parts of the graphic cycle.

Conclusion

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Most of these requirements are interrelated, one logically follows from the other, the existence of one determines the need for the other. If the above students try their best to fulfill each newly created new literature, it will contribute to the increase in the quality and efficiency of education.

REFERENCES:

1. D. E. Omonov, J.T.Kholikov, Sh.X.Egamova., The Role and Importance of Using Graphic Programs in Shaping Students' Knowledge and Skills. Nexus : Journal of Innovative Studies of Engineering Science (JISES) Volume: 01 Issue: 04 | 2022 ISSN: 2751-7578 <http://innosci.org/> 45 | Page
2. D. E. Omonov, S.M.Suvankulov, J.Kh.Kadyrov., The Role of Continents and Neighborhoods in the History of Samarkand Nexus : Journal of Innovative Studies of Engineering Science (JISES) Volume: 01 Issue: 04 | 2022 ISSN: 2751-7578 <http://innosci.org/> 27 | Page
3. D. E. Omonov, S.M.Suvankulov, J.Kh.Kadyrov., Decorations Used in the Interior of Historical Residences of Uzbekistan and Their Situation Today (in the example of the city of Samarkand) Nexus : Journal of Innovative Studies of Engineering Science (JISES) Volume: 01 Issue: 04 | 2022 ISSN: 2751-7578 <http://innosci.org/> 32 | Page
4. I. U. Izbasarov, I.Sh.Suvonkulov, D.E.Omonov., Spatial Imagination and Logical Thinking as a Pedagogical Basis for Teaching Students to Design Nexus : Journal of Innovative Studies of Engineering Science (JISES) Volume: 01 Issue: 04 | 2022 ISSN: 2751-7578 <http://innosci.org/> 37 | Page
5. D. E. Omonov., Conceptual Bases of the Production of Teaching Technologies in Exposure and Practical Training (In the Example of the Engineering Graphics Course) Pioneer: Journal of Advanced Research and Scientific Progress (JARSP) Volume: 01 Issue: 04 | 2022 ISSN: 2751-7551 <http://innosci.org> 104 | Page
6. D. E. Omonov., The Role of Engineering Graphics in the Training of "Fine Arts and Drawing" Teachers Pioneer: Journal of Advanced Research and Scientific Progress (JARSP) Volume: 01 Issue: 04 | 2022 ISSN: 2751-7551 <http://innosci.org> 108 | Page
7. I. U. Izbasarov, D.E.Omonov, S.Abduvohidova., Stages of Working Thematic Composition in Fine Arts Lessons Pioneer: Journal of Advanced Research and Scientific Progress (JARSP) Volume: 01 Issue: 04 | 2022 ISSN: 2751-7551 <http://innosci.org> 112 | Page
8. D. E. Omonov, M.S.Sidikova, Sh.X.Egamova, F.O.Jahonova., Conceptual bases of production of teaching technologies in lectures and practical classes of engineering graphics international journal of progressive sciences and technologies. (IJPSAT) ISSN: 2509-0119. © 2021 International Journals of Sciences and High Technologies <http://ijpsat.ijsh-t-journals.org> Vol. 29 No. 2 November 2021, pp.84-87
9. D. E. Omonov, M.S.Sidikova, A.I.Temirova, F.G'.Otayorova., Integration Of Computer Technologies In Secondary Schools Of Fine Arts. International Journal of Progressive Sciences and Technologies (IJPSAT) ISSN: 2509-0119. © 2021 International Journals of Sciences and High Technologies <http://ijpsat.ijsh-t-journals.org> Vol. 29 No. 1 October 2021, pp.497-499
10. DILSHOD ESONOVICH OMONOV., Ways to introduce the science of painting to the visual arts using new pedagogical technologies. International journal of philosophical studies and Social sciences ISSN-E: 2181-2047, ISSN-P: 2181-2039 <http://ijpsst.iscience.uz/index.php/ijpsst> Vol 1, Issue 3 2021

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

11. D. E. Omonov., Integration of fine arts and computer technologies in art education of students. MIDDLE EUROPEAN SCIENTIFIC BULLETIN ISSN 2694-9970 Middle European Scientific Bulletin, VOLUME 17 Oct 2021
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13. Omonov Dilshod Esonovich., Spiritual values and their importance in human development. NOVATEUR PUBLICATIONS INTERNATIONAL JOURNAL OF INNOVATIONS IN ENGINEERING RESEARCH AND TECHNOLOGY [IJIERT] ISSN : 2394-3696 Website: ijert.org VOLUME 8, ISSUE 10, Oct. -2021 199 | P a g e
14. D. E. Omonov., Improving Conversation Classes on Fine Arts in Secondary Schools. European Journal of Innovation in Nonformal Education (EJINE) Volume 2 | Issue 2 | ISSN: 2795-8612.
15. D.E.Omonov., the Role of Graphics in the Training of Teachers of "Fine Arts and Engineering Graphics" European Journal of Innovation in Nonformal Education (EJINE) Volume 2 | Issue 2 | ISSN: 2795-8612.
16. D. E. Omonov, G. Namozova, F. Rashidov, S. Abduvohidova., Engineering graphic sciences are a conceptual framework for conducting educational technologies in lectures and practical training.

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Аннотация: На этой статье мы поделились с вами причинами возникновения, историей появления, видами и формами, профилактикой, диагностикой, методами лечения, симптомами, народной медициной летаргического сна называемого мнимой смертью.

Ключевые слова: летаргический сон, симптом, коматозное состояние, история о спящих, ароматерапия, синдром «Спящей красавицы», апатия.

Летаргия – редкое заболевание, окутанное множеством тайн. Оно произошло от древнегреческих слов *lethe* и *argia* («забвение» и «бездействие»). Страдающий недугом будто спит, но при этом разбудить его невозможно. Другие названия болезни: летаргический сон, мнимая смерть, истерический сон, «малая жизнь», это состояние, характеризующееся глубоким, продолжительным сном или коматозным состоянием, при котором человек может быть не способен реагировать на окружающую среду, но не теряет рефлексы. Это состояние может быть вызвано различными причинами, включая:

Летаргический сон может проявляться в различных формах и состояниях.

Вот основные виды, которые можно выделить:

1. Первичный летаргический сон

- Причины: Часто связан с инфекционными заболеваниями, такими как энцефалит или менингит.

- Симптомы: Глубокий сон, отсутствие реакции на внешние раздражители.

2. Секундарный летаргический сон

- Причины: Возникает в результате травм, инсультов или интоксикаций.

- Симптомы: Может сопровождаться изменениями в дыхании и сердечном ритме.

3. Психогенный летаргический сон

- Причины: Связан с психическими расстройствами, такими как депрессия или шизофрения.

- Симптомы: Долгий сон, подавленное настроение, апатия.

4. Летаргический сон при метаболических нарушениях

- Причины: Возникает из-за дисбаланса в организме, например, при гипогликемии или электролитных нарушениях.

- Симптомы: Может проявляться в виде усталости и слабости.

5. Летаргический сон при хронической усталости

- Причины: Переутомление, стресс или недосыпание.

- Симптомы:

Устойчивое желание спать, снижение активности в течение дня.

Каждый вид летаргического сна требует индивидуального подхода к диагностике и лечению. Если наблюдаются симптомы летаргии, важно обратиться к врачу для определения причины и получения необходимой помощи.

Известны следующие формы болезни:

легкая — человек выглядит просто спящим, у него сохраняются сознание, восприятие, ровное дыхание, но практически отсутствуют двигательные функции;

тяжелая — больной становится похожим на мертвеца, реакции на внешние раздражители сильно ослабевают или исчезают.

Активность мозга во время этого болезненного состояния нередко сохраняется: спящие люди могут слышать голоса и другие звуки, запоминать услышанные события, осознавать все, что происходит.

При *тяжелом* течении заболевания кожа бледнеет, холодеет, зрачок не реагирует на свет, тело не отзывается на боль, артериальное давление падает. Дыхание таких больных очень поверхностное, пульс прощупать сложно. Человек начинает терять вес, страдать от обезвоживания. Прекращаются выделения, а также биологическое развитие организма.

Известные примеры

Один из известных и загадочных случаев летаргического сна был эпидемией энцефалита. Она распространялась с 1917 по 1928 год. Также известное как болезнь фон Экономо, оно проявляется сильной сонливостью. Иногда длительным состоянием, похожим на кому.

Пациенты с энцефалитом часто впадали в состояние, «*сонной болезни*» – длительную дрему, из которой их было сложно разбудить. Это могло длиться неделями, месяцами или даже годами. Наблюдались другие симптомы, такие как паралич, абнормальные движения, изменения в поведении и психические расстройства.

Другим примером может служить состояние, известное как «синдром Клейне-Левина», также известный как «*синдром Спящей красавицы*». Это редкое заболевание, при котором человек периодами страдает от чрезмерной сонливости, которые могут длиться от нескольких дней до нескольких недель. Во время этих эпизодов человек может большую часть времени спать, просыпаясь только для удовлетворения основных потребностей, таких как еда и туалет. *Между эпизодами симптомы обычно полностью исчезают.*

Интересно.

Интересный исторический пример — история о «спящих» жителях Калачи, маленького села в Казахстане, где в период с 2010 по 2015 год жители страдали от необъяснимых приступов сонливости, длительностью от двух дней до недели.

Продолжительность. Основной признак летаргического сна — удлиненная продолжительность, зачастую на несколько часов больше обычного.

Трудность пробуждения. Человека трудно разбудить, а после пробуждения не понимает происходящего.

Сниженный уровень сознания. В периоды бодрствования наблюдается заторможенность, снижение реакции на внешние раздражители.

Изменения в поведении и настроении. Возможны изменения настроения, пассивность, апатия, раздражительность или даже депрессивные периоды.

Физическая слабость. Часто наблюдается общая усталость, снижение энергии и активности.

Когнитивные нарушения. Трудности с концентрацией внимания, нарушения памяти и способности к осмыслению информации.

Аппетит и метаболические изменения. Могут происходить изменения в аппетите, пищевых привычках и общем метаболизме.

Еле ощутимое сердцебиение. При летаргическом сне пульс – 2-3 раза в минуту.

Причины возникновения летаргического сна

Неврологические заболевания. Такие как энцефалит, менингит, опухоли головного мозга, которые могут вызывать воспаление или давление на мозговые структуры, отвечающие за регуляцию отдыха и бодрствования.

Психиатрические болезни. Депрессия, биполярное расстройство и другие психиатрические заболевания могут проявляться повышенной сонливостью и летаргией.

Метаболические и эндокринные нарушения. Гипотиреоз, гипогликемия и другие нарушения, влияющие на обмен веществ, могут вызывать чрезмерную сонливость.

Лекарственные препараты. Некоторые медикаменты, особенно седативные и препараты для лечения психических расстройств, могут вызывать летаргию и повышенную сонливость.

Хронические заболевания. Хронические болезни, такие как сердечно-сосудистые заболевания, могут привести к ухудшению общего состояния и увеличению потребности в дреме.

Нарушения. Состояния, такие как апноэ, могут серьезно нарушать качество отдыха, ведя к дневной сонливости и летаргии.

Токсическое воздействие. Отравление угарным газом, тяжелыми металлами или другими токсическими веществами может вызвать угнетение центральной нервной системы.

Недостаток витаминов и микроэлементов. Недостаток витаминов группы В, железа и других микроэлементов может привести к снижению энергии и увеличению утомляемости.

Хронический стресс и усталость. Длительный стресс и переутомление могут привести к истощению организма, в результате чего возникает потребность в увеличенном количестве отдыха.

Идиопатические причины. В некоторых случаях причина сонливости может оставаться неизвестной, и такое состояние классифицируется как идиопатическое.

Уровни тяжести

Легкая степень. Человек испытывает повышенную утомляемость, затруднения с пробуждением, но сохраняет способность к самостоятельному функционированию.

Средняя степень. Значительное увеличение продолжительности отдыха,

Причины

1. Инфекционные заболевания:

- Вирусные или бактериальные инфекции, такие как грипп или менингит.

2. Неврологические расстройства:

- Ушибы головы, инсульт или травмы, влияющие на мозг.

3. Метаболические нарушения:

- Например, гипогликемия или электролитные дисбалансы.

4. Психические расстройства:

- Депрессия или другие расстройства, которые могут вызвать состояние летаргии.

5. Токсические воздействия:

- Отравления алкоголем, наркотиками или химическими веществами.

Симптомы

- Долгий и глубокий сон.
- Пониженная реакция на внешние раздражители.
- Ухудшение когнитивных функций, таких как память и внимание.
- Возможны изменения в дыхании и сердечном ритме.

Диагностика

- Медицинская история и физикальное обследование: чтобы выявить причины состояния.
- Лабораторные тесты: анализы крови для оценки электролитов, уровня глюкозы и других параметров.
- Неврологическое обследование: МРТ или КТ для проверки на наличие повреждений мозга.

Лечение

Лечение зависит от причины летаргического сна и может включать:

- Медикаментозную терапию: для лечения инфекции или других заболеваний.
- Гидратацию и коррекцию электролитного баланса.
- Реабилитацию: для восстановления функций после выздоровления.

Народная Медицина:

1. Травяные настои

- Череда: помогает при воспалительных процессах. Чай из череды может улучшить общее состояние.
- Мелисса и мята: имеют успокаивающее действие и могут помочь расслабиться.

2. Витамины и минералы

- Настой шиповника: богат витамином С, способствует укреплению иммунной системы.
- Чередование приема меда: мед может улучшить общее самочувствие и повысить уровень энергии.

3. Ароматерапия

- Эфирные масла: масла лаванды, розмарина или лимона могут помочь в улучшении настроения и повышении активности.

4. Физическая активность

- Легкие физические упражнения или прогулки на свежем воздухе могут способствовать улучшению самочувствия.

5. Правильное питание

- Увеличение потребления свежих овощей и фруктов, богатых витаминами, а также сбалансированное питание помогут организму восстановиться.

Вывод: Поддержание общего здоровья: здоровое питание, регулярные физические упражнения и достаточный сон. Избегание токсичных веществ и соблюдение мер предосторожности при травмах.

Летаргический сон может быть серьезным состоянием, требующим медицинского вмешательства особенно если он связан с инфекциями или неврологическими расстройствами.

Результат: Народные средства не заменяют медицинскую помощь. Если кто-то находится в состоянии летаргического сна, необходимо немедленно обратиться к врачу. Все народные методы должны использоваться с осторожностью и после консультации со специалистом, особенно если имеются хронические заболевания или аллергии.

Не забывайте, что своевременная медицинская помощь — ключ к восстановлению.

СПИСОК ЛИТЕРАТУРЫ

1. «Будоражающий сон: летаргический энцефалит и история медицины» автора Д. А. Рандольф.
2. «Летаргический энцефалит: психиатрические исследования» под редакцией Э. Э. Торонтона.
3. 3.«Летаргический энцефалит: диагностика и лечение» под редакцией Л. Дж. Виллемса и Л. А. Гибсона.
4. 4.«Летаргический энцефалит: история, эпидемиология, медицинская генетика» автора М. Хэррисона.
5. 5.«Энцефалиты и их последствия: медицинская и историческая перспектива» автора Д. П. Маркуса.
6. Гусев Е.И. "Неврология и психиатрия". Москва, 2019.
7. Экономо К. "Эпидемический энцефалит". Вена, 1931.
8. Сидоров П. "Патологические состояния сна". Журнал неврологии, 2021.
9. Kubaev A. TIBBIYOTDA MATEMATIK MODELLASHTIRISH VA NANOTEXNOLOGIYALAR //Евразийский журнал математической теории и компьютерных наук. – 2023. – Т. 3. – №. 9. – С. 17-26.
10. Esirgapovich K. A. RULES OF USING MATHEMATICAL MODELING IN THE FIELD OF MEDICINE //ENG YAXSHI XIZMATLARI UCHUN. – 2023. – Т. 1. – №. 6. – С. 582-584.

**ПРИМЕНЕНИЕ СИСТЕМЫ НАССР ПРИ ПРОИЗВОДСТВЕ
РАСТИТЕЛЬНЫХ ПАСТ КАК ФУНКЦИОНАЛЬНЫХ ИНГРЕДИЕНТОВ
МОЛОКО СОДЕРЖАЩИХ НАПИТКОВ**

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Аннотация: Наиболее приемлемой формой системы управления качеством пищевых продуктов является система управления на принципах НАССР, так как обеспечение качества и безопасности продукции согласно плану НАССР основывается на непосредственном процессном контроле. Представлены результаты разработки и внедрения плана системы НАССР, анализа опасных факторов и критических контрольных точек в производстве растительных паст как функциональных ингредиентов молокосодержащих напитков; на основании анализа рисков составлен перечень учитываемых опасных факторов (микробиологических, химических, физических) и установлены критические контрольные точки.

Ключевые слова: растительная паста; молокосодержащий напиток; функциональный ингредиент; цеолиты; контроль качества; НАССР.

Введите

Повышение качества и придание функциональных свойств продуктам питания, массового потребления, является важным направлением развития пищевой индустрии. В то же время, такие продукты не должны представлять опасности для здоровья человека. Современные исследования в области здоровья и питания населения показывают, что проблема расширения и изменения структуры ассортимента пищевой продукции за счет включения в него функциональных молокосодержащих напитков не теряет своей актуальности и обусловлена объективными причинами. Это экологическая напряженность регионов и нарушение пищевого статуса населения Республики Узбекистан за счет ограничения потребления важнейших биологически активных нутриентов - белков животного происхождения, витаминов, минеральных веществ, пищевых волокон и увеличения в рационах питания доли насыщенных жиров и сахара и, соответственно, ухудшение показателей здоровья [1; 2].

Одним из факторов, формирующих потребительские свойства безопасной пищевой продукции функционального назначения, наряду с введением в продукты профилактических добавок и применением специальных технологических приемов, направленных на обеспечение

качества и безопасности, является разработка и внедрение в жизненный цикл продукции систем менеджмента качества. Система НАССР (англ. - Hazard Analysis and Critical Control Point, рус. - Анализ Рисков и Критические Контрольные Точки) является эффективной и успешно применяемой системой для управления качеством и безопасностью продукции на пищевых предприятиях [3; 4]. Особенностью этой системы является то, что при ее помощи изучается каждый шаг - этап в пищевом производстве, выявляются специфические риски - опасности, внедряются эффективные методы контроля и мониторинга. Количество критических контрольных точек зависит от сложности и вида продукции, производственного процесса, попадающих в область анализа^{1 2}.

Целью данных исследований явилась разработка мероприятий системы НАССР при производстве растительных паст как функциональных ингредиентов молочносодержащих напитков для обеспечения качества и безопасности продукции посредством систематического исследования каждого этапа производственного процесса - от сырья до конечного потребителя.

Объектом исследования являлись опытные образцы паст из растительного сырья Бухарского региона и ягодных соков, обработанных с применением природных и модифицированных цеолитов (природные минералы). При выполнении исследований учитывались особенности технологического процесса получения продуктов переработки растительного сырья (соков, паст), выявлялись потенциально опасные факторы и по каждому из них проводился анализ риска с учетом вероятности появления того или иного фактора и серьезности последствий его проявления. Для идентификации критических контрольных точек при анализе сырья и процессов использовали диаграмму - «дерево принятия решений». Значимость потенциальной опасности выявляли, применяя структурирование и метод анализа рисков по качественной диаграмме.

Результаты и их обсуждение. При составлении и оптимизации рецептур растительных паст учитывались результаты исследований органолептических характеристик, химического состава и пищевой ценности. В технологическом верстате (процессе использованы оборудования) применялись технологические приемы обеспечения безопасности продуктов переработки растительного сырья с использованием природных и модифицированных цеолитов путем оптимизации состава воды, детоксикации

продуктов переработки плодово-ягодного сырья (соков).

Контроль, проводимый по окончанию производственного процесса, может не обеспечивать достаточных условий для создания в последующем полной уверенности в безопасности пищевой продукции. Ретроспективное микробиологическое исследование так же не всегда может дать такую уверенность. Следовательно, целесообразно использование превентивных программ для контроля процессов, которые охватывают входящие материалы и обработку, упаковку и хранение, распределение и реализацию. В рамках плана НАССР учитывались особенности технологического процесса получения продуктов переработки растительного сырья (соков, паст). Так же выявлялись потенциально опасные факторы и по каждому из них проводился анализ риска с учетом вероятности появления того или иного фактора и серьезности последствий его реализации, что в совокупности определяло значимость данного фактора для безопасности исследуемого функционального продукта. Для идентификации критических контрольных точек при анализе сырья и процессов использовали диаграмму - «дерево принятия решений», описывающую ход логических рассуждений. Вероятность появления опасного фактора оценивали, исходя из следующих возможных вариантов оценки: «практически равна нулю», «незначительная», «значительная», «высокая».

Значимость потенциальной опасности выявляли, применяя структурирование и метод анализа рисков по качественной диаграмме - графику зависимости вероятности реализации опасного фактора от тяжести последствий его проявления.

Тяжесть последствий употребления продукта, содержащего опасный фактор, оценивали исходя из следующих возможных вариантов оценки:

- «легкое» - не приводит к последствиям, наблюдается общее легкое недомогание, для взрослого человека потеря работоспособности отсутствует;
- «средней тяжести» - возможна необходимость медикаментозного лечения в течение нескольких дней;
- «тяжелое» - ущерб здоровью, сопровождающийся потерей работоспособности на длительный период, что может привести к легкой степени инвалидности;
- «критическое» - инвалидность 1 группы или «точка не возврата».

Результаты анализа риска возникновения потенциально опасных факторов позволили составить перечень учитываемых факторов, при которых риск превышает допустимый уровень. В соответствии с полученными данными по каждому фактору определялась степень его опасности для выявления

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

критических контрольных точек.

Анализ рисков при производстве растительных паст как функциональных ингредиентов молоко содержащих напитков.

Перечень потенциально опасных факторов, учитываемых при производстве растительных паст как функциональных ингредиентов молоко содержащих напитков с использованием растительного и минерального сырья Бухарского региона, представлен в таблице.

Таблица-1

Опасные факторы, учитываемые при производстве растительных паст как функциональных ингредиентов молока содержащих напитков

№	Вид и наименование учитываемого фактора
<i>Микробиологические факторы</i>	
1	МАФАНМ, КОЕ / г
2	БГКП (коли-формы) в 1 г продукта
4	Золотистый стафилококк в 1 г продукта
5	Плесени, КОЕ / г
6	Дрожжи, КОЕ / г
<i>Химические факторы</i>	
7	Токсичные элементы (тяжелые металлы)
8	Радионуклиды (цезий-137, стронций-90 и др.)
<i>Физические факторы</i>	
9	Минеральные включения (камни, песок)
10	Загрязняющие факторы среды (пыль, семена растений)
11	Насекомые и отходы их жизнедеятельности

Таким образом, система НАССР позволяет избежать применения потенциально опасных перерабатываемых материалов, трех видов рисков: биологических, химических и физических; угроз для здоровья людей, не эффективных финансовых затрат, издержек вследствие разного рода нарушений в сфере производства и потребления пищевых продуктов. При внедрении системы НАССР контроль продукции дополнен контролем процессов, реализуется удовлетворение необходимости в постоянно безопасных продуктах питания,

повышение эффективности вложения средств. Разработанная и внедренная система НАССР в жизненный цикл растительных паст как функциональных ингредиентов молоко содержащих продуктов дает уверенность в обеспечении их качества и безопасности, соблюдении установленных нормативов и регламентов производства пищевой продукции.

Библиографический список

1. *Австриевских А. Н., Вековцев А. А., Позняковский В. М.* Продукты здорового питания: новые технологии, обеспечение качества, эффективность применения. Новосибирск: Сиб. унив. изд-во, 2005.
2. *О состоянии и охране окружающей среды Красноярского края в 2009-2011 гг.:* государственные доклады. Красноярск: Красноярский филиал ФГУП «Госцентр «Природа», 2010, 2011, 2012.
3. *Принципы ХАССП.* Безопасность продуктов питания и медицинского оборудования. М.: Стандарты и качество, 2010.
4. *Управление качеством на предприятиях пищевой и перерабатывающей промышленности:* учеб. для вузов / А. Н. Австриевских и др. 2-е изд., испр. и доп. Новосибирск: Сиб. унив. изд-во, 2007.
5. ГОСТ Р 51705.1-2001. Системы качества. Управление качеством пищевых продуктов на основе принципов ХАССП. Общие требования: принят постановлением Госстандарта России от 23 января 2001 г. № 31-ст с учетом директивы Совета Европейского Сообщества 93/43 от 14 июня 1993 г. «О гигиене пищевых продуктов», введ. в действие 1 августа 2009 г. Изд. офиц. М.: Стандартинформ, 2009.
1. 5. *Ashurova M.Z., Sulaymanova G.X.* Development of Technology for Functional Confectionery Products. International Journal on Orange Technologies: Vol.3 №11(2021) :P.9-15
2. *Ашурова М.З., Сулайманова Г.Х., Ганиева Н.Х.* Совершенствование и технологии и расширение ассортимента хлебобулочных изделий. Техника и технология пищевых производств. Материалы XV Юбилейной Международной научной-технической конференции. Том I. Могилев- 2023. С. 180-181.
3. *Ашурова М.З., Сулайманова Г.Х., Ганиева Н.Х.* Продукты функционального назначения. Техника и технология пищевых производств. Материалы XV Юбилейной Международной научной-технической конференции. Том I. Могилев-2023. С. 228-229
4. *Ashurova M.Z., Sulaymanova G.X.* Prospects for the use of non-traditional raw materials in the production of flour confecnioneri products of increased nutritional and biological value. Web of scientist: International scientific research journal ISSN :2776-0979, Volume 3 ,Issue 10,Oct., 2022.P. 504-514.

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METHODOLOGY OF INSPECTION OF GAS METERS

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МЕТОДИКА ПРОВЕРКИ СЧЕТЧИКОВ ГАЗА

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Annotation

In this article testing of measuring instruments specified in the type description of measuring instruments. At present, the majority of household gas meters are checked by individual inspection methods, i.e., in accordance with GOST 8.324-2002, and proposals for household inspection of households by accredited organizations have been developed and information has been clarified.

Аннотация

В данной статье рассмотрены испытания средств измерений, указанные в описании типа средств измерений. В настоящее время большинство бытовых счетчиков газа проверяются индивидуальными методами поверки, т.е. в соответствии с ГОСТ 8.324-2002, а также разработаны предложения по проведению бытового осмотра домовладений аккредитованными организациями и уточнены сведения.

Key words: GOST 8.324-2002, GOST 8.324, measuring unit, measuring instrument, calibration, comparative analysis, standard requirement.

Ключевые слова: ГОСТ 8.324-2002, ГОСТ 8.324, единица измерения, средство измерений, калибровка, сравнительный анализ, требования стандарта.

Introduction

Currently, most household gas meters are tested using individual testing methods or in accordance with GOST 8.324-2002.

The gas meter is supposed to be checked on inspection devices after disassembly from the gas pipeline using air as a test device. Checking household gas meters without removing them from the gas pipeline, but they are not published by the manufacturers as methods of checking. However, some accredited organizations offer and conduct. To simplify the process of organizing the inspection of household gas meters for their owners, the new edition of GOST 8.324 establishes the methodology for on-site inspection of household gas meters using natural gas as a means of inspection.

Also, the updated GOST 8.324 regulates the procedures for checking the tightness of the meter and checking the operation of the meter when exposed.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

The updated GOST 8.324 contains the necessary requirements for checking gas meters. Some rules and sections of the standard are recommended and used in the development of individual inspection methods for certain types of gas meters.

The international standard GOST 8.324–2002 is being updated. Gas meters. Verification methodology” [2]. As part of the update of the standard, the authors have developed a number of important changes and additions aimed at solving the problems that arise in this area. Mandatory periodic inspection of household gas meters by owners of apartments and private households. The costs of using the meter, including the costs of its maintenance and inspection. When the next inspection is due, certain rules must be followed to ensure that the owner of the meter is contacted. Gas service service with a request to dismantle the meter, transportation of the dismantled meter to an accredited organization for inspection;

Rules of inspection:

"On the approval of the procedure for checking measuring instruments, requirements for the inspection mark and the content of the inspection certificate" [1] during the inspection of measuring instruments, it is carried out according to the specified inspection method. For the purpose of type approval, measuring instruments and testing of measuring instruments specified in the type description. At present, most of the household gas meters are tested according to GOST 8.324–2002 [2] using individual testing methods. Accredited organizations offer households to check the gas meter without disassembling it, by connecting the calibrator to the gas pipe between the device under test and the existing gas equipment. .

Additional features

GOST 8.324 Organization of inspection of household gas meters for their owners to simplify the process. The new edition of GOST 8.324 also establishes a methodology for inspection of household gas meters at the place of use using natural gas as a test tool, which includes several steps. Before the inspection, the inspection device (standard) is stored according to the requirements at the workplace. Stay in the room for at least 2 hours to reduce the temperature. During this time, turn off the gas supply in advance, disconnect the meter from the gas supply line and test the meter [3]. In GOST 8.324-2002, one of the conditions for submitting an invoice is proof of this - the presence of a test report, for density, but for checking for the procedure, there are no requirements for test equipment, and it is not specified who will carry it out, it is the owners of the meter and the organizations that carry out the inspection raises questions between [4].

When conducting the inspection, it is necessary to take into account the differences in the subjects temperature and pressure of the medium measured in the meter and standard. If the temperature of the environment (air) measured in laboratory conditions does not change on the counter and in standard practice, then when checking the meter on site using natural gas, the temperature difference can be significant. A change in temperature along with a change in pressure causes a change in density along the length of the gas pipe. For example, the fact that the temperature difference between the meter and the standard is 1 °C and the pressure drop between the meter and the standard of 300 Pa is not taken into account (equal to the maximum permissible pressure drop per head) Additional method of checking the meter according to GOST R 8.915–2016 [7] gives a relative error: ± 0.35 and $\pm 0.3\%$, respectively. This leads to non-objective inspection results, in which the working gas meter can be considered incorrect.

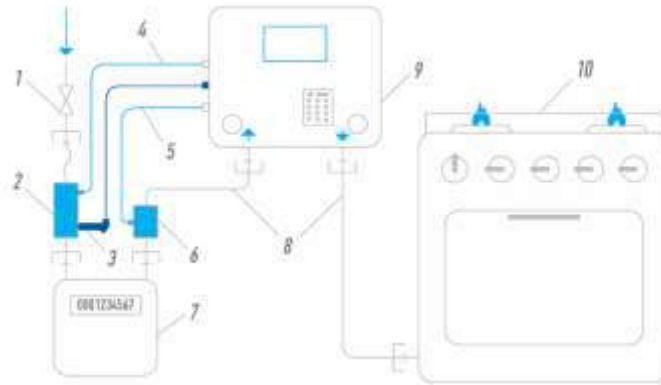


Figure 1: Connection diagram of the testing outfit for on-site calibration of gas meters: 1 – gas valve; 2 – adapter for connecting a thermometer and taking pressure at the inlet of the meter; 3 – thermometer; 4, 5 – pressure take-off tube; 6 – adapter for the pressure take-off at the outlet of the meter; 7 – calibrated gas meter; 8 – connecting pipe; 9 – standard (testing outfit); 10 – gas-using equipment

In this regard, it is necessary to control the temperature and pressure of the gas when performing on-site testing, not only at the entrance to the building where the test will be conducted, but also at the entrance, the meter must be adjusted. As a result, the meter must be connected to the gas supply line through an adapter with a fitting for connecting the means for measuring the temperature and pressure at the entrance to the meter, as shown in the figure [6]. An adapter with an output device should also be installed across the meter to monitor the drop in pressure at its outlet. Next, connect the standard to the gas supply line, between the meter and the gas-using equipment, check the tightness of the connections in accordance with the operating documents of the inspection standard, and conduct an inspection. If a heat-insulated supply (hose) with a length of no more than 1.5 m is used to connect the meter to the standard and there are no sources of heat and cold, it is allowed not to measure the gas temperature at the entrance to the meter being tested. 1 m distance. When checking meters with temperature correction of the measured volume, the gas temperature at the entrance to the meter is not measured, but the volume is set to a temperature of 20 ° C in the standard measurement mode.

In addition, the new edition of GOST 8.324 introduced previously unregulated verification of the performance of meters, when the gas is exposed to a magnetic field, in addition, the types of meters that the manufacturer operates according to the documents, metrological and technical specifications of the meter of the influence of the magnetic field. This new innovation aims to detect gas meters that have been modified to tamper with readings by magnetically affecting the operation of the meter mechanism. Taking into account the fact that such gas meters can pose a danger to life during operation, the process of calibration of measuring devices is considered important.

In conclusion, we can say that GOST 8.324 contains the necessary requirements for checking gas meters. It is recommended to use separate rules and sections of the standard when developing individual inspection methods for certain types of gas meters. Counters that can be used for GOST 8.324, the procedure for checking their type as a document has been optimally improved on the basis of standards, so we can say that compliance with the standard requirements of each measuring instrument in the field of metrology means saving human life and nature.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Literature

1. ГОСТ 8.324–2002. Государственная система обеспечения единства измерений. Счетчики газа. Методика поверки [Электронный ресурс]. Режим доступа: <http://docs.cntd.ru/document/1200032261> (дата обращения: 07.02.2019).
2. МИ 2944–2005. Счетчики газа бытовые. Методика поверки на месте эксплуатации с помощью эталонного счетчика [Электронный ресурс]. Режим доступа: <http://gostrf.com/normadata/1/4293788/4293788971.pdf> (дата обращения: 07.02.2019).
3. МИ 3400–2013. Счетчики объема газа. Методика поверки на месте эксплуатации установкой поверочной СПУ-3 [Электронный ресурс]. Режим доступа: <https://normativ.su/catalog/69368.php> (дата обращения: 07.02.2019).
4. ГОСТ Р 8.915–2016. Государственная система обеспечения единства измерений. Счетчики газа объемные диафрагменные. Общие технические требования, методы испытаний и поверки [Электронный ресурс]. Режим доступа: <http://docs.cntd.ru/document/1200137302> (дата обращения: 07.02.2019).
5. Rajabovich, S. R. (2024). Methods Of Improving Technological Quality In Cleaning Grain Mixtures From Waste Based On Gost Requirements. *Texas Journal of Multidisciplinary Studies*, 29, 127-130.
6. Хужжиев, М. Я., & Салимова, З. С. (2021). Очистка природного газа от меркап и серных растворов. *Universum: технические науки*, (3-3 (84)), 83-86.
7. Хужжиев, М. Я., Бабаев, Ф. Ф., & Тиллаева, Ш. Ф. (2022). ТЕХНОЛОГИЯ ПОЛУЧЕНИЯ БИОГАЗА ПУТЕМ ПЕРЕРАБОТКИ ОТХОДОВ, ВЫБРАСЫВАЕМЫХ ИЗ ГОРОДСКИХ КАНАЛИЗАЦИЙ. *Universum: технические науки*, (4-10 (97)), 22-24.

СВЕДЕНИЯ СОЧИНЕНИЯ «МИН ШИЛУ» О ПОСОЛЬСТВАХ ТЕМУРИДОВ В КИТАЙ

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Annotation. An article according to Chinese written sources ("Ming shilu" ("True records [of the deeds of the Ming Emperors]"), about trade and embassy relations between the descendants of Amir Temur and the emperors of the Ming Dynasty. After the death of Amir Temur, relations between the empires were restored. Among the gifts sent by Samarkand and Herat, jade appears, along with horses. The Yongle Emperor actively encouraged the expansion of trade and tried to increase the number of embassies arriving in China. After his death, China moved away from its early expansionist policies due to cost and inefficiency. Expensive expeditions such as the naval missions of the famous Admiral Zheng He were also discontinued.

Keywords: the descendants of Amir Temur, Yongle Emperor, Central Asia, Chinese sources, "Ming shilu", trade and diplomatic relations, jade, China, the Ming Dynasty.

Введение. После воцарения на престоле в 1368 г. минский двор (Ming, 明)¹ решил восстановить «китайский мировой порядок» [2; 4; 7]. Существует традиционное представление о том, что китайцы на протяжении веков развили особую систему отношений с иностранцами, которую они практиковали на протяжении большей части их существования. По этой системе, Китай (Zhongguo, 中國) являлся Срединным государством (царством), а все другие страны считались данниками [7: 223].

Никто до первого императора Мин Хуньу (Hongwu, 洪武)² не устанавливал стабильных и действенных договоренностей с наиболее отдаленными государствами Сиюя (Xiyu, 西域)³. Первоначально двор сосредоточился на соседних областях Восточного Туркестана (Xinjiang, 新疆, начиная с эпохи Цин⁴), а затем, на связях с более отдаленными областями Центральной Азии.

Торговля лошадьми. Главным товаром в торговле между династией Мин и центрально-азиатскими правителями были лошади. Лошади упомянуты как «дань, или дары» (gong, 貢)⁵ почти в каждой миссии из центральноазиатских стран, особенно из соседних стран Восточного Туркестана. Хотя китайские чиновники зачастую жаловались

¹ Мин (Ming, 明 – китайская династия, империя, 1368-1644 гг.

² Хуньу (Hongwu, 洪武 – девиз правления Чжу Юаньчжана (Zhu Yuanzhang, 朱元璋, первого императора династии Мин. Храмовое имя – Тай-цзу (Taizu, 太祖. Годы правления – 1368-1398 гг.

³ Сиюй (Xiyu, 西域 – Западный край, Западные страны. Так называли в китайских письменных источниках страны, лежавшие к западу от собственно Китая, включая территорию Восточного Туркестана или Синьцзяна (начиная с эпохи Цин).

⁴ Цин (Qing, 清 – китайская династия, империя, 1644-1911 гг.

⁵ Китайский император считал себя правителем всех других правителей, которых китайцы считали «вассалами», а их периодические дары к китайскому трону они представляли как «дань» (gong, 貢).

на низкое качество привезенных последними лошадей, такой вид товара был полезен для Китая, потому что страна испытывала недостаток в лошадях. Минские императоры стремились обеспечивать себя лошадьми и были довольны даже такими предложениями [7: 239].

Китайские письменные источники, среди которых отметим «Историю [династии] Мин» (Ming shi, 明史) [3] и «Материалы «Правдивых записей [династии] Мин» по разделам» («Ming shilu» leijuan, 明实录类纂 涉外史料卷) [6] и др., содержат многочисленные записи о посольствах от центральноазиатского правителя Темура (Temuer, 帖木兒) и его потомков.

В 185 главе (juan, 卷) «Правдивых записей [правления императора] Тайцзу» (Taizu shilu, 太祖实录) записано, что в 1387 г. «...самаркандский правитель Амир Тимур отправил мусульманина Мавлоно Хафизы (Маньла Хафэйсы) и других к династии. Привезли 15 лошадей и 2 верблюдов, а в ответ император Мин подарил 15 слитков белого золота» [6: 1063].

Щедрые ответные дары минского двора не только привлекали официальных посланников династии Тимуридов, привозивших много лошадей, но и побуждали простых торговцев лошадьми из Самарканда и других мест приезжать для торговли в Китай.

В последующие годы Амир Тимур регулярно отправлял посольства в Китай – в 1388 г. привезли 300 лошадей, в 1389 г. 205 лошадей, в 1390 г. 670 лошадей, в 1391 г. 52 лошади, в 1392 г. 84 лошади, в 1394 г. 200 лошадей, в 1395 г. 212 лошадей, в 1396 г. 240 с лишним лошадей и в том же 1396 г. 1905 лошадей [6: 1064].

Это были последние сведения в «Правдивых записях» об отправке посольств из Самарканда в период правления Амира Темура.

Осложнение отношений. Несмотря на отсутствие известий об уже отправленных в Самарканд послах (например, Фу Аня, 傅安)⁶ минский двор, тем не менее, продолжал отправлять посольства с дарами.

Так называемые, «даннические» посольства прибывали в Китай регулярно, а китайские официальные источники, особенно «Правдивые записи» (Shilu, 實錄) приводят довольно полное описание посольств и товаров, которые они привозили минским правителям.

Императоры Мин щедро одаривали посланников и их правителей. Часть из этих даров были прямыми подарками, которые получали правители, их посланники, сопровождающие и др., согласно китайскому представлению об их статусе, власти и богатства. Такие подарки включали шелка, атлас, хлопковые товары, ботинки, чулки и шляпы и т.д. Другие дары были определенными платежами за «даннические» товары [9: 218]. За лошадей китайский двор выдавал определенное количество шелка, атласа или бумажных денег, либо других предметов потребления. Этот обмен был, в действительности, торговлей, несмотря на китайский ярлык «дани».

⁶ Посол Минов Фу Ань (傅安) отправился в Самарканд в 1395 г. и только после смерти Амира Темура в 1407 г. он был отпущен Халиль-султаном на родину [11: 104-115].

Значительная часть посольств из Самарканда была, несомненно, коммерческой во главе с торговцами, жаждавшими торговать с Китаем. В надежде получить щедрые дары торговцы умело именовали себя официальными посланниками и представляли письма, якобы, от Темура, в которых последний рассматривал китайского императора как вышестоящего правителя. Это привело к осложнению отношений между первым императором Минов и Амиром Темуром, который задержал китайских послов и готовился к походу на Восток.

«Правдивые записи [правления императора] Тайцзуна» в цзюани 68 описывают изменения, произошедшие в империи Амира Темура после его смерти и отмечают о возвращении Фу Аня из плена: в 1407 г. «... цензор военного отдела (bingke jishizhong, 兵科給事中) Фу Ань (傅安), Го Цзи (郭驥) и другие возвратились из Самарканда (撒馬兒罕). Фу Ань в 28-й год (1396)⁷ [правления] Хуньу [был] отправлен послом в Сиюй (西域), оставался в Самарканде 13 лет. Действительно, слышно, их предводитель Халиль (Hali, 哈裏) вступил на престол, поэтому отправил посла Худайда (虎歹達) и других сопроводить Аня и других домой, также [прислал] дань (дары) – местные товары. ... Ань и другие сообщили: «Темуэр Фума (зять) [династии] Юань скончался, Хали (Халиль)⁸ стал преемником, является внуком Темура». Сразу же [издали] указ командировать (zhihui, 指揮) Байаэрцзиньтая (白阿兒沂台) и других для поминания Темура, также жалования Халилю (Хали) письма с императорской печатью, серебряных денег... с разницей (по рангам)» [6: 1066].

Торговля нефритом. Узурпация императором династии Мин – Юнлэ (Yongle, 永樂)⁹ трона, смещение им с престола своего племянника Цзяньвэня (Jianwen, 建文)¹⁰ и решение последующих вопросов о законности своего воцарения, возможно, вдохновила его к тому, что он стал активно привлекать в Китай иностранные посольства, поскольку, в конфуцианском представлении, хороший император естественно привлекает «варваров», чтобы они «прибывали и менялись (трансформировались)» (lai-hua, 來化), то есть, признавали превосходство китайской цивилизации, становясь более покорными [9: 222]. Чем больше иностранных посольств прибывало в Китай, тем более весомым и законным представлялось воцарение на престоле Юнлэ в глазах своих подданных. Возможно, что дорогостоящие морские экспедиции адмирала Чжэн Хэ (鄭和)¹¹ также служили распространению китайского влияния на соседние и далекие страны.

⁷ По другим данным – 1395 г. Согласно «Ming shi», в 1395 г. «император велел *цзишичжуну* Фу Аню и другим [вручить Амиру Темуру] послание с императорской печатью, [а также] бумажные деньги и ткани, [в знак] благодарности. Присылаемые ими [самаркандцами] в дар лошади ежегодно превосходили число 1000» [5: 31865 (3673a)].

⁸ Халиль-султан – (14 сентября 1384 – 4 ноября 1411), внук Амира Темура, третий сын Миран-шаха.

⁹ Юнлэ (Yongle, 永樂 – девиз правления Чжу Ди (Zhu Di, 朱棣), правивший с 1402 по 1424 гг. Посмертное храмовое имя – Чэн-цзу (Cheng-zu, 成祖).

¹⁰ Внук первого императора Хуньу – Чжу Юньвэнь (Zhu Yunwen, 朱允文), правившего под девизом Цзяньвэнь (Jianwen, 建文) очень короткое время с 1398 по 1402 гг. Посмертное храмовое имя Хуэй-ди (Hui-di, 惠帝).

¹¹ Чжэн Хэ (Zheng He, 鄭和) – известный мореплаватель эпохи Мин, совершивший семь морских экспедиций в страны Индокитая, Индостана, Аравийского полуострова и Восточной Африки. Хуэйцзу (回回) по происхождению, потомок выходцев из Бухары. Годы жизни – 1371-1435 гг.

Как отмечено в «Повествовании о Западном крае» (Сиюй чжуань, 西域傳), главе 332 «Истории [династии] Мин», в год восхождения на трон (1403 г.), Юнлэ издал высочайший указ, в котором, в частности, сказано: «отныне всех чужеземцев пропускать в Китай, повиноваться...» [3: 42-43]. При такой политике поощрения, торговые караваны из западных от Китая стран «заполнили все дороги», их повозки, груженные товарами «достигали более ста» [3: 43]. Не были исключением посольства из Самарканда и Герата. За десять лет, с 20-го года правления Хуньу (1387) по 29-й год правления Хуньу (1396), количество лошадей, привезенных Амиром Тимуром в качестве даров (в китайских источниках обозначаемых «данью»), было зафиксировано только в «Правдивых записях Мин Тайцзу» – не менее 3050, но фактическое количество лошадей было значительно больше этого [8].

Торговля приносила немалую прибыль и время правления Юнлэ стало вершиной развития торговых отношений Китая с Западными странами (Хиу, 西域) в эпоху Мин.

Отношения Темуридов и императоров Мин после смерти Амира Темура наладились. К концу первой трети царствования Юнлэ пассивно-оборонительная позиция Китая сменяется активным внешнеполитическим курсом.

Халиль-султан в летом 1408 г. прислал посла Шэйха Нуриддина с дарами, которого сопровождал в обратный путь Фу Ань. Об этом сообщают «Правдивые записи [правления императора] Тайцзуна» в главе 78: «...главарь (правитель) Самарканда (撒馬兒罕) [отправил] Шэйха Нуриддина (Шахэй Нуэрдин, 沙黑奴兒丁) и других с данью (дарами). [Вскоре] попрощались и вернулись домой. Отправили цензора военного отдела (jishizong, 給事中) Фу Аня (傅安) сопровождать [их]...» [6: 1067].

В результате междоусобной борьбы младший сын Амира Темура Шахрух¹² в 1409 г. сумел стать правителем империи Темуридов. Он перенес столицу империи в Герат, а правителем Самарканда стал его сын – Мирзо Улугбек¹³. Они продолжили активные торгово-посольские отношения с династией Мин.

«Правдивые записи [правления императоров] Мин» скрупулезно перечисляют все центрально-азиатские посольства и привозимые ими товары и дары. Мы видим, что среди даров, присылаемых Самаркандом, появляется, наряду с лошадьми, нефрит (yushi, 玉石). Китайские исследователи считают, что драгоценные и полудрагоценные камни занимали вторую строчку среди товаров, привозимых из Самарканда и Герата в Китай, после лошадей [8].

По данным «Правдивых записей [правления императоров] Мин» посольства из Самарканда и Герата от потомков Амира Темура привозили нефрит 7 раз. Например, в 1487 г. «...иноземцы поднесли нефрит (yu, 玉)... посланник из Самарканда и других западных варваров (xifan, 西番) Аладаолаце (阿剌倒剌兒) и другие поднесли нефрит (yu, 玉) ...» [6: 1081].

¹² Шахрух – Муин аль-Хакк ва-д-Дин Шахрух (20 августа 1377 – 12 марта 1447), эмир, младший сын Амира Темура, был правителем Хорасана (с 1397 г.) и империи Темуридов (с 1409 г.).

¹³ Мирзо Улугбек – Мухаммед Тарагай ибн Шахрух ибн Темур Улугбек Гураган (22 марта 1394 – 27 октября 1449). Государственный деятель, выдающийся математик, астроном, просветитель своего времени.

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Известный китайский дипломат и путешественник Чэнь Чэн (陈城)¹⁴, побывавший в Самарканде и Герате несколько раз, отмечал в своем сочинении «Xiyu fanguozhi» («Описание Западных стран», 西域番国志), что в Герате (Halie, 哈烈) имелись горный хрусталь (shuijing, 水晶), алмазы (jingangzuan, 金刚钻) и рубины (lashi, 刺石), так называемый баллас (balasi, 巴拉斯) или корундовая руда (hongyu kuangshi, 红玉矿石) [1: 24-26].

Самарканд периода правления Амир Темура привлекал многочисленных гостей из разных стран. Из завоеванных городов в Самарканд отбирались и привозились лучшие, самые талантливые и изобретательные мастера, среди которых были ювелиры (zhubaoshang, 珠宝商), ткачи шелка (sizhijiang, 丝织匠), мастера по изготовлению луков и стрел (gongshijiang, 弓矢匠), колесничие (zhanche zhizaojia, 战车制造家), стекольщики (liuli, 琉璃) и гончары (taogong, 陶工) из Дамаска (Damashige, 大马士革), оружейники (zaoqiangjian, 造枪匠), резчики по металлу (loujingong, 镂金工) и архитекторы (jianzhushi, 建筑师) из Турции (Tuerqi, 土耳其). Все это заложило экономическую базу для развития различных видов искусства в Самарканде, включая резьбу по нефриту (yushi diaoke, 玉石雕刻), и он приобрел мировую известность и считался даже «более искусным, чем Герат (哈烈)» [6: 8602].

Что касается родины нефрита, это скорее всего, был Хотан (Hetian, 和田), с древности славившийся своими мастерами, занимавшихся работами по нефриту, и не имевших себе равных нигде в мире. История хотанского нефрита насчитывает несколько тысячелетий. Еще во времена первых китайских династий Шан (Shang, 商)¹⁵ и Западная Чжоу (Xi Zhou, 西周)¹⁶ уже были известны нефритовые изделия из Хотана. В Аньяне (Anyang, 安阳), провинции Хэнань (Henan, 河南), было обнаружено 755 кусочков нефрита периода Шан-Инь в гробнице Фухао (Fuhao mu, 妇好墓)¹⁷. После идентификации выяснилось, что большинство нефритовых материалов – это хотанский нефрит (Hetian yu, 和田玉). В «Mutianzi zhuan» (Повествовании о Сыне Неба Му, 穆天子传)¹⁸ есть много ценных записей о хотанском нефрите [10].

Торговля дикими животными. Еще одним товаром, который, наряду с лошадьми и нефритом, высоко ценился в Китае, были редкие птицы и дикие звери, такие как львы (shizi, 狮子), леопарды (bao, 豹), попугаи (yingwu, 鹦鹉) и т.д., а также шкуры этих

¹⁴ Известный китайский дипломат и путешественник Чэнь Чэн (陈城) несколько раз побывал в странах Центральной Азии и описал их в своих сочинениях, среди которых наиболее известные – «Xiyu xingchengji» (Записки о путешествии в Западные страны, 西域行程记) и «Xiyu fanguozhi» (Описание Западных стран, 西域藩国志). Подр. см.: [11: **115-142**].

¹⁵ Шан (Shang, 商) – старейшая китайская династия, существовавшая в XVII-XI вв. до н.э.

¹⁶ Западная Чжоу (Xi Zhou, 西周) – период, сменивший Шан и существовавший около 800 лет с 1045 по 770 гг. до н.э.

¹⁷ Фухао (Fuhao, 妇好) была супругой 23-го правителя династии Шан – Удина (Wudin, 武丁) и была доблестной женщиной-полководцем.

¹⁸ «Мутяньцзы чжуань» (Повествовании о Сыне Неба Му, 穆天子传) – древнейшее письменное сочинение о путешествии правителя Му на Запад в 989-988 гг. до н.э.

животных, львиные шкуры (shizipi, 獅子皮), леопардовые шкуры (jinqian baoqi, 金錢豹皮) и т.д.

Поскольку это были дикие животные для Китая, то на первых порах императоры Мин приветствовали такие дары и вознаграждали с избытком. Данные об этом содержатся во многих китайских письменных сочинениях. По сведениям «Правдивых записей [правления императоров] Мин» в 1413 г. «из Сиюй (西域)... Самарканда... и других мест совместно отправили посольства, в сопровождении (zhihui, 指揮) Байаэрсиньтая (白阿兒忻台) и других преподнесли западных лошадей (xima, 西馬), львов (shi, 獅), леопардов (bao, 豹) и другие товары...» [6: 1068]. В 1415 г. и 1417 г. из Самарканда привезли леопардов (wenbao, 文豹) [6: 1070].

После смерти императора Юнлэ, вплоть до конца правления императора Сюаньдэ (Xuande, 宣德)¹⁹ в 1437 г., китайский двор отошел от своей ранней экспансионистской политики. Экспансионизм критиковался за его дороговизну и безрезультатность. Были прекращены и такие обширные экспедиции, как морские миссии Чжэн Хэ (Zheng He, 鄭和).

Китайское правительство пыталось препятствовать контактам с иностранцами и уменьшить торговлю и «даннические отношения» с соседними и более отдаленными странами [9: 231]. Тем не менее, отношения между центрально-азиатскими правителями и династией Мин хоть и с перерывами, связанными с политической обстановкой на границах империи, не прекращались. На время правления минских императоров Чэнхуа (Chenghua, 成化)²⁰ и Хунчжи (Hongzhi, 弘治)²¹ приходится пик подношений диких животных китайскому двору. В 1445 г. «... из Самарканда и других мест правитель (王) Улугбек Гураган (Улубо Кулегань, 兀魯伯苦列幹) и другие ...поднесли лошадей (ma, 馬), верблюдов (tuo, 駝), леопардов (bao, 豹), нефрит (yushi, 玉石) и другие товары...» [6: 1075].

В 1478 г. «... Султан Ахмад (Suolutan Ahama, 鎖魯檀阿哈麻) и другие из земель Самарканда (撒馬兒罕)... отправили послов с данью (дарами) львами (shizi, 獅子)...» [6: 1079].

В 1479 г. «... самаркандский посланник Палюван (怕六灣) и другие ввезли львов (獅子). ...Султан Мухаммад (Suolutan Mahama, 速檀馬黑麻) отправил посла с данью с хищными животными (mengshou, 猛獸), это действительно заслуживает похвалы» [6: 1079]. В том же году «...правители Герат (Heilou, 黑婁), Ласы (刺思), Самарканда (撒馬兒罕), Бадань (把丹) и также Юйнусы-ван (羽奴思王) отправили посла с данью львами (獅子)...» [6: 1080].

В императорском запретном городе Гугун (Gugong,) был огромный парк, где содержали множество диких животных, в том числе, сотни львов, которых привозили посольства со всего мира. Все это вызывало протесты китайских чиновников, которые

¹⁹ Сюаньдэ (Xuan-de, 宣德 – девиз правления Чжу Чжэньцзи (Zhu Zhanji, 朱瞻基), пятого императора династии Мин. Храмовое имя Сюань-цзун (Xuan-zong, 宣宗). Годы правления – 1425-1435 гг.

²⁰ Чэнхуа (Chenghua, 成化 – девиз правления Чжу Цзяньшэня (Zhu Jianshen, 朱見深), правившего с 1447 по 1487 гг. Храмовое имя – Сянь-цзун (Xian-zong, 憲宗).

²¹ Хунчжи (Hongzhi, 弘治 – девиз правления Чжу Ютана (Zhu Youtang, 朱祐樞), правившего с 1470 по 1505 гг. Храмовое имя – Сяо-цзун (Xiao-zong, 孝宗).

сетовали на дороговизну содержания «бесполезных» с их точки зрения животных. Но дикие животные продолжали поступать из Центральной Азии. Как отмечают китайские источники за львами центрально-азиатские посольства отправлялись в Юго-Восточную Азию. В 1485 г. «... говорят, самаркандский посол возвратился [домой] через Гуандун, в дальнейшем направлялся в Малакку (Malajia-guo, 滿刺加國)²², желал купить львов (獅子) для подношения. Только лев является бесполезным диким животным ...» [6: 1081]. Еще одна запись в «Правдивых записях» об отправке послов через Малакку: в 1489 г. «... по старому порядку, самаркандцы, следуя через Ганьсу (甘肅) поднесли дань (дары). Действительно, правитель Ахмад-ван (Ahema-wang, 阿黑麻王) отправил посла через Малакку (Malajia-guo, 滿刺加國), по пути добыв львов (獅子), попугаев (yingwu, 鸚鵡) и другие товары, прибыл в Гуанчжоу (廣州) ...» [6: 1081].

Популярность редких и ценных львов в Китае была вызвана еще и распространением буддизма, по которому лев олицетворял силу и мудрость, но все же для династии Мин это был всего лишь вопрос «престижа» [8].

В 1490 г. «... иностранцы (huren, 胡人) из Сиюй (西域) ...некогда (уже) привозили львов (獅子) и других диких животных (shou, 獸) [представляют] для Китая опасность...» [6: 1082].

Заключение. После смерти Амира Темура отношения его потомков и династии Мин наладились и стали активно развиваться. Наряду с лошадьми, которые неизменно приветствовались китайскими императорами, появляются другие товары, как например, нефрит и дикие животные. Популярность изделий из нефрита во времена династии Тимуридов в первой половине XV в., особенно во время правления Шахруха, оказала непосредственное влияние на появление новых форм обработки нефрита и его распространение в XVI и XVII вв. в Западной и Южной Азии. Редкие птицы и животные также высоко ценились императорами Мин, но по прошествии времени, в китайских источниках появляются записи об их «бесполезности» и дороговизне содержания.

Тем не менее, поддержание официальных отношений с иноземными странами способствовало повышению международного престижа империи Мин, поэтому курс на «привлечение» Западных стран в Китай, отвечал как нуждам укрепления власти минского правительства, так и поднятию его авторитета на международной арене. Политика «привлечения иностранных посланников добрым отношением» должна была служить вполне определенным целям, поэтому, минский двор выступил инициатором установления и расширения посольских отношений с центральноазиатскими странами.

Литература:

1. Chen Cheng. Xiyu fanguozhi. (Чэнь Чэн. Описание государств Западного края. 陈城. 西域藩国志) // 明朝本 (Ming chaoben). 国立北平图书馆山本丛书 (Guoli Beiping tushuguan shanben congshu). – 北京 (Bqijing), 1936. – 页24-26.
2. Fairbank J.K. The Chinese World Order: Traditional China's Foreign Relations. – Cambridge, Mass.: Harvard University Press. 1953. – 198 p.

²² Manlajia-guo (滿刺加國) – Малакка во время династии Мин, также Maliujia (馬六甲).

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

3. He Yan. Mingdai Xiyu yu Zhongyuande tonggong hushi maoyi (和奄. 明代西域与中原的通贡互市贸易. Хэ Янь. О взаимной торговле Китая с Западными странами в эпоху Мин) // 新疆历史研究. – 乌鲁木齐, 1986. – №2. 42-50页. – С.42-43.
4. Lo Jungpang. Policy formulation and decision-making on issues respecting peace and war // Chinese government in Ming times: Seven studies (ed. Charles O. Hucker). – New York, 1969. – P.42-58.
5. Ming shi. (История [династии] Мин. 明史) // Ershi sishi (24 династийные истории. 二十四史). – 上海 (Шанхай), 1958. 三册 (Т.3). – 8602页.
6. «Ming shilu» leiJuan (明实录类纂 涉外史料卷. Материалы «Правдивых записей [династии] Мин» по разделам). – Wuhan: Wuhan chubanshe, 1991. – 1255 с.
7. Rossabi M. China among equals: The Middle Kingdom and its neighbours, 10-14 centuries. – Berkeley, 1983.
8. Temuer wangchao yu Mingchaode gongci maoyi yanjiu lunwen (帖木儿王朝与明朝的贡赐贸易研究论文, Исследование о даннической торговле между династиями Тимуридов и Мин) // <https://www.gwyoo.com/lunwen/maoyilunwen/gjmylwtg/200910/286736.html>
9. Xinjiang difang lishi ziliao xuanji (新疆地方历史资料选辑. Избранные материалы по историографии Синьцзяна). – 北京: 人民出版社, 1987. – 654 с.
10. Yushi zhilu (玉石之路, Нефритовая дорога) // <https://www.icangyu.com/index.php?m=content&c=mobile&a=show&catid=6&id=2598>
11. Каримова Н. Сведения китайских письменных источников по истории взаимоотношений государств Центральной Азии и минского Китая XIV-XVII вв. (2-е издание). – Ташкент: “Donishmand”, 2023.

**CITRUS LEMON L. DETERMINATION OF QUALITY AND QUANTITY
INDICATORS IN FRUITS**

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Annotation. This article lists lemon (Citrus lemon L.) determination of the quality and quantity indicators in the fruit set a goal for us to carry out the determination through experience.

Keywords. Citrus lemon L., extractive substances, state Pharmacopoeia, toxic element, pesticide, radionuclide.

Introduction. Citrus lemon L. the determination of the amount of extractive substances in the composition of the fruit was carried out based on the requirements of the state Pharmacopoeia (SP).

The appearance of the raw material mixture-depending on which organ the plant is, the Berry should have a dark or solid mass, the taste - sweet, pleasant fresh barra should have a fruity taste, the smell-according to the type of fruit, have a characteristic sharp and pleasant fresh aroma, the color-fruits should have a color corresponding to the component composition, the amount of toxic elements, pesticides and radionuclides citrus lemon L. must be (145) [145; 89-b].

Experience 1. Determination of humidity. Determination of the humidity indicator of medicinal plants XI was carried out on the basis of the requirements of SP. The experiment was repeated at least 5 times. To do this, it was pulled out of the product with a clearly pulled weight of 20 g and dried on the drying equipment Memmert GmbH+Co KG (made in Germany) until it came to a constant weight. Then the two Buks were put in equal amounts and heated until 100-150 oC reached a constant weight. Heated bulls are cooled in the exicator for 30 minutes before weighing, and the results obtained experimentally were determined by the formula presented on the basis of the requirements of GOST 22839-88:

$$x = \frac{(a - b) * 100}{a}$$

Where, x is the moisture % content; a is the pre – drying mass of the product; b is the post – drying mass of the product, g.

Experience 2. Determination of the amount of ash. The amount of ash in plant parts was determined according to XI SP. To do this, a product weighing 9 g, which is clearly weighed on the analytical scales Nabertherm GmbH Bahnhofstr. 20,28865 Lilienthal, in a mufel oven made in Gremania, is heated to a high temperature, placed in a porcelain cup and brought to a constant mass until it slowly burns over a fire. The resulting product is heated in a muffle oven at 600 0C until it comes to a constant mass.

$$X = \frac{m_1 \cdot 100}{m_2}$$

Here, M1 is the mass of the ash, g; m2 is the mass of the sample, g.

Experience 3. Determination of the amount of extract substances. When determining the amount of extractive substances in the composition of medicinal plants, it was met based on the requirements of SP.

To do this, 1 g of crushed (the diameter of the hole is sieved in a 1 mm sieve), which was clearly pulled out, the product was placed in a conical flask, poured 50 ml of water, then covered the flask with a probe and weighed at an accuracy of 0.0001 g on the scales. The mixture in the flask was put in a quiet place for an hour. The flask was then combined with a glass flute – air cooler in an upright position and slowly boiled for two hours. The flask was cooled and closed with its own probe, pulled again on the scales. When the weight was reduced from the amount previously weighed, the flask was put back into the solvent and delivered to the previous weight. Because, in this case, when the mixture boils, the solvent can partially evaporate and decrease. After the liquid in the flask was thoroughly mixed, the dry filter was filtered through paper into another clean flask. 25 ml of the filtered liquid is measured with a pipette, then, after drying and bringing to a constant weight, the porcelain is placed in a container (Cup) and evaporated in a water bath and dried for 3 hours at a temperature of 100-150 0C. Then the container was cooled in the Exciter for 30 minutes, weighed on the analytical scales. When the kosacha weight was removed from the total weight, it was determined that the extractive substances in the 25 ml filter were compliant with DF requirements (GOST 24027.0-80) using the downstream formula.

$$X = \frac{(a - b) * 200}{c}$$

Here, in % amounts of X - extract substances
dried kosacha mass with a-extract substances
b-Tube weight

c-the mass of the sample analyzed

The results obtained are presented and analyzed in Chapter II Table 2.1.

Results discussion. Citrus lemon L. for color, taste, moisture and ash content of the components and pH indicators were given through Table 1.

Table 1.

Citrus lemon L. quality and quantity indicators for

Indicators	Citrus limon L.		
Ingredients	Peel	Seed	Pulp
Color	light-yellow	yellow-brown	light-yellow
Sour	Taste	Sour	Sour
Humidity, %	7,6	5,8	8,7
Ash content, %	2.98	2,8	1,9
pH	4,5	5,5	3,5

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Conclusion. In the studies carried out by us, the amount of ash is the most abundant Citrus lemon L. it accounts for 2.98% in the peel and 2.8% in the seed and 1.9% in the pulp of MEA in small quantities. The fact that it contains a large amount of ash means that it contains a large amount of macro-and microelements. While humidity does not exceed 11% according to the requirements of GOST Citrus lemon L. dan indicates that long-term storage is possible if food is prepared without being added. the pH indicator is 4.5 on the peel, 5.5 on the seed and 3.5 on the fruit pulp. In this Citrus lemon L. showed that moisture and ash levels in the structure were SP compliant.

Literature used

1. Asqarov. I.R, "Tabobat qomusi" Toshkent "Mumtoz so'z" 2019 y, 3-12, 12-16, 562-573, 811-815-b.
2. Citrus limon (L.) Osbeck". World Flora Online. The World Flora Online Consortium. 2022. Retrieved July 23, 2022.45-56p.
3. Julia F. Morton (1987). "Lemon in Fruits of Warm Climates". Purdue University. pp. 160–168.
4. Genetic origin of cultivated citrus determined: Researchers find evidence of origins of orange, lime, lemon, grapefruit, other citrus species", Science Daily, January 26, 2011 (Retrieved February 10, 2017).45-89p.
5. Gulsen, O.; M. L. Roose (2001). "Lemons: Diversity and Relationships with Selected Citrus Genotypes as Measured with Nuclear Genome Markers". Journal of the American Society for Horticultural Science. 126 (3): 309–317. doi:10.21273/JASHS.126.3.309.
6. Morton, J. Lemon. Fruits of warm climates. (Julia F. Morton, Miami, FL.) @ Purdue University. 1987. p. 160—168.
7. Лимон (Ситрус лимон) / В. В. Воронцов // Большая российская энциклопедия [Электронный ресурс]. — 2016. 345-365-с.
8. Papp N., Bartha S., Boris G., Balogh L. Traditional uses of medicinal plants for respiratory diseases in Transylvania. Nat. Prod. Commun. 2011;6:1459–1460. doi: 10.1177/1934578X1100601012. [PubMed] [CrossRef] [Google Scholar].
9. Clement Y.N., Baksh-Comeau Y.S., Seaforth C.E. An ethnobotanical survey of medicinal plants in Trinidad. J. Ethnobiol. Ethnomed. 2015;11:1–28. doi: 10.1186/s13002-015-0052-0. [PMC free article] [PubMed] [CrossRef] [Google Scholar].

SPIRITUALITY IS A GUARANTEE OF INTERNATIONAL COOPERATION

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"For us, spirituality is mutual trust between people, respect and attention, building the future of the nation and the state together is a complex of noble aspirations and exemplary qualities".

Sh.Mirziyoyev

Annotation. In this article, harmonizing the interests of different nationalities and ensuring harmony among them is considered one of the decisive factors of development in our country. There is an opinion that great importance will be attached to the implementation of this idea in our country

Key words: spirituality, culture, enlightenment, society, social, human, spiritual value, tradition, tradition, idea, purpose. ethics, religion and education.

In today's world, there are many universal values that are equally important for all mankind and all nations. Spirituality has a special place among them.

Spirituality and enlightenment, education and upbringing are an integral part of human life, and the society, goodness, spiritual world, the meaning of life in general, developed by them cannot be imagined. Therefore, in the humanistic society, great attention has always been paid to spirituality and enlightenment, education and training.

According to experts, there are about three thousand nationalities on Earth, which unite 96% of humanity. The remaining 4 percent are ethnic groups and tribes. Of all the nations in the world, only about 200 have their own statehood. In such conditions, it is necessary to regularly study the interests, mentality, and aspirations of nations all over the world, and to always take this into account in political and social life.

This issue is also very important for our country. Representatives of many nationalities and peoples have lived together in the territory of Uzbekistan since ancient times. Today, representatives of more than 130 nationalities and peoples live in Uzbekistan. Every nation is a miracle of the Creator and has its own language, customs, values and traditions. Harmonizing the interests of different nationalities and ensuring harmony among them is one of the decisive factors of development in our country. Great importance is attached to the implementation of this idea in our country. As the first President of our country, I.A. Karimov, stated the unique policy of Uzbekistan in this regard, he noted: "The sacred duty of the Uzbek nation, which is the majority among the population of the republic, is not only to restore the mother tongue, its national culture and history, but also the fate of the few peoples who live together for, in order to preserve their unique cultural and spiritual characteristics, to be responsible for creating equal conditions and opportunities for them to mature and express their identity". This responsibility is the moral basis of mutual respect, friendship and solidarity between people of different nationalities and peoples living in the same society and working towards a common goal. The national idea, based on high

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

spiritual principles and a great sense of responsibility, creates conditions for the full realization of the talent and potential of the representative of each nation and mobilizes it towards noble goals such as the development of the Motherland, peace of the country, and the well-being of the people.

It is known that during the time of the former Union, the interests of the totalitarian regime were prioritized, and the person, his rights and interests, and his spiritual and spiritual life became secondary things. In particular, the concept of "Spirituality" lost its original meaning and significance and was condemned to oblivion. After all, spirituality is understood not as a phenomenon that makes a person - a person, a nation - a nation, defines their value and identity, and has been formed and developed as a whole system over the centuries, but some moral qualities, feelings and experiences specific to a person. Most social science majors were used to researching and promoting spirituality not as a separate and distinct phenomenon, but as simple moral concepts. However, it is a historical fact that with such a superficial approach, it is impossible to understand the phenomenon of spirituality, which has deep historical, theoretical and practical foundations, in its entire essence and scope, and to study it on a holistic and systematic basis.

After we gained independence, a person, his interests, rights and freedoms were declared as the highest value in our country. As much as the issue of building a new life and a new society has become an urgent and important task in Uzbekistan, it has become an urgent need to completely change the views on spirituality, to restore the age-old criteria demanded by the times, the original meaning and social significance of this unique phenomenon. Such wide-ranging issues were deeply substantiated theoretically and practically in the works of the first President of our country, Islam Karimov. Therefore, the years of independence were for us a period of spiritual renewal and growth, along with renewal and changes in all spheres of life.

^{book} "High spirituality is an insurmountable force" published in 2008 is of great importance in strengthening the scientific-theoretical foundations of our ideas and concepts about spirituality, updating views and conclusions in this regard, and raising it to a higher level. Because in this book, the phenomenon of spirituality is first of all deeply analyzed in connection with history and today, human, people, and nation categories, national and universal values, traditions, and social institutions, and its complete definition, system of concepts, and main principles were explained on a conceptual basis. Thanks to the deep opinions, methodological views, theoretical and practical conclusions in this work, we can see spirituality today as a unique phenomenon, unique to every nation in the world, which occupies an incomparable place in the life of mankind, opens up new opportunities depending on the requirements and criteria of the time, and becomes an insurmountable force. we imagine as a system. According to the definition given by our head of state, spirituality is an incomparable force that calls a person to spiritual purification, spiritual growth, strengthens the inner world of a person, strengthens his will, makes his faith whole, awakens his conscience, and is the criterion of all his views.

During the former union, the issue of spirituality was neglected. At that time, not being able to interpret it as a holistic phenomenon did not allow to form a general idea about it. After our independence, attention to it increased, restoration and preservation of our spiritual values became a priority. In this regard, extensive practical and theoretical work has been carried out. In our country, in the field of spirituality, a new system has been formed that is compatible with

¹ Karimov I. A. Let us have a free and prosperous country. 2nd floor. -T., Uzbekistan, 1996. -155 p.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

international standards, universal values and our national interests, instead of the highly ideological sciences of the former union.

In particular, the first leader of our independent country, Islam Karimov, in his work "High spirituality - indomitable power" ¹, the scientific and methodological foundations of the study of the phenomenon of spirituality are shown in detail, which is important in comprehensively solving the tasks in this regard. Thanks to this work, it became possible to deeply understand the true essence of spirituality, to study its specific features based on new conceptual approaches. As stated in this work, the concept of "spirituality" in our country fully embodies ideological, ideological, educational, cultural, religious and moral views in the life of society. Therefore, when thinking about this topic, all these views can be summarized and expressed through the concept of "Spirituality" in a broad sense.

Concepts of spirituality are directly related to education and upbringing. Education connects a person's life with science, education forms his conscience. Science gives satisfaction to man, and conscience is the jewel of his life. There is no humanity without it ¹. The main task of education is to teach humanity. The conclusion is that there is no education without education, no education without knowledge. Yes, the happiness and power of the nation depends on its enlightenment and freedom as well as its spirituality. The stronger the enlightenment, the greater the power, the higher the happiness. Because the humanitarian philosophy of education is necessary.

It is his spirituality that makes a man a man. Because thought and speech give birth to unlimited possibilities of using one's own experience.

It is known that the development of the society is connected with the economy, one without the other, they are two mutually inseparable spheres of life and development of the society. They do not negate each other, but strengthen each other, describe each other, develop and improve. "If economic growth and development are the body of society, then spirituality, enlightenment and maturity of political consciousness are its soul and soul" ².

It is known from history that in Western countries, including some countries that were formed in place of the former union, spirituality is not considered as a separate phenomenon. It is generally understood as a concept related to religion or morality. Sometimes these terms are equated with each other, and in some cases it is suggested that both of them can replace spirituality. In addition, there are also opinions that spirituality is a part of morality or religion, therefore, it can be understood as a set of characteristics that exist in these two values. Such approaches are one of the main reasons why spirituality has not become a separate science in these countries.

As stated in the work "High Spirituality - Invincible Power", "... while we are thinking about spirituality, we should analyze this issue thoroughly and deeply, not limiting ourselves only to its favorable and positive aspects, but also not to ignore such complex aspects." ¹. In this regard, it is necessary to pay special attention to the following aspects of spirituality:

- a set of requirements and rules that regulate social relations in society and interactions between people;
- system of spiritual values, customs and traditions, ideals, ideals and goals;

¹ Karimov I. A. Let us have a free and prosperous country. 2nd floor. -T., Uzbekistan, 1996. -155 p.

¹ Ganieva Gulirukhsora Islamovna. Education and training is a spiritual need, a social need. - Tashkent: Science and Technology Publishing House, 2010. - Page 16.

² Karimov I. A. Let us have a free and prosperous country. 2nd floor. -T., Uzbekistan, 1996. -266 p.

¹ Karimov I. A. High spirituality - Invincible power. -Tashkent: Spirituality, 2008. -140 p.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

- a whole set of spiritual phenomena consisting of ethics, culture, enlightenment, religion and education system;
- spiritual processes, creative activity of a person improving himself and the world in which he lives and its results;
- human perfection, level of improvement of his spiritual image, set of personal - moral characteristics and educational qualities;
- moral requirements and principles interconnected with all spheres of society, as well as a system of criteria defining human life and activity.

Spirituality is based on the interaction of the following main aspects in the form of a set of human characteristics and qualities. First of all, it is not a gift of fate, it has matured as a result of continuous development over the centuries, and was formed in the consciousness of our people based on noble concepts such as freedom, independence, Motherland, kindness, and honor. Spirituality is absorbed into a person along with mother's milk, father's example, ancestors' fertilizer. Proximity to nature, enjoying the unspoiled beauty of the beloved country nourishes and strengthens spirituality. At the same time, it acts as a set of social qualities of a person, which do not pass from parents in a natural way, completely and directly, but arise in the process of his formation as a mature person and education. These qualities are manifested in the material and spiritual activities of a person, in his communication with others, and in his attitude towards society and others. Another aspect is that spirituality acts as a unique social phenomenon that covers the entire diversity of a person's way of life and activity, material and cultural needs, his thinking, worldview, moral image, creativity.

Thousands of years of our history testify that nobility and humanity, striving for interethnic harmony are among the highest qualities of our people. Traditions in this regard are passed down from generation to generation. Article 8 of the Constitution of the Republic of Uzbekistan clearly states that "the people of Uzbekistan are made up of citizens, regardless of their nationality"¹. The concept of "People of Uzbekistan" serves as a moral basis for mutual respect, friendship and solidarity between people of different nationalities and ethnic groups living in our country and working towards a common goal. Such an environment does not allow the emergence of various problems in inter-ethnic relations and is of great importance in the implementation of national ideas such as the development of the Motherland, the peace of the country, and the well-being of the people.

References:

1. Sh.M. Mirziyoyev. We will resolutely continue our path of national development and raise it to a new level. -Tashkent: "Uzbekistan", 2018.
2. I.A. Karimov. "Religion never leads people to the wrong path." T- I from the book "Uzbekistan: National Independence, Economy, Politics, Ideology" . - T.: "Uzbekistan". 1996, p. 21.
3. Islamic intellectuals in the form of Uzbeks. -Tashkent: Islamic University Publishing House. 2005.

¹ Constitution of the Republic of Uzbekistan. - Tashkent: Adolat, 2023. - p. 7.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

4. Karimov I. A. High spirituality - Invincible power. -Tashkent: Spirituality, 2008. - page 140 .
5. Constitution of the Republic of Uzbekistan. - Tashkent: Adolat, 2023. - p. 7.
6. Ganieva Gulirukhsora Islamovna. Education and training is a spiritual need, a social need. - Tashkent: Science and Technology Publishing House, 2010. - Page 16
7. Abduganiyev OT DEVELOPMENT OF SOCIALLY ACTIVE CITIZENSHIP COMPETENCES IN STUDENTS–AS A SOCIAL PEDAGOGICAL NEED //PROSPECTS OF DEVELOPMENT OF SCIENCE AND EDUCATION. – 2022. – T. 1. – No. 5. – S. 78-83.
8. Tursunboyevich AO Development of socially active citizenship competence in students and youth in continuous education. - 2022.
9. Tursunboyevich OA Pedagogical and psychological opportunities for the development of socially active civic competences in students //ACADEMICIA: An International Multidisciplinary Research Journal. – 2021. – T. 11. – No. 3. - S. 1888-1897.
10. Abduganiyev O. Formation of legal training aimed at competitiveness in pupils of secondary schools //European Journal of Research and Reflection in Educational Sciences. – 2019. – T. 9. – No. 7.
11. Tursunboyevich OA Pedagogical and psychological opportunities for the development of socially active civic competences in students //ACADEMICIA: An International Multidisciplinary Research Journal. – 2021. – T. 11. – No. 3. - S. 1888-1897.
12. Abduganiyev OT FACTORS AFFECTING THE DEVELOPMENT OF SOCIALLY ACTIVE CITIZENSHIP COMPETENCE IN STUDENTS //E Conference Zone. - 2022. - S. 10-13.
13. Abdug' Aniyev O. DEVELOPMENT OF COMPETENCE OF GENERAL HUMAN VALUES IN STUDENTS ON THE BASIS OF A CULTURAL STUDY APPROACH //Science and innovation. – 2023. – T. 2. – No. Special Issue 9. – S. 316-319.
14. Abdug'aniev, Azod. "DEVELOPMENT OF SOCIALLY ACTIVE CITIZEN COMPETENCE IN STUDENTS THROUGH MODELING IN THE EDUCATIONAL PROCESS." *Innovations in Technology and Science Education* 1.5 (2022): 161-168.
15. O'G , Abdug'Aniev Azod Tursunboy. "PEDAGOGICAL-PSYCHOLOGICAL POSSIBILITIES OF DEVELOPING SOCIALLY ACTIVE CITIZENSHIP COMPETENCES IN STUDENTS." *Science and innovation* 2. Special Issue 5 (2023): 708-713.
16. Tursunboyevich, Abduganiyev Azod. "Development of socially active citizenship competence in students and youth in continuous education." (2022).
17. O'G , Abdug'Aniyev Azod Tursunboy. "PEDAGOGICAL-PSYCHOLOGICAL DEVELOPMENT OF SOCIO-CULTURAL ENVIRONMENT OF EDUCATIONAL INSTITUTION IN DEVELOPMENT OF STUDENTS' SOCIAL ENTREPRENEURSHIP." *Science and innovation* 2. Special Issue 4 (2023): 150-154.
18. Jumaniozov, XS, Nigmanova, UB, Rasulova, AM, & Abdug'aniyev , OT (2022). The essence of the phenomena of extremism and terrorism in the context of globalization and its threat to the stability of the international community. *Ann. For. Res* , 65 (1), 9173-9179.

Проблемные аспекты самостоятельного обучения китайскому языку в высших учебных заведениях (на примере Турции)

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Аннотация. В последние годы интерес к китайскому языку значительно вырос среди студентов высших учебных заведений по всему миру, включая Турцию. Китайский язык становится востребованным навыком, открывающим профессиональные перспективы в международных отношениях, экономике и бизнесе. Однако изучение китайского языка самостоятельно, особенно на уровне вузовского образования, сопряжено с рядом уникальных проблем и трудностей. Эти проблемы затрагивают не только технические аспекты языка, такие как тональность и сложная иероглифическая письменность, но и культурные, социальные, а также методологические особенности. В данной статье рассматриваются ключевые аспекты, влияющие на самостоятельное обучение китайскому языку студентами в Турции, а также предлагаются возможные решения для преодоления этих препятствий.

Ключевые слова: самостоятельная учеба, сложности иероглифики, тональность, методологические особенности.

1. Лексические и грамматические сложности. Тональность и произношение. Одной из первых проблем, с которой сталкиваются студенты при изучении китайского языка, является тональность. Китайский язык использует четыре основных тона, которые определяют смысл слов и фраз. Например, слово "ма" может означать "мама" (妈), "конопля" (麻), "лошадь" (马) или "ругать" (骂) в зависимости от тона. Студенты, не имеющие возможности регулярно практиковать произношение с носителями языка, могут испытывать сложности с различением и правильным воспроизведением тонов. В Турции ограниченное количество преподавателей китайского языка, а также трудности в нахождении языковых партнёров среди носителей значительно осложняют этот процесс.

Одним из возможных решений может быть использование приложений для тренировки тонов, таких как HelloChinese или Pinyin Trainer. Эти приложения помогают отрабатывать правильное произношение тонов и дают обратную связь.

Лексические особенности и многозначность слов. Китайский язык богат омонимами, что добавляет сложности в понимание значений слов в контексте. Например, слово "银行" (yínháng) означает "банк", а "银行上班" (yínháng shàngbān) — "работать в банке". Понять точное значение таких слов без глубокого погружения в контекст становится сложно, что часто приводит к ошибкам.

Для студентов, изучающих китайский язык самостоятельно, полезно создавать тематические лексические карты, записывать различные значения слов и практиковать их

использование в контексте. Такие карты помогут визуализировать многозначные слова и лучше запоминать их.

Освоение иероглифической письменности и сложности с запоминанием иероглифов. Ограниченные ресурсы для практики письма. Иероглифы составляют основу китайского языка, и для их запоминания требуются регулярные практические занятия. Однако, в Турции учебные заведения часто не могут предоставить достаточное количество материалов для практики иероглифического письма, и студенты вынуждены прибегать к самостоятельному освоению иероглифов, что усложняет процесс запоминания.

Использование онлайн - платформ, таких как Skritter и ArchChinese, может стать альтернативным решением. Эти ресурсы помогают учить иероглифы, следуя правилу «часть за частью», что облегчает запоминание структуры иероглифов.

Сложность написания и запоминания редких иероглифов. На начальном уровне студенты осваивают базовые иероглифы, однако на продвинутом уровне они сталкиваются с редкими и сложными иероглифами, требующими глубокого понимания структуры и ассоциаций. Проблема усугубляется ограниченным доступом к высококачественным учебным материалам и недостатком времени на их усвоение.

Один из подходов для преодоления этой проблемы — использование метода мнемоники и изучение иероглифов с помощью визуальных ассоциаций. Например, можно ассоциировать каждый элемент иероглифа с каким-либо предметом, изображением или символом, что поможет лучше запомнить его.

Социокультурные и мотивационные проблемы. Отсутствие языковой среды. Одной из самых серьезных проблем для студентов, изучающих китайский язык в Турции, является отсутствие языковой среды. Без постоянного общения с носителями языка становится трудно развивать навыки разговорной речи и слушания. Кроме того, многие студенты, не имея возможности слышать китайскую речь в естественных условиях, сталкиваются с трудностями в восприятии китайского на слух.

Для создания языковой среды рекомендуется участие в онлайн-клубах китайского языка или организация языковых встреч в формате «языкового обмена» с носителями китайского языка, проживающими в Турции или за её пределами. Такие встречи позволяют улучшить навыки общения и восприятия речи.

Различия в культурных традициях и мировосприятии. Изучение языка тесно связано с пониманием культурных особенностей страны, однако значительные различия между культурой Турции и Китая иногда усложняют этот процесс. Например, китайские идиомы (成语 chéngyǔ), которые часто используются в повседневной речи, основаны на исторических событиях и легендах. Понять их значение, не зная культурного контекста, довольно сложно, что приводит к ошибкам в интерпретации.

Для лучшего понимания культурных различий рекомендуется уделять время изучению китайской культуры, литературы и истории. Книги о китайских традициях, фильмах и учебные материалы, посвященные межкультурным коммуникациям, помогут студентам адаптироваться к китайскому языку и культуре.

Методические и организационные проблемы. Недостаток качественных учебных материалов на китайском языке. В Турции учебные материалы для изучения китайского языка часто ограничены, и их перевод с китайского на турецкий язык может быть недостаточно точным. Также многие пособия разработаны для начального уровня и редко адаптированы для студентов, достигших продвинутого уровня, что замедляет прогресс.

Для того чтобы решить эту проблему, рекомендуется использовать материалы на английском языке, которые предоставляют более точные переводы и грамматические пояснения. Также полезно использовать китайские учебные ресурсы, такие как HSK Standard Course и Chinese Grammar Wiki, которые позволяют освоить сложные аспекты языка. Отсутствие системного подхода к обучению. Самостоятельное изучение требует высокой самоорганизации, однако для студентов в Турции, где китайский язык не является приоритетным направлением, часто не хватает структурированного плана. Студенты могут испытывать трудности с определением последовательности тем и постановкой учебных целей.

Создание учебного плана с учетом целей и уровня владения языком является важной частью самоорганизации. Планирование может включать ежедневные или еженедельные задачи, такие как изучение новых иероглифов, работа с текстами и просмотр китайских фильмов с субтитрами. Придерживаясь четкого плана, студенты могут поддерживать мотивацию и прогрессировать.

Изучение китайского языка в высших учебных заведениях Турции сопряжено с многочисленными трудностями, связанными с лексикой, грамматикой, иероглифической письменностью и отсутствием языковой среды. Тем не менее, благодаря развитию технологий и обширным онлайн - ресурсам, студенты могут преодолеть эти проблемы и достигнуть высокого уровня владения китайским языком.

ЛИТЕРАТУРЫ:

1. "Chinese Language Pedagogy: Theory and Practice" by Shouhui Zhao, Routledge, London, 2022;
2. "Exploring Language Learning Motivation: Case Study of Turkish Students Learning Chinese", Journal of Language and Education, London, 2020;
3. "Language Learning Motivations among Turkish Learners of Chinese as a Foreign Language: A Survey of Five Universities in Turkey", Behavioral Sciences, 2023.

**ТРЕБОВАНИЯ К БУРОВЫМ РАСТВОРАМ ПРИ ЗАКАНЧИВАНИИ
ГОРИЗОНТАЛЬНЫХ СКВАЖИН.**

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Аннотация. В статье рассматриваются требования к буровому раствору, его приготовлению, водопроницаемости, плотности, вязкости буровых растворов, статическим сдвиговым параметрам и добавляемым к ним смазочным материалам, а также определение параметров фильтрации.

Ключевые слова: горизонтальные скважины, буровой раствор, промывка скважин, седиментация, фильтрация, цементация, депрессия, тампонаж, аэрация, буферная жидкость, седиментация, освоение.

REQUIREMENTS TO DRILLING FLUIDS FOR COMPLETION OF HORIZONTAL WELLS.

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Annotation. The article discusses the requirements for drilling fluid, its preparation, water permeability, density, viscosity of drilling fluids, static shear parameters and lubricants added to them, as well as the determination of filtration parameters.

Keywords: horizontal wells, drilling mud, well flushing, sedimentation, filtration, cementation, depression, plugging, aeration, spacer fluid, sedimentation, mastering.

Особые требования предъявляются к растворам по бурению и тампонированию при заканчивании горизонтальных скважин. Большое внимание уделяется их приготовлению и химической обработке. Возникновение осложнений в сильно изогнутых или горизонтальных скважинах зависит от характера буровых смесей.

При реализации и завершении процесса спуска горизонтальных скважин используются сложные технологии. Качественная заканчивания горизонтальных скважин влияет на производительность технологического процесса. В такой новой технологии использование открытых, зацементированных, хвостовых, перфорированных трубчатых и фильтрующих конструкций при заканчивании горизонтального участка скважины основано на пластовых условиях. Если в процессе бурения используются буровые растворы низкого качества и поток отложений в стволе скважины недостаточно хорошо вымывается, это мешает установке компоновки низа скважины. Завершение коллекторных каналов продуктивного пласта в поврежденном состоянии отразится на показателе продуктивности. Поэтому к буровым растворам предъявляется ряд требований.

Em-Ay Drilling Fluidz LTD - одна из ведущих мировых компаний по производству и применению буровых растворов и материалов для любых геологических и физических условий.

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Интенсификация бурения горизонтальных скважин требует переработку буровых растворов при бурении скважин с большими отклонениями от вертикальных и горизонтальных скважин [2, 4, 6].

Сложности, возникающие при бурении сильно искривленных скважин, связаны с показателями качества буровых растворов. Плохая очистка ствола скважины, чрезмерный крутящий момент, движение бурильной колонны, осаждение отложений в стволе скважины, сжатие бурового инструмента, ухудшение прочности стенки скважины, потеря циркуляции, сужение ствола скважины, низкое качество цементирования, затруднение в каротажном стальном кабеле и других инструментах несовместимость состава буровых растворов.

Из опыта бурения горизонтальных скважин, а также в скважинах с быстро меняющимся направлением ствола и для решения основных проблем, которые возникают в любом типе скважин, необходимо проанализировать причины кривизны сильно искривленных скважин [2, 3, 5].

Использует буровые растворы на углеродной основе для качественной очистки сильно искривленных скважин большого диаметра [1, 2, 5].

При бурении скважин буровые растворы готовятся на основе дизельного топлива и минеральных масел, а водонефтяное соотношение составляет от 50/50 до 10/90. Во всех случаях было обнаружено, что эффективность очистки ствола скважины увеличилась. Уменьшение количества осложнений в результате очистки отложений и их осаждения в сосудах увеличило стоимость бурения скважин и продолжительность рабочего процесса. Выбор оптимальных решений для сильно искривленных скважин также выбран в качестве выбранных решений для бурения существующих скважин. Учитываются наличие зоны, осложненной глинистыми сланцами в пробуренном слое, затраты на бурение, требования к естественной сушке и температура на забое скважины. Кроме того, уделяется внимание высокой восприимчивости коллекторов, внешнему загрязнению, проблемам с питанием и так далее.

При бурении сильно искривленных скважин выбираются буровые растворы с сильными ингибирующими и смазывающими свойствами. Их использование всегда запрещено в ограниченных или экологически уязвимых регионах. Эффективность применения растворов на основе углерода относительно невысока, когда при определенных условиях используются растворы на водной основе с полимерными добавками.

Одним из основных параметров бурового раствора является его плотность. Основная функция поддержания плотности бурового раствора через короткие промежутки времени - обеспечение прочности стенки скважины. Поддержание плотности буровых растворов очень эффективно для поддержания пластового давления и прочности стенки скважины, а также в случаях, когда вероятность гидравлического разрыва горных пород очень мала.

Разница в плотности бурового раствора, используемого для увеличения угла наклона ствола скважины в близких условиях, будет небольшой. Из практики известно, что вероятность эрозии стенки скважины увеличивается с увеличением глубины бурения скважины и увеличения угла наклона, тогда как гидроразрыв пласта уменьшается с увеличением угла наклона скважины.

На качество очистки стенки скважин от отложений большое влияние оказывают вязкость смеси, прочность глины, режим промывки, движение жидкости в пространстве за трубой и ее плотность.

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Во всех типах скважин качество удаления отложений увеличивается по мере увеличения плотности и расхода бурового раствора в заднем пространстве трубы. Но в сильно изогнутых скважинах важны вязкость, прочность глины и режим промывки. Очистку скважин от отложений можно разделить на три группы в зависимости от угла наклона, которые отличаются друг от друга:

1) от 0° до 45° ; 2) от 45° до 55° каждый; 3) с 55° до 90° .

Другая причина заключается в том, что в сильно изогнутых скважинах существует ряд интервалов кривизны от горизонтального до вертикального, что затрудняет очистку отложений.

Проблемы между первым и третьим углами удара скважины носят серьезный характер. Накопление отложений в стволе скважины и кривизна от 45° до 55° смещается в условный диапазон, вызывая серьезные осложнения. В третьей группе ($50^{\circ} \div 90^{\circ}$) диапазоне (по горизонтали), когда вязкость раствора мала и имеет высокую скорость циркуляции, турбулентный режим потока обеспечивает оптимальную очистку.

В скважинах, где угол наклона вала и вала небольшой, когда видимость движения раствора в заднем пространстве трубы ламинарная, граничное напряжение сдвига изменяется для увеличения уровня зазора вала.

При бурении интервалов второй группы ($45^{\circ} \div 55^{\circ}$) измерения производятся с высокой точностью при малых значениях скорости вытеснения.

Данные показывают, что в замкнутой циркуляционной системе образование отложений на большом угловом склоне происходит легко и их трудно удалить.

По сравнению с практикой бурения скважин, относящихся ко второму интервалу (угол наклона от 40° до 55°), накопление отложений в скважине снижается при использовании армированных вязких и твердых глинистых растворов. Если в колодце нет осложнений, желательно снизить вязкость и увеличить расход раствора.

Создание механически действующего турбулентного режима - единственный способ преодолеть осложнения в накопленных наносах.

Определить оптимальные параметры режима промывки и свойства бурового раствора для скважин с быстрым изгибом и прямым участком на разных уклонах при укорачивании ствола при промывке очень сложно. Следовательно, необходимо будет найти некоторые усовершенствованные методы, учитывающие возможность возникновения вышеупомянутых осложнений.

Для контроля проницаемости необходимо определить проницаемость породы, величину перепада давления и минералогический состав пробуренной породы. Оптимальное управление подачей воды необходимо для предотвращения прихвата, обеспечения прочности стенки скважин и предотвращения тромба призабойной зоны скважин. Возникновение таких проблем очень опасно для сильно изогнутых скважин. В результате эффекта перепада давления гидродинамическое давление становится очень сложным, буровая труба входит в контакт с большой поверхностной фильтрационной коркой, и из-за образования толстой илистой корки гребень буровой трубы сужается.

При бурении вертикальных скважин смесь должна иметь более высокую водопроницаемость, давление и температуру, чем при бурении наклонных скважин, при этом динамическая проницаемость должна точно контролироваться, а смесь должна поддерживаться на низком уровне проницаемости.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Фильтрующая пленка должна быть тонкой, плотной и эластичной. Наличие качественной фильтрационной оболочки в стенке скважины увеличивает прочность градиента гидроразрыва пласта в проницаемых зонах. Целью бурения горизонтальных скважин является увеличение дебита нефти. Когда водопроницаемость регулируется при открытии низких коллекторских свойств, это приводит к меньшему загрязнению слоя, что приводит к меньшей степени ухудшения качества во время использования слоя. Ухудшение эксплуатационных качеств слоя происходит в результате химического и физического воздействия. Изгиб коллекторных каналов в таком слое снижает проницаемость продуктивного пласта. Коллекторы пласта отличаются друг от друга проницаемостью, после бурения проницаемости керна подбирается буровой раствор, не оказывающий негативного воздействия на пласт.

Необходимо усовершенствовать новые методы отделки горизонтальных скважин и разработать технологию предотвращения ухудшения качества эксплуатации пласта. При вскрытии продуктивного пласта в горизонтальной скважине используются перфорированные фильтры с трещинами по сравнению с обычными скважинами.

В таких условиях важно удалить илистые корки со стенок скважины и уменьшить фильтраты, которые попадают в слой частиц твердофазной композиции.

На участках с трещинами в коллекторах инфильтрация флюидов через ствол скважины также происходит при бурении горизонтальных скважин в депрессии.

В этом случае перед началом бурения следует принять меры по предотвращению возникновения больших объемов флюидов и извержений.

Обычно герметизирующие добавки, препятствующие абсорбции, добавляют в раствор для нанесения раствора при бурении горизонтальных скважин. В каждом конкретном случае в раствор добавляются специальные добавки для управления водопроницаемостью. Состав осадка в растворе сведен к минимуму. Плотность бурового раствора не должна превышать значения, необходимого для предотвращения образования нефти, газа, воды и извержений.

Следует принимать меры для предотвращения аэрации буровых растворов при приготовлении крупнозернистых солевых буровых растворов.

С точки зрения качественного заканчивания скважин нефтяная смесь является идеальным буровым раствором, который не приводит к ухудшению качества использования продуктивного пласта и поддерживает естественную проницаемость призабойной зоны скважины в пласте. Однако это решение приводит к загрязнению окружающей среды, опасности возникновения пожара, затруднению удаления высоковязких эмульсий из отложений и усложняет выполнение электрометрических измерений. Буровые растворы на углеродной основе более устойчивы к высоким температурам, чем растворы на водной основе.

Использованные литературы.

1. *Мирзаев Э.С., Самадов А.Х., Шоназаров Э.Б., Камолов Б.С., Солестойкие буровые растворы. Научный журнал-Международный академический вестник. г.Уфа. 2020. № 12 (44). с.100-102.*
2. *Самадов А.Х., Шоназаров Э.Б., Пардақұлов И.А., Шукуров А.Ш., Бурение и крепление скважин в солях // Школа Науки/Научный журнал. -Москва 2020. № 6 (31) 35-36 с.*
3. *Абдирахимов И.Э., Бурунов Ф.Э., Курбанов А.Т., Самадов А.Х., Технология переработки тяжелых нефтей и нефтяных*

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

остатков путем применения криолиза. Научно-практический электронный журнал. Томск, Россия декабр. 2019 г № 12 (39) 310-313 с.

4. Samadov A.X., Samadova M.X., Kasimova A.Q., "Justifying the Use of Lightening Drilling Mixtures Used in Drilling Low Pressure Formations" Eurasian Journal of Engineering and Technology www.geniusjournals.org Volume 10| September, 2022 ISSN: 2795-7640. page 125-127

5. Мурзаев Э.С., Самадов А.Х. "Обоснование применения облегченной буровой смеси, используемой при бурении пластов низкого давления" Электронное научно-практическое периодическое издание «Экономика и социум» <http://www.iupr.ru> стр 764-768.

6. Мурзаев Э.С., Самадов А.Х., Шоназаров Э.Б., Камолов Б.С., Солестойкие буровые растворы. Научный журнал-Международный академический вестник. г.Уфа. 2020. № 12 (44). с.100-102.

7. Rakhimov, G. B., & Sayfiyev, E. K. (2024). RESEARCH OF THE PROCESS OF PRODUCING ALCOHOLS BASED ON BY-PRODUCTS OBTAINED IN THE FISCHER-TROPSCH SYNTHESIS. *Sanoatda raqamli texnologiyalar*, 2(03).

8. Raximov, G. A. B. (2024). QOBIQ-QUVURLARDAN FOYDALANGAN HOLDA ISSIQLIK ALMASHINISH USKUNASINING SAMARADORLIGINI OSHIRISH UCHUN KONSTRUKSIYANI TAKOMILLASHTIRISH. *Sanoatda raqamli texnologiyalar*, 2(03).

9. Rakhimov, G. (2023). Qobiq quvurli issiqlik almashinish qurilmalaridagi issiqlik almashinish samaradorligini gidrodinamik parametrlariga ta'sirini o'rganish. *Innovatsion texnologiyalar*, 51(03), 77-86.

10. Raximov, G. (2023). Qobiq quvurli issiqlik almashinish qurilmasini konstrusiyasini o'zgartirish orqali issiqlik almashinish samaradorligini oshirish. *Sanoatda raqamli texnologiyalar/Цифровые технологии в промышленности*, 1(2), 172-179.

11. Rakhimov, G. B. (2023). INCREASING THE EFFICIENCY OF THE GAS REFINING PROCESS THROUGH THE RECOVERY OF ALKANOLAMINES. *Journal of Fundamental and Applied Research Vol*, 3(3), 20230018.

12. Murtazaev, F. I., & Raximov, G. B. (2023). Synthesis of sorbents used in the separation of halogens. *Sanoatda raqamli texnologiyalar*, 1(01).

13. Rakhimov, G. B. (2023). Improving the efficiency of heat exchange by optimizing the parameters of the hydrodynamic mode of shell-and-tube heat exchange. *Экономика и социум*, (12 (115)-1), 608-612.

14. Rakhimov, G. (2023). Qobiq quvurli issiqlik almashinish qurilmalaridagi issiqlik almashinish samaradorligini gidrodinamik parametrlariga ta'sirini o'rganish. *Innovatsion texnologiyalar*, 51(03), 77-86.

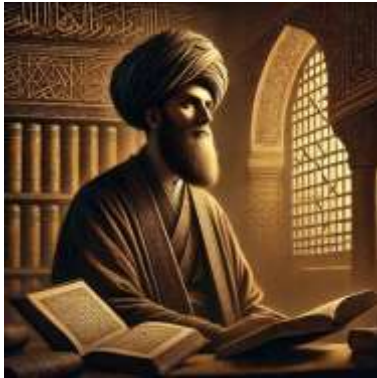
The Role of Imam Ghazali's Scientific Heritage in the Development of the Eastern Renaissance

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Abstract: This article analyzes the role and significance of Imam Ghazali's scientific heritage in the development of the Eastern Renaissance. Imam Ghazali made a great contribution to Islamic scientific thought and culture with his numerous works on philosophy, jurisprudence, mysticism and other disciplines. He is known in the Eastern world as a unique scientist who combined religious and scientific thought. This article analyzes how Imam Ghazali's works were studied during the Eastern Renaissance and how they are evaluated today.

Keywords: Imam Ghazali, scientific heritage, Eastern Renaissance, Islamic philosophy, mysticism

Introduction

Imam Abu Hamid al-Ghazali (1058–1111) left a great scientific legacy in the fields of Islamic philosophy and Sufism. He is mainly known for his jurisprudence, Sufism, philosophy and Islamic scientific research, introducing a new method and content to Islamic thought. His profound scientific views on philosophy, ethics and theology are widely spread in the Muslim world. Imam Ghazali's works made a great contribution to the development of scientific and cultural renaissance in the Muslim world.

Works:

Imam Ghazali created several famous works that are of great importance for Eastern and Islamic science. Some of them are listed below:

1. "Ihya Ulumuddin" ("Revival of Religious Sciences") – one of Imam Ghazali's most famous works, which contains profound thoughts on the system of religious sciences, moral issues and spiritual purification. This work served as a primary source for many scholars in Eastern madrasas.
2. "Tahafut al-Falasifa" ("The Problem of Philosophers") – This work was a heated debate with Western philosophy and served to form an independent position within Islamic philosophy. In it, Al-Ghazali criticizes some philosophical concepts and defends the foundations of Islamic philosophy.
3. "Al-Mustasfa min Ilm al-Usul" – One of the important works on jurisprudence and jurisprudence, which explains the foundations of the sciences of Sharia and legal norms.
4. "Kimiyyoyi Saodat" ("The Chemistry of Happiness") – This work extensively covers issues related to morality and Sufism, and discusses the importance of human spiritual education and moral

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

purification. In this book, Al-Ghazali explains how the human heart must develop in order to achieve happiness.

5. "Mishkat al-Anwar" ("The Source of Light") – In this book, Ghazali analyzes the deep philosophical issues of theology and Sufism and seeks to explain the divine nature of Light.

The role of the East Renaissance

During the Arama's Renaissance, the Imam rose to science, philosophy, and new level with his works. His philosophical views have led to the provision of scientific and scientific methodology in the Muslim world. In Tahafut al-Fazara, Ghazali critical approach Western philosophy and contributed greatly to strengthening Islamic philosophy. At the same time, through his works, such as "Ihyo Umumiddin", the principles of deep study of Islamic sciences and the principles of their implementation were put forward.

During the Soviet times, the works of Imam Gazzali did not teach the science of philosophy, but was not banned. However, after gaining independence, the row of the great Eastern thinkers is a wide, scientific approach to the Imam Gazzali, a wide range of opportunities.

The attitude toward philosophy and mysticism

Imam Ashzali expressed interest in many of his scientific fields in his time, who was serious about studying each of them separately. Initially, science entered the Word and created important works about this field. Some of them are:

1. "Al-Economy Elfin Belief" is a belief that has made a moderation.
2. "Icent ALOMN ALMILIL CALL" - Protection of the Wide Ogram from dry words.
3. "Akhatu Ahl as-Sunnah" is the Ahl al-Sunnah Belief.
4. "Fazauhul Botiniyya" - exposing mistakes of Botibition.
5. "Faycyalut shiling of the Badara of Filmsa shows a gap between Islam and atheism.

During this period, knowledge had stagnated in the Word, and the scholars did not think it would think newly. Imam Gazzalius managed to overcome this stability through his research using the sciences of the great scientists of the past. As a result, science has emerged in the field of the Word, and this approach has opened a wide road to thinking.

Later, in search of the truth, they also began to learn philosophy. Philosophers had declared the "truth with philosophy". Imam Gazzali examined these allegations and became deeper and became one of the most leading philosofas of his time. Nevertheless, he developed the activities of philosophers and philosophy:

1. "Maqatul Falosufa" - the goals of philosophers.
2. "Tahafutul Falosa" - the meaning of philosophers.
3. "Namratul Science Mat Login" - Logic norms.
4. "Al-Muhsids Minaz Zolal" - Savior of misleading.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

These works are in the works in the works of Imam Ghazali, divide the scientific activity of philosophers in various directions, contradict the Islamic teachings, and their sides. Divines the scius of philosophers in the following areas:

1. Expective disciplines - areas such as accounts, geometry, geography.
2. Logic logic and mental measurements There are other rules and mental measurements in this area, there is nothing in contradictory.
3. Natural Sciences - Medicine and other natural sciences.
4. Political sciences are seen as a legacy of prophets in the field of world affairs.
5. Moral Sciences - Sufis have said many wise words in this regard, and some of them correspond to the Islamic morality.
6. Theologium - The biggest mistakes of philosophers have emerged in this area and Imam Gazzali strongly criticized the views in this area.

Conclusion Imam is one of the great scholars who united religious and secular knowledge in the field of Eastern RenaSis, uniting religious thinking. His works have had a significant impact on the development of Eastern science. The Imam previously put the unity of scientific and religious knowledge, enriched Islamic thinking and culture. The works He created were recognized as a great scientific heritage in the Muslim world and is still maintaining its spiritual significance.

References

1. Al-Ghazali, Abu Hamid. (2011). Ihya ulumidDin. Tashkent: Islamic Scholars Society.
2. Asqarov, M. (2015). Imam Ghazali: Life and Work. Tashkent: Fan Publishing House.
3. Mullajonov, R. (2017). The Role of Islamic Scholars in the Eastern Renaissance and Its Development. Bukhara: Uzbekistan Islamic Civilization Center.
4. Mirsaidov, S. (2019). The Main Figures of Islamic Philosophy. Tashkent: Sharq Publishing House.
5. Moosa, E. (2005). Ghazali and the Poetics of Imagination. Chapel Hill: University of North Carolina Press.
6. Griffel, F. (2009). Al-Ghazali's Philosophical Theology. Oxford: Oxford University Press.
7. Nazarov, K. (2018). Sufism and scientific thought in Uzbekistan. Tashkent: Ma'naviyat Publishing House.
8. Alimov, I. (2021). The specific features of Islamic philosophy and jurisprudence. Tashkent: National Encyclopedia of Uzbekistan.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

MAKTAB BOLALARIDA INGLIZ TILIDA O'QISH KO'NIKMALARINI SHAKLLANTIRISH

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Annotatsiya: O'zbekistonda hozirda yangi ta'lim tizimi tashkil etilmoqda. Ta'lim paradigmasi o'zgarib bormoqda va yangi o'quv dasturlari joriy etilmoqda. O'zbekiston ta'lim tizimi oldida turgan eng dolzarb masalalardan biri hamisha chet tillarini o'qitishda qo'llaniladigan metodlarni rivojlantirish, takomillashtirish va optimallashtirish zarurati bo'lib kelgan va shunday bo'lib qoladi. A2 darajasidagi o'quvchilarda o'qish ko'nikmalarini rivojlantirish tadqiqotchilar va pedagog-amaliyotchilarning jumladan bizning ham diqqatimizni jalb qiladi. Chet tilini o'rganish davr talabiga aylandi.

Kalit so'zlar: A2 darajasidagi o'quvchilar, o'qish malakasi, rivojlantirish, lug'at, ingliz tilini o'qitish, topshiriqlar, o'yinlar.

FORMATION OF ENGLISH READING SKILLS IN SCHOOL CHILDREN

Abstract: A new education system is currently being established in Uzbekistan. The educational paradigm is changing and new curricular are being introduced. One of the most urgent issues facing the educational system of Uzbekistan has always been and remains the need to develop, improve and optimize the methods used in teaching foreign languages. The development of reading skills in A2 level students attracts the attention of researchers and pedagogues-practitioners, including ours. Learning a foreign language has become the demand of the times.

Key words: A2 level students, reading skills, development, vocabulary, teaching English, tasks, games.

ФОРМИРОВАНИЕ НАВЫКОВ ЧТЕНИЯ НА АНГЛИЙСКОМ ЯЗЫКЕ У ШКОЛЬНИКОВ

Аннотация: В настоящее время в Узбекистане создается новая система образования. Образовательная парадигма меняется, вводятся новые учебные программы. Одной из наиболее актуальных проблем, стоящих перед системой образования Узбекистана, всегда была и остается необходимость развития, совершенствования и оптимизации методов, используемых в обучении иностранным языкам. Развитие навыков чтения у студентов уровня A2 привлекает внимание исследователей и педагогов-практиков, в том числе и наших. Изучение иностранного языка стало требованием времени.

Ключевые слова: студенты уровня A2, навыки чтения, развитие, словарный запас, обучение английскому языку, задания, игры.

Kirish. Maktab yoshidagi bolalarda ingliz tilini o'qish qobiliyatini oshirish uchun qiziqarli va interfaol resurslardan foydalanish juda muhimdir. O'qish jarayonini osonlashtirish uchun rasmlı kitoblar, interfaol o'yinlar va video materiallardan foydalanish maqsadga muvofiq bo'ladi.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Munozaralar va ijodiy yozish mashqlari ham bolalarni o'qishga undashda samarali yo'l bo'ladi. O'qish va yozish bo'yicha izchil amaliyot ularning so'z boyligini kengaytirishga va tilni tushunishga sezilarli hissa qo'shadi. Ularning qiziqishini saqlab qolish uchun doimiy ravishda yangi va jozibali materiallarni joriy etish muhimdir. Ingliz tili global kommunikatsiya vositasi bo'lib, uning ahamiyati har bir maktabda e'tiborga olinishi kerak. Maktab bolalarida ingliz tilida o'qish ko'nikmalarini shakllantirish jarayoni esa o'ziga xos yondashuvlarni talab etadi [2.39].

Tahlil. Bir qator olimlar ingliz tilida o'qish ko'nikmasini oshirish ko'nikmasi haqida juda ko'plab ilmiy izlanishlar olib borishgan. O'qishning ba'zi qismlarida e'tibor bilan matn va matn qismlariga ustunlik beriladi yolg'iz shakllantirish yoki shakl va ma'no o'rtasidagi munosabat uchun xizmat qiladi. Shu bilan birga, ayniqsa o'quvchi qobiliyatlari aniq matn xususiyatlariga e'tibor qaratish bilan bog'liq bo'lishi mumkin [1.21]. O'qish ko'nikmalarini shakllantirish uchun muntazam amaliyot juda muhimdir. Har kuni ma'lum vaqtni o'qishga ajratish, bolalarning o'zlari yoqtirgan kitoblarni o'qishlariga imkon berish zarur. Bu ularning so'z boyligini oshiradi va o'qish qobiliyatlarini mustahkamlashga yordam beradi. Yaxshi o'quvchi bo'lish uchun o'quvchilar o'z o'qishlari uchun maqsad qo'yishlari kerak shuning uchun yaxshi o'quvchilarning o'qishdan maqsadi bor. Tushunishni yaxshilash strategiyalaridan biri bashorat qilishdir [3.710]. O'qish ko'nikmalari til o'rganishning asosiy komponentlaridan biri bo'lib, bolalarda mustaqil o'rganish va tanqidiy fikrlash qobiliyatlarini rivojlantirishga yordam beradi. O'qishdagi talaffuz va tovushlarni o'rgatish orqali o'qishni yaxshiroq tushunish imkonini berish. Rasm, video va qo'l bilan yozib chiqish kabi metodlar yordamida o'qish jarayonini qiziqarli qilish. Talabalarni matn mazmuni ustida o'ylashga, undagi asosiy g'oyalarni ajratib olishga o'rgatish. So'z boyligini oshirish: Lug'atni kengaytirish orqali o'qilgan matnni yaxshiroq tushunishga yordam berish. O'qilgan materiallarni takror o'qitish va ular bo'yicha qisqa savol-javoblar qilish. Interaktiv dasturlar va mobil ilovalardan foydalanish orqali o'qish jarayonini qiziqarli qilish. Ingliz tilidagi o'qilgan matnlardan kelib chiqib, grammatik tuzilishlar va yangi so'zlarni o'rganish. O'quvchilarni bir-birlari bilan muloqot qilish orqali o'qishni tushunish va matnni tahlil qilish ko'nikmalarini mustahkamlash. Sinov va testlar orqali o'quvchilarning o'qish ko'nikmalarini baholash va ularning rivojlanishini kuzatish. O'qilgan matn bo'yicha qisqa incho yoki xulosa yozish orqali o'qish ko'nikmasini yanada mustahkamlash. Bu yo'nalishdagi tadqiqotlar o'quvchilarning o'qish ko'nikmalarini qanday shakllantirish mumkinligini o'rganishga yordam beradi va o'qitish metodikasini yanada samarali qilishda muhim rol o'ynaydi.

Xulosa. Hozirgi jadallik bilan rivojlanib borayotgan davrda ingliz tilini o'rganish va o'rgatish davr talabi hisoblanadi. O'qish ko'nikmalarini rivojlantirish, har bir insonning shaxsiy va professional hayotida muhim rol o'ynaydi. Yuqoridagi strategiyalarni hayotingizga tatbiq etish orqali o'qish tajribangizni yanada boyitishingiz mumkin.

Adabiyotlar:

1. Ronald C. The English to speakers of other languages. 2021. 21p.
2. William G. T Reading in a Second Language Moving from Theory to Practice. 2020. 39p.
3. Hülya Küçükoğlu. Improving reading skills through effective reading strategies. 2012. 710p
4. Furkatov M.M. Methods of teaching foreign languages in a non-linguistic environment. Rostov-on-Don. 2021. 45p
5. www.pearsonlongman.com young learners. 17. <http://pandia.ru>

TERI QATLAMLARINING GISTOLOGIYASI VA ULARNING VAZIFALARI

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Annotatsiya: Ushbu maqolada terining gistologik tuzilishi, uning asosiy qavatlar (epidermis, derma va gipoderma) haqida ma'lumot beriladi. Har bir qavatda joylashgan hujayralar va bezlar hamda ularning vazifalari tavsiflanadi. Maqolada terining himoya vazifasi, regeneratsiya jarayonlari va turli klinik holatlarda uning ahamiyati muhokama qilinadi.

Kalit so'zlar: Epidermis, derma, gipoderma, keratinotsit, melanotsit, Merkel hujayrasi, Langergans hujayrasi, regeneratsiya, terining himoya vazifasi.

Аннотация: В данной статье рассматривается гистологическое строение кожи, включая её основные слои (эпидермис, дерма и гиподерма). Описаны клетки и железы, находящиеся в каждом слое, и их функции. В статье обсуждается защитная роль кожи, процессы регенерации и её значение в различных клинических условиях.

Ключевые слова: Эпидермис, дерма, гиподерма, кератиноциты, меланоциты, клетки Меркеля, клетки Лангерганса, регенерация, защитная функция кожи.

Abstract: This article explores the histological structure of the skin, including its main layers (epidermis, dermis, and hypodermis). It describes the cells and glands located in each layer and their functions. The article discusses the protective role of the skin, regeneration processes, and its importance in various clinical contexts.

Keywords: Epidermis, dermis, hypodermis, keratinocytes, melanocytes, Merkel cells, Langerhans cells, regeneration, protective function of the skin.

Material va metodlar: Tadqiqotda teri tuzilishiga oid ilmiy adabiyotlar va laboratoriya tekshiruvlar asosida topilgan ma'lumotlar tahlil qilindi. Terining har bir qavatidagi hujayralar tuzilishi mikroskopiya va maxsus bo'yash metodlari orqali o'rganildi. Mikroskopiya usulida teri qavatlarining gistologik namunalari ishlab chiqildi va ularning funksional ahamiyati aniqlandi.

Natija: Teri inson tanasini tashqi tomondan o'rab turadigan himoya qiluvchi qatlam hisoblanib u tana massasining 6% ni gipoderma (teri osti yog' qavati) bilan qo'shib hisoblaganda esa 16% ni tashkil qiladi. U eng yirik organ hisoblanib terining umumiy sathi 1,5-2m²ni tashkil etadi. Teri tananing turli yuzalarida turlicha qalinlikda bo'ladi, masalan: terining eng yupqa sohasi qovoqlar ustini qoplab tursa eng qalini esa tovonda bo'ladi. Terimiz 0,5mm dan 5mm gacha qalinlikda bo'ladi. Terimizning rangi millatimiz, irqimiz kelib chiqishimizga ko'ra farq qilishi barchamizga ma'lum albatta, bu tanamizdagi melanin pigmentining joylashishiga va miqdoriga bog'liq shuningdek inson yashayotgan iqlimning qanday ekanligi ham teri rangiga ta'sir qiladi. Terimiz organizmimizni tashqi muhit bilan uzviy ravishda boglab turadi hamda to'qimalarimizni tashqi muhitning fizik va ximik omillari tasiridan saqlaydi, teri o'zidan turli xil mikroblar, zaharli va zararli moddalarni o'tkazmasligi bilan juda muhim sanaladi. Shuni ham takidlab o'tish kerakki terimizning epidermis qismi issiqlikni yomon o'tkazgani sabab terimiz qurib qolmaydi. Teridagi melanin pigmenti hisobiga esa quyosh nurlarining salbiy ta'siri kamayadi.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Epidermis qavati bir nechta hujayralardan iborat bo'lib ular: - Keratinotsit hujayralari, - Melanotsit hujayralari, - Merkel hujayralari, -Langergans hujayralari (Lengergans hujayralarini oshqozon osti bezidagi Langergans orolchasi bilan adashtirmaslik ahamiyatli).

Keratinotsitlar- ular terining asosiy hujayralari bo'lib, epidermisning qariyb 90% ini tashkil qiladi. Bu hujayralar terining tashqi qavatida joylashib himoya funksiyasini bajaradi. Bu hujayralar keratin ishlab chiqaradi, bu terining suv o'tkazmas hamda mustahkam bo'lishiga yordam beradi. Mazkur hujayralar terini to'g'ridan to'g'ri tushadigan quyosh nurlaridan hamda mikroblardan himoya qiladi va tez-tez yangilanib turadi.

Melanotsitlar – melanin sintez qiladigan hujayralar hisoblanadi. Ular nerv to'qimasidan takomillashadi. Ularning sitoplazmasida tonofibrillalar bo'lmaydi ammo ko'p ribosoma va melanosomalar tutadi.

Merkel hujayralari - terining juda ham sezgir sohalarida (barmoqlar, burunning uchki qismi va h.k larda) ko'p uchraydi. Merkel hujayralarining asosida afferent nerv oxirlari tugaydi. Merkel hujayralari, afferent nerv tolalari epidermisdan taktil sezgilarni qabul qiladi. Shuningdek mazkur hujayralar epidermis hujayralarining regeneratsiyasida, qon tomirlarning tonusini va o'tkazuvchanligi boshqarishda ham ishtirok etadi.

Langergans hujayralari - suyak ko'migida kelib chiqqan o'simtali hujayralar hisoblanadi. Ushbu hujayralar sitoplazmasida argentofil donachalari (Birbek donachalari) mavjud. Bu donachalar tarkibida langerin moddasi bor, u viruslarni bog'lash va ularni degradatsiyaga uchrashini ta'minlash vazifasini bajaradi. Langergans hujayralari o'siqchalari yordamida bir nechta keratinotsitlarni o'rab turadi va epidermal proliferativ birikmalar (EPB) ni hosil qiladi. EPB lab butun epidermis qalinligida yotadigan vertikal ustunlar shaklida bo'ladi. Bu hujayralar epidermisdan derma qavatiga va mahalliy limfa tugunlariga ko'chib, antigenlar haqidagi ma'lumotni u erdagi limfotsitlariga olib boradilar va shuning asosida immun jarayonlar shakllanadi.

Epidermis – terining eng yuqori qavati bo'lib, uning asosiy vazifasi tashqi omillarga nisbatan mexanik va biologik himoya qilishdir. Epidermisning tarkibidagi keratinotsitlar keratin ishlab chiqaradi, bu esa terining suv o'tkazmasligini ta'minlaydi va mikroorganizmlarning kirishini oldini oladi. Keratinotsitlar tez yangilanadigan hujayralar bo'lib, ularning yangilanishi 19-20 kunlik siklda kechadi. Shuningdek, melanotsitlar melanin pigmentini ishlab chiqaradi, bu esa terini ultrabinafsha nurlanishning salbiy ta'siridan himoyalaydi. Epidermisdagi Langergans hujayralari esa immunitetga javob beruvchi antigenlarni tanib, ularni limfa tizimiga yetkazadi, shu orqali organizmni patogen mikroorganizmlardan himoya qilishda muhim rol o'ynaydi.

Derma – terining markaziy qavati bo'lib, u asosan ikki bo'limdan iborat: so'rg'ichsimon va to'rsimon qavatlar. So'rg'ichsimon qavat terining individual shakllarini hosil qiladi va uning tarkibidagi qon tomirlari epidermis hujayralarini oziqlantiradi. Bu qavatda kollagen, elastin va retikular tolalar mavjud bo'lib, ular terining chidamliligini ta'minlaydi. To'rsimon qavatda asosan fibroblastlar mavjud bo'lib, ular dermani yangilashda, to'qima mustahkamligini saqlashda muhim ahamiyatga ega. Bu qavatda shuningdek makrofaglar, limfotsitlar va qon tomirlari joylashgan bo'lib, ular infeksiyalarga qarshi kurashishda qatnashadi. Derma qavatidagi nerv uchlari terining sezgirlik xususiyatlarini ta'minlaydi, bu esa organizmning tashqi muhitga tezkor javob qaytarishini ta'minlaydi.

Gipoderma – terining eng quyi qavati bo'lib, u terini suyak va mushak tuzilmalari bilan bog'laydi hamda uning harakatlanuvchanligini ta'minlaydi. Gipodermada yog' hujayralari (adipotsitlar) joylashgan bo'lib, ular energiya zaxirasi sifatida xizmat qiladi. Yog' hujayralari shuningdek organizmni isitishda hamda tashqi zarbalardan himoyalashda ishtirok etadi. Gipodermada qon

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

tomirlari, nerv tolalari va asab uchlari (misol uchun, Pachini tanachalari) mavjud bo'lib, ular mexanik ta'sirlarga javob beradi.

Bazal qavat - bu qavatda melanin pigmentini ishlab chiqaruvchi melanositlar joylashgan bo'lib, ularning vazifasi terining rangini belgilash va quyosh nurlaridan himoya qilish. Donador qavat - bu qavat hujayralari 2-3 qavat bir-biriga zich joylashgan duksimon hujayralarda tashkil topgan. Bu hujayralarda keratin, filaggrin, involyukrin va keratolinin kabi oqsillar sintezlanadi. Tikansimon qavat - tikanaksimon qavat hujayralarida juda ko'p sitoplazmatik o'simtalar mavjud bo'lib, ushbu o'simtalar orqali hujayralar bir-biri bilan desmosomalar hosil qilib bog'lanadi. Bu qavat bazal qavat hujayralari ustida joylashgan 5-10 qavat hujayralardan iborat bo'ladi. Tikansimon qavatning bazal qavatga yaqin joylashgan qismida mitoz yo'li orqali bo'linayotgan hujayralarni uchratishimiz mumkin. Shunga ko'ra bu ikki qavat epidermisning o'suvchi ya'ni malpigi qavatini tashkil qiladi. Malpigi qavati hisobiga esa epidermisning 19-20 kun oralig'ida almashinib turishi fiziologik regeneratsiyas kuzatiladi. Yaltiroq qavat - yassi shakldagi keratinotsitlardan tashkil topgan bu qavat terining ayrim sohalari (kaft tovon) da yaxshi ko'rinadi. Bu hujayralarda yadro va organellalari to'liq parchalangan bo'ladi. Shuningdek keratogialin donachalari o'zaro qo'shib, kuchli nur sindirish xususiyatiga ega eleidin moddasiga aylanadi. Va bu hujayralar chegarasi aniq bilinmasligiga va bu qavat preparatda rangsiz yaltiroq tasma hoida ko'rinishiga olib keladi. Muguz qavat - epidermisning tashqi muhit bilan bevosita aloqada bo'lgan eng yuza qavati muguz qavat hisoblanadi. Bu qavat yadrosiz, bir necha o'n qavat muguz tangachalardan tashkil topgan. Shuningdek bu tangachalar muguz moddasi yani keratin va havo pufakchalari tutadi. Keratin oltingugurtga boy hisoblanib, kislot va ishqorlar ta'siriga chidamli oqsil moddasidir. Muguz tangachalari bir-biriga zich va mahkam birikib turadi. Terining ustki sathidagina muguz tangachalar fiziologik tarzda ko'chib tushib turadi va terining tushib turuvchi qavatini hosil qiladi. Muguz tangachalarining tushib ketishi jarayonida keratinosomalarining o'rni kattadir. Muguz qavatning qalinligi terining turli xil sohalarda turlicha bo'lib: kaft hamda tovon bu qavat nisbatan qalinroq bo'lsa, tananing yon sathida, ayniqsa qovoqlarda anchagina yupqa bo'ladi.

Derma qavati asl teri qavati bo'lib u so'rg'ichsimon va to'rsimon qavatlariga ajratilib o'rganiladi.

So'rg'ichsimon qavat siyrak tolali shakllanmagan biriktirovchi to'qimadan iborat bo'lib bevosita epidermisning tagida joylashgan bo'ladi. Bu qavat biriktiruvchi to'qimasi epidermisga botib kirishidan so'rg'ichlar hosil bo'lganligi tufayli epidermis qalib bo'lgan sohalarda (kaft va tovon) so'rg'ichlar yaxshi rivojlangan bo'lsa, epidermis yupqa bo'lgan sohalarda so'rg'ichlar ancha kalta bo'ladi. Yuzda so'rg'ichlar sust rivojlangan bo'lib, yosh ulg'ayishi bilan ular yo'q bo'lib ketishi ham mumkin. So'rg'ichli qavatning to'qimasida kollagen, elastik va retikulin tolalar bilan birga fibroblast, makrofag, melanofo, plazmatik va semiz hujayralar ham mavjud. Terining bu qavati barmoqlar terisi sathida har bir shaxsga xos bo'lgan individual ko'rinishlarni belgilab beradi. Terining bu ko'rinishi har bir odamda o'ziga xos bo'lganligi uchun sud tibbiyotida va kriminalistika amaliyotlarda barmoq izlariga qarab shaxsni aniqlashda - daktiloskopiya keng qo'llanadi.

To'rsimon qavat - zich tolali shakllanmagan biriktiruvchi to'qimadan iborat bo'lib, elastik tolalar va dag'al kollagen tolalari tutamlaridan tashkil topgan. Mazkur qavatda hujayra elementlaridan asosan fibroblastlar mavjud bo'lib, qon tomirlari sohalarda makrofaglar limfotsitlar va leykotsitlar joylashadi. Bu qavatda soch ildizlari, yog' bezlari bo'lsa, teri osti yog' qavati bilan chegaradosh qismida ter bezlari joylashgan. Terining to'rsimon qavati juda pishiq bo'lgani uchun ham hayvonlar terisidan turli xil anjomlar yoki kiyim-kechaklar ishlanadi.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Gipoderma -teri osti yog' qavati bo'lib u dermaning ostida joylashgan. Teri osti kletchatkalari ayniqsa qorin sohasida kuchli taraqqiy etgan bo'lib, ushbu qavat yog' deposi hisoblanadi, shuningdek teri haroratini bir xil saqlashda, teriga bo'ladigan mexanik ta'sirlarni yumshatishda muhim rol o'ynaydi. Bu Yog' hujayralari to'plamlari orasida qon tomirlari, nerv tolalari va kapsulali nerv oxirlari (Vater-Pachini va Ruffini tanachalari, Krauze kolbalari) ham uchraydi.

Terining xosilalariga: sochlar, tuklar, tirnoqlar, sut bezlari, yog' bezlari hamda ter bezlari kiradi.

Ter bezlari – 1 sm² terida 200 tagacha ter bezlari bo'lib ular embrion taraqqiyotining 8- oyida epidermisdan hosil bo'ladi va chaqaloq tug'ilganidan keyin yani post embrional davrda o'z faoliyatini boshlaydi. Ter bezlari qo'ltiq osti, kaft, peshona sohalarida nisbatan ko'proq bo'ladi. Tez bezlari ajratadigan sekret o'tkir hidi bilan boshqa bezlar ajratadigan sekretdan farq qiladi. Ter bezlarining ahamiyati shundaki: ular ko'p miqdorda ter chiqarib, tana haroratini qisman boshqaradi, organizmdan azotli hosilalar va ishqorli metall tuzlari, asosan: natriy xloridni chiqaradi.

Yog' bezlari - tananing kaft hamda tovon sohasidan tashqari barcha qismida mavjud bo'lib ular sutkasiga 20 g ga yaqin sekret ishlab chiqaradi. Bu sekret tarkibining 60% ini neytral yog'lat tashkil qilsa 40% ini skvalen, mumsimon efir kabilar tashkil etadi. Yog' bezlari soch ildizi bilan bog'langan bo'lib, soch voronkasiga ochiladi. Har bir soch ildiziga 1,2 yog' bezi to'g'ri keladi. Yog' bezlarining kattaligi turlicha bo'lib, yuzda (lunj, burun sohasida) ular yirik bo'ladi. Shuningdek bu bezlar terining yuqori qatlamida dermaning so'rg'ichsimon va to'rsimon qavatlari chegarasida joylashgan bo'ladi.

Terida reginiratsiya jarayoni juda yaxshi kechadi, Epidermis malpigi qavati hisobiga tiklanadi. Epidermis bilan derma ham shikastlanganda jarohat o'rni biriktiruvchi to'qima tolalarini va asosiy moddalarni xosil qiluvchi hujayralar: limfotsit, monotsit hamda fibroblastlardan iborat yosh biriktiruvchi to'qima yani granulyasion to'qima bilan yopiladi. Va epidermisning o'suvchi qavati xosil qilayotgan xujayralar germaning yosh biriktiruvchi xujayralari ustiga siljib jarohat ustini qoplaydi. Keyin epiteliy va dermaning tarkibiy qismi differensiallashib jarohat o'rni oldingi ko'rinishga qaytadi.

- Yangi tug'ilgan chaqaloqlarning terisi katta odamlarnikiga qaraganda 2,3 marta yupqaroq bo'ladi.

- 2-4 yoshda ter ajralishi uchun zarur bo'lgan ter bezlari, vegetativ nerv tizimi va termoregulyasiya markazlari o'rtasida mutanosiblik paydo bo'la boshlaydi.

- Inson terisining yuza qismida 100 tipga mansub 1000 ga yaqin bakteriya turi yashashi aniqlangan.

Tadqiqot natijalariga ko'ra, har bir qavatdagi hujayralar va tuzilmalar murakkab o'zaro aloqada bo'lib, terining tashqi omillarga chidamliligini, immun javobini va regeneratsiya qobiliyatini ta'minlaydi. Terining har bir qavati o'z vazifalarini samarali bajarishi uchun ixtisoslashgan hujayralar o'rtasidagi hamkorlik juda muhimdir.

Muhokama: Natijalar shuni ko'rsatadiki, teri himoya, immun va termoregulyatsiya vazifalarini bir vaqtning o'zida bajaradigan murakkab organdir. Epidermisning keratin ishlab chiqaruvchi hujayralari terining tashqi omillarga nisbatan chidamliligini oshiradi. Shundan kelib chiqib, terining har bir qavati turli tashqi va ichki ta'sirlarga nisbatan turli darajada reaksiya ko'rsatadi. Mazkur tadqiqotlar natijalari klinik amaliyotda, jumladan, kosmetologiya va dermatologiya sohalarida qo'llanilishi mumkin.

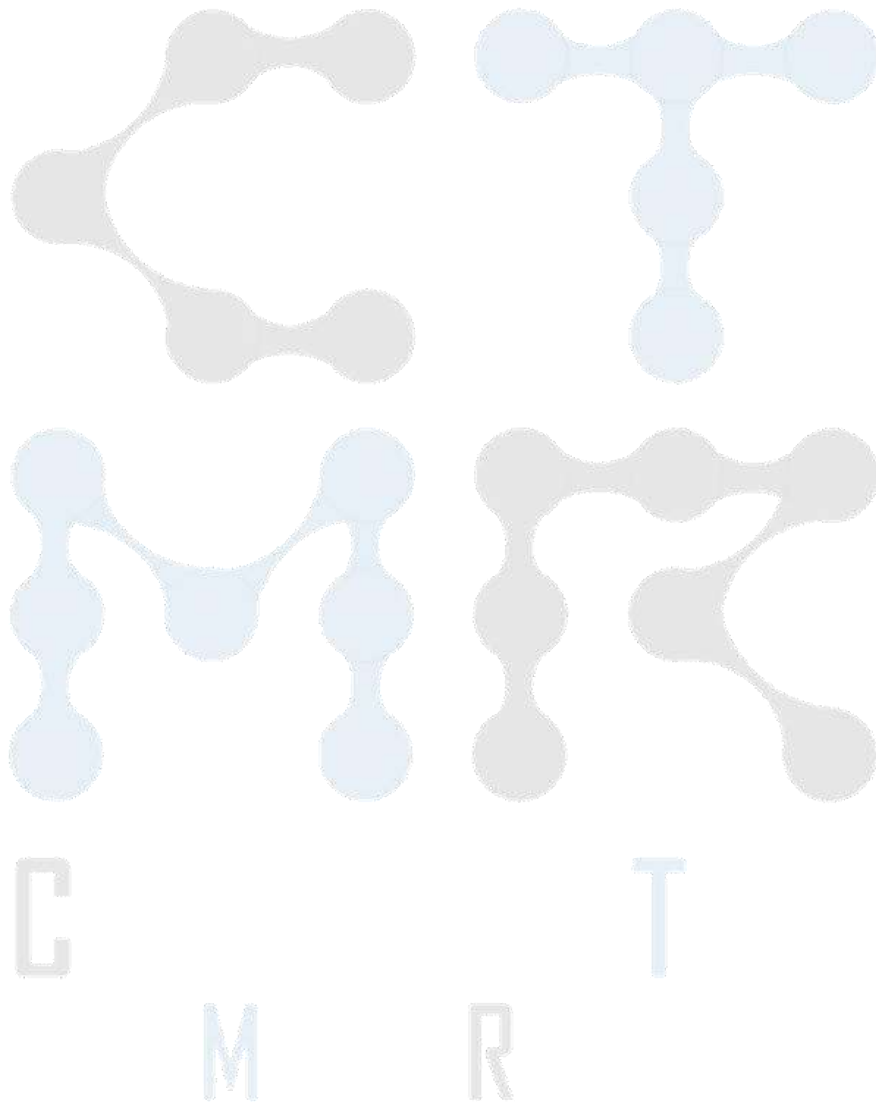
Xulosa: Teri organizmni tashqi omillardan himoya qiluvchi muhim organ hisoblanadi. Uning gistologik tuzilishini bilish terining normal va patologiya holatlarini yaxshiroq tushunishga yordam beradi. Sog'lom teri uchun to'g'ri parvarish qilish, sanitariya-gigiena qoidalariga rioya qilish va muntazam tibbiy ko'riklar muhim ahamiyatga ega.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Foydalanilgan adabiyotlar

1. K.A. Zufarov, "Gistologiya", Toshkent, 2005.
2. Q.R. To'xtaev, "Gistologiya", Toshkent, 2018.
3. A. Axmedov, "Anatomiya", Toshkent, 2018.
4. O.T. Aliyaviya, "Normal fiziologiya", 2006.
5. <https://uz.wikipedia.org>
6. <https://hujayra.uz>
7. <https://snaps.uz>



THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Methods of physical education and improving the health levels of student youth

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Abstract: The article discusses the issues of increasing the health levels of student youth in the process of physical education and sports. At the same time, the study of a set of research results on the body of students, the formation of a healthy lifestyle through physical education, physical training and physical development of modern youth. Thus, the importance of physical education for students for general physical training, primarily for promoting health.

Key words: Physical education, health, preparation, development, student, sport, process, body, preparation, condition, youth, healthy image.

Introduction

Health is an invaluable asset not only for every person, but also for the entire society. The purpose of physical education in universities is to promote the preparation of harmoniously developed, highly qualified specialists.

In the process of studying at a university in the course of physical education, the following tasks are envisaged:

- nurturing in students high moral, volitional and physical qualities, readiness for highly productive work;
 - maintaining and strengthening the health of students, promoting the correct formation and comprehensive development of the body, maintaining high performance throughout the entire period of study;
 - comprehensive physical training of students;
 - professionally applied physical training of students, taking into account the characteristics of their future work activity;
 - acquisition by students of the necessary knowledge on the basics of theory, methodology and organization of physical education and sports training, preparation for work as public instructors, coaches and judges;
 - improving the sports skills of students;
 - instilling in students the conviction of the need to regularly engage in physical education and sports.
- The physical education program provides for the direct involvement of each student in physical education and sports as the most effective means of promoting health. It is the valeological aspects in the structure of the physical education system for student youth that constitute its priority essence. However, it can be noted that in the practice of physical education there is not always work to determine the level of students' health and its control. It is known that it is the level of individual somatic health that determines the safe zone of intensity of physical activity during physical exercise and is a criterion for the effectiveness of these activities.

When forming physical education and increasing the physical fitness of students, it is necessary to take into account the state of health and level of physical fitness, as well as a number of socio-economic and environmental problems.

Adjustment of traditional methods in physical education is necessary, especially with a reduction in teaching hours for physical education classes. It is necessary to orient students to physical education

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

classes with individual predisposition, availability of physical activity in a certain direction. This is a good motivation for doing independent physical exercises in your free time.

One of the main tasks of the management structures of higher educational institutions is to organize the educational process in such a way that the student not only does not lose his health resources, but also replenishes them. In this regard, the organization of the healthcare system is currently focused on motivating the preservation of health in the consciousness and behavior of young people. The central problem is to overcome the contradiction between the potential of personal physical culture, the level of social knowledge, cultural heritage in the field of activity related to physical education, the improvement of a young person, on the one hand, and the level of individual knowledge of students in this area, on the other. That is why, at present, the place of physical culture in the value system of a student's personality does not correspond to its importance as one of the most important indicators of the general culture of student youth.

The goal of the educational process should be the creation of an educational environment aimed at the harmonious development of the individual, the formation of a system of value orientations and the establishment of an active life position of students based on positive motivation for self-development and self-improvement, as well as interest in supporting a healthy lifestyle, creating conditions for scientific, creative, physical development of the student as the basis for the formation of a healthy lifestyle.

For a targeted discussion of current issues of a healthy lifestyle for students, a special topic of abstracts is proposed, which was an integral part of the theoretical section in the discipline "Physical Culture". During practical classes, skills and abilities of health-saving behavior are consolidated, skills of self-monitoring of physical condition, self-insurance techniques when performing physical exercises are formed, and optimal motor modes are determined using specific examples.

Physical education is a pedagogical process that is aimed at improving the forms and functions of the human body, the formation of motor skills, related knowledge skills, as well as the development of physical qualities. Physical education is connected with other aspects of education - moral, aesthetic, production, labor.

One of the most important conditions for raising a healthy generation is a culture of human health, instilled from early childhood. In modern conditions of an ever-accelerating pace of life and increasing tension in social relations, health is becoming one of the main conditions for the success of any person. Everyone understands how important it is, starting from a very early age, to instill in children an active attitude towards their own health, to create a culture of health that includes various aspects of human existence.

The main components of human health are complete mental, physical and social well-being directly related to his socio-economic and cultural-ethnic environment. The low level of health and general physical development of many students, as well as its further decline in the learning process, pose a serious problem today, therefore, in the educational process it is necessary to organize independent work aimed at improving physical development and maintaining health.

Independent work included in the learning process is work that is performed without the direct participation of the teacher, but according to his instructions and in the time specially provided for this. At the same time, students consciously strive to achieve their goal, showing their efforts and expressing in one form or another the results of their mental and physical actions.

In the process of cultivating interest in physical exercise, it comes from the essence of the general system of educational work, as well as from the characteristics of age. The conditions for training and

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

education of students, determined by our reality, determine in turn the interests of students in this or that activity and contribute to the formation of personality.

One of the main conditions for cultivating interest in physical exercise is active physical activity, because the connection between theory and practice is one of the decisive factors for a physically comprehensive, harmoniously developed person. The main feature of the condition of active motor activity is that the development of interest in physical exercise occurs on their basis, since during these classes the student is not only a simple performer of certain physical exercises and tasks, but he himself actively participates in the physical culture life of the team, applies and uses various physical exercises to develop certain moral traits and qualities.

The work on physical education and education does not consist of calls and slogans on issues of physical culture and sports, but in the creation of physical culture and sports, tourism, in which the student would participate in the physical education, mass and sports life of his team. Forming an attitude towards a healthy lifestyle is the most important task of the state, since lifestyle is a determining factor of health. Creating your own healthy lifestyle system is an extremely long process and can last a lifetime.

Feedback from the changes occurring in the body as a result of following a healthy lifestyle does not work immediately; the positive effect of switching to a rational lifestyle is sometimes delayed for years. Unfortunately, very often students only try the transition itself, but without getting quick results, they return to their previous lifestyle. In such situations, when students have bad habits, and their health deteriorates during the learning process, taking the path of a healthy lifestyle is very important. Often, one of the reasons for the decrease in the level of condition and physical fitness is the unresolved problem of an individual approach, which leads to low efficiency of physical education and, as a consequence of this objective factor, to weak interest in physical exercise, low level of physical education literacy, underdeveloped motivation and needs for mastering values of physical culture. The implementation of individual and typological approaches contributes to the development of intellectual and cognitive abilities, increasing interest in physical exercise, cultivating positive emotions, reducing mental fatigue and emotional stress, and increasing student performance.

It is known that the effectiveness of physical education is associated with prompt diagnosis of the physical condition of students. Only having information about the level of physical fitness, the individual abilities of the body to perform the load, can one determine the content of classes and make the required adjustments to it. Unfortunately, diagnostics often comes down to testing students at the beginning and end of the academic year and is only of an ascertaining nature. The data does not receive further pedagogical interpretation, and this is no coincidence, since in order to analyze the test results and draw conclusions about possible pedagogical measures, the teacher needs too much time. The use of software and technological complexes designed to solve problems of assessing the physical status of athletes, organizing and storing data for subsequent analyzes and individual recommendations for correcting health and physique will make it possible to reduce this time and increase the information content of test results.

Conclusion

In conclusion, we can conclude that the constant attention paid to the development of sports in the country is based on the goal of raising a comprehensively healthy and spiritually rich generation. Observing the above principles, in the conditions of an educational institution, a process of educational material and educational activities is carried out that reveal the essence of the main components of health and a healthy lifestyle through organizing the interaction of participants in the pedagogical

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

process, in which values, health ideals and an understanding of the need to improve one's own health are formed.

Bibliography

1. "Law on Physical Culture and Sports" of the Republic of Uzbekistan. 01/14/1992.
2. "On the problem of the development of physical culture and sports" in the Republic of Uzbekistan. 05.27.1999.
3. "Concept for the development of physical culture and sports in higher educational institutions" of the Republic of Uzbekistan. 03/21/1999.
4. Erkabaev D. E., Yusupov D. S. Theory and methodology of teaching physical culture. Magazine «EVROPEAN SCIENCE». 2019. -91-93 p.
5. Yusupov D. S. Physical education and the effectiveness of rest for healthy lifestyle. CENTRAL ASIAN JOURNAL OF THEORETICAL AND APPLIED SCIENCES. 2021. -103-106 p.
6. YDS Kim L.A. Sociological Aspects of Volunteering The International Journal of Multicultural and Multireligious Understanding..., 2021. -345-352 pp.
7. Yusupov D. S. DEVELOPMENT OF SPORTS AND PHYSICAL TRAINING YOUTH WITH STRENGTHENING POPULATION HEALTH IN CONDITIONS QUALITY TRANSFORMATION. Gospodarka i Innowacje. 23, 1-7, 2022
8. Yusupov D.S., Yunusov A.Sh., Turobov Y.K. Organization, Conditions And Positive Changes in the Field of Sports During the Years of Independence Uzbekistan. CENTRAL ASIAN JOURNAL OF THEORETICAL & APPLIED SCIENCES 3(6), 584-588, 2022
9. Kim L. A, Yusupov D. S. Culture as a source of environmental education development// central Asian journal of theoretical And applied sciences Volume: 02 issue: 08 | Aug 2021 issn: 2660-5317
10. Kim L. A., Yusupov D. S. SOCIOLOGICAL DIMENSION OF ENVIRONMENTAL RESPONSIBILITY //World Bulletin of Public Health (WBPH) Available Online at: <https://www.scholarexpress.net> Volume-15, October 2022 ISSN: 2749-3644, pp. 148-153
11. Yusupov D.S. Role of Computer Technology And Application Innovative, Interactive Teaching Methods in the Field of Physical Education Culture And Sports. CENTRAL ASIAN JOURNAL OF LITERATURE, PHILOSOPHY AND CULTURE. 2023. - 174-178 p.
12. Yusupov D.S., Sodikov T.G. Complex and physical approaches to studying the health status of students, training violations and overtraining. INNOVATIONS IN TECHNOLOGY AND SCIENCE EDUCATION 2 (7), 1051-1057, 2023
13. Yusupov D.S. The influence of physical culture and sports on human health. Innovations in Technology and Science Education 2 (16), 327 - 334, 2023

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

14. Yusupov D.S., Yunusov A.Sh. Studying the state of health and preparedness of students in the process of physical education and sports. *Innovations in Technology and Science Education* 3 (18), 58-65, 2024
15. Yusupov D.S. COMPLEX AND PHYSICAL APPROACHES TO STUDYING THE HEALTH STATUS OF STUDENTS, TRAINING DISORDERS AND OVERTRAINING *Gospodarka i Innowacje*. 35.27-30.2023
16. Bobur Normamatovich Mengliyev. ***Problems of formation of pedagogical competence of physical education teachers***. 4-25-2022.
17. Bobur Normamatovich Mengliyev. Trener-o'qituvchilar pedagogik kompetentligi va mahoratini shakllanishiga ta'sir etuvchi omillarning nazariy asoslari. June, 2023 y
- 18, Valiql o'g'li, K. S. (2023). INTERNATIONAL RECOGNITION OF YOUTH POLICY OF NEW UZBEKISTAN. *International Journal of Formal Education*, 2(6), 154-159.
19. Katayev Salaxiddin Valiql o'g'li. (2023). THE ROLE OF A PROFESSIONAL FOREIGN LANGUAGE FOR WORKERS IN THE AGRICULTURAL SECTOR. *Miasto Przyszłości*, 36, 286–288. Retrieved from <https://miastoprzyszlosci.com.pl/index.php/mp/article/view/1525>
20. Katayev, S. (2022). Creating Presentation Programms for Teachers. *Gospodarka i Innowacje.*, 19, 17-20

МЕТОДЫ СБОРА И КЛАССИФИКАЦИИ НАЗВАНИЙ ЦВЕТОВ

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Аннотация. В данной статье рассмотрены способы сбора и классификации названий цветов, историческое происхождение некоторых названий цветов, образ жизни, история, мировоззрения народов через названия цветов, язык этого народа и некоторые другие особенности, связанные с культурой этого человека были исследованы.

Ключевые слова. Фитоним, дерево, цветок, растение, лексема, семантическое поле.

Фитонимы являются частью языка с многовековой историей. Помимо народного быта, культуры, истории, общественно-политических воззрений, в них сохраняются древние традиции, характерные для языка и истории народа, создавшего их. Термин фитоним (от греч. *phyton* — растение + *onim* — имя) относится к названиям растений. Фитонимы также образуют уникальное семантическое поле в лексике узбекского языка. В это поле входят «фитонимические» архисемные единицы - имена существительные. Лексемы, относящиеся к растениям и деревьям, составляют одно из самых больших семантических полей в лексике узбекского языка. По словам профессора С. Сахобиддинова, в мире насчитывается около 500 000 видов растений, из которых 4 148 видов встречаются в Узбекистане. Они составляют 1023 поколения и 138 семей¹.

Сбор названий растений и деревьев, связанных с ними лексических единиц и всестороннее углубленное изучение могут дать нам ценную информацию. По мнению проф. А. Собинова, поле «Мир растений (фитонимы)» можно разделить на семантические микрополя следующим образом:

1. Морские водоросли.
2. Замбурги.
3. Сорняки.
4. Культурные цветы.
5. Вредные растения.
6. Лекарственные растения.
7. Колосовые растения.
8. Черные посевы.
9. Овощные культуры.
10. Питательные растения.
11. Технические культуры.
12. Пустынные, горные, горные растения.

¹ Сахобиддинов С. Ёсимликлар систематикаси. –Тошкент: Ўқитувчи, 1966.

13. Лесные растения.
14. Кустарники.
15. Живописные деревья.
16. Фруктовые деревья².

Системное и художественное употребление лексем некоторых названий растений в узбекском языкознании исследовано в кандидатской диссертации Г. Нематовой³.

В нашей статье на основе классификации, данной в монографии А. Собирова, мы выделили фитонимы, активно употребляемые в художественных произведениях и диалектах узбекских писателей. В связи с тем, что в рамках одной статьи невозможно прокомментировать лексемы, относящиеся ко всем 16 группам фитонимов, мы выбрали для изучения названия цветов из них исходя из темы.

Причиной активного использования в художественных текстах единиц, принадлежащих к этим группам, является репрезентируемый ими денотат. Ведь денотаты, выражаемые этими именами, занимают важное место в жизни узбекского народа и являются неотъемлемой частью его повседневной жизни. Соответственно, в нашей статье мы решили искать их в художественных и научных текстах, а после их обнаружения и выявления решили разделить на смысловые микрогруппы.

В группу «Названия овощных культур» входит множество единиц, которые в основном являются названиями овощных культур. Выращивание овощных культур, то есть овощеводство, стало самой необходимой отраслью. В Узбекистане также создан научно-исследовательский институт по их изучению.

Овощ — это травянистое растение, которое съедобно и используется в пищу. Известно более 120 культурных видов. В Узбекистане насчитывается 90 видов овощей, принадлежащих 10 семействам. Названия овощей можно разделить на 5 групп в зависимости от их употребления в пищу:

1. Цветочные названия.
2. Корневые имена.
3. Названия лука.
4. Названия фруктовых овощей.
5. Названия съедобных овощей.

В группу названий цветов можно включить следующие существительные:

1. На первом месте названия цветов, характерных для русско-интернационального слоя: канна, кала, олеандр, герань
2. На втором месте названия цветов, принадлежащих к тюркскому слою. Потому что они составляют большинство по численности: бойчечак, топбош.
3. Подразделения, принадлежащие персидско-таджикскому слою, на третьем месте. Среди наблюдаемых нами фитонимов было много персидско-таджикских слов: настарин, гултохороз.

В статье также показано происхождение наблюдаемых фитонимов на основе «Толкового словаря узбекского языка».

² Собиров А. Ўзбек тилининг лексик сатҳини системалар системаси тамойили асосида тадқиқ этиш. — Тошкент: Маънавият, 2004, 94-б.

³ Нематова Г. Ўзбек тилида ўсимлик номлари лексемалари: тизими ва бадий қўлланилиши. НДА. — Ташкент, 1998.

Необходимость давать названия цветам появилась в последние периоды общественного развития. В этот период стали появляться названия цветов в связи с ростом взаимоотношений между людьми, занимающимися земледельческой культурой, и увеличением разнообразия видов названий цветов.

На сегодняшний день удовлетворительно изучены направления антропонимики, топонимики, гидронимики, этнонимики, частично, космонимики, зоонимики, а также ономастической лексикографии, правописания народных существительных. Однако в узбекском языкознании некоторые виды имен собственных, в том числе имена собственные, представляющие сорта и виды цветов - фитонимы, специально с лингвистической точки зрения не изучались.

В узбекском языкознании имеются названия плодовых деревьев К. Мелиева⁴, колючих растений А. Курбанова⁵, кандидатские диссертации Т. Нуманова по охраняемым условиям⁶, исследования М. Сапарова по охраняемым культурам⁷.

В приведенных работах изучалась в основном апеллятивная лексика, представляющая названия растений, но народные названия растений и цветов в узбекском языке специально не собирались и монографически не изучались.

Названия цветов классифицируются как лингвистические и ботанические единицы по отбору, сорту и типу его выражения и другим природным признакам.

Обычно языковые единицы имеют ступенчатую (иерархическую) связь. Это также относится к апеллятивной лексике и фитонимии, представляющей названия цветов. В языковых единицах, связанных иерархическими отношениями, единица, представляющая более широкое понятие и значение, содержит единицу, представляющую более узкое понятие и значение, с которой чаще всего вид-род (гипо-гипероним), целое-целое входит в лак (партономия). связи.

Каждая апеллятивная лексема внутри парадигмы имеет гипонимическую позицию, в свою очередь, каждый гипоним может объединять ряд лексем, в частности, названия видов и разновидностей - фитонимов, и становится гиперонимом по отношению к другим внутри объединенной группы.

Однолетники также различаются по своим характеристикам роста. Примерами этого являются ампельные (настурция), стелющиеся (душистый горошек, ипомея) и прямостоячие растения (дельфиниум, люпин, кунжут) и другие. Многие однолетники превосходят другие группы цветковых растений формой цветка, разнообразием окраски и особенно продолжительностью цветения. Цветы многих однолетних растений, таких как виноград и душистый табак, очень ароматны. Некоторые из них имеют ароматные листья — герань, полынь и др.

Однолетники широко используются для оформления клумб, клумб, клумб, а также для озеленения веранд, подоконников, настенных полок. Их также используют в качестве

⁴ Мелиев К. Туркий тилларда мевали дарахт номлари ва улар асосида ясалган лексик бирликлар // Ўрта Осиё ва Қозоғистон туркий тиллари лексикасидан тадқиқотлар. – Тошкент: Фан, 1990. – Б. 100-175.

⁵ Курбанов А. Термины зерновых культур и зерного хозяйства узбекского языка: Автореф. дис... канд. филол. наук. – Ташкент, 1975. – 24 с.

⁶ Нугмонов Т. Термины бахчеводства в узбекском языке: Автореф. дис. ... канд. филол. наук. – Ташкент, 1971. – 22 с.

⁷ Сапарова М. Туркий тилларда полиз экинлари номлари // Ўрта Осиё ва Қозоғистон туркий тиллари лексикасидан тадқиқотлар. – Тошкент: Фан, 1990. – Б. 176-250.

живых изгородей для цветения ранней весной или осенью. Большинство из них делают хороший режущий материал. Все однолетники в основном размножаются семенами, но некоторые можно размножать и черенкованием (петунии, душистый горошек, шалфей и др. Многие однолетники можно высаживать прямо в открытый грунт, что в определенной степени снижает затраты на производство цветов по сравнению с выращиванием с рассадой. Применяется для черенкования однолетников, выращиваемых в открытом грунте, устройства клумб (вдоль шоссе, улиц, парков, аллей), несложных клумб и др. В средней полосе аллиссум, василек, ацроклиниум, гипсофиллум, годения, душистый горошек. Можно высаживать, дельфиниум, диморфотекус, иберис, календулу, кореопсис, кларкию, космею, кохию, люпин, настурцию, гудбеор, резеду, хризантему, ашхольсию и другие однолетники. Их проводят в разное время, чтобы растения были готовы к цветению в начале дачного сезона. Бегонии вечноцветущие, гвоздики Шабо, вербены, лобелии, петунии кукольной, киновари приморской и др. имеют длительный период (от 130 до 180 дней) от посадки до цветения. Соответственно, сажать их следует в январе или феврале. Для этого в хозяйстве необходимо иметь теплицы. От посадки до цветения таких однолетников, как энотера, агератум, леукой, львиная пасть, золотой петушок, флокс летний, духобагул, петуния, хризантема проходит 100-120 дней. Соответственно, сажать их следует в марте. У годении, дельфиниума, календулы, космеи, люпина, резеды, бархатцев, кларкии, линарии и др. этот период длится до 70 дней, поэтому сажать их следует в марте-апреле.

Духобагуль, бальзамин, бегония, сальвия, ипомея, настурции очень теплолюбивы и не переносят даже небольшого холода. Адонис, шафран, алиссум, антиринум, годения, гвоздика, дельфиниум, душистый горошек, календула, леукой, резеда, наоборот, устойчивы к холоду.

Агератум, долгоцветка по своим биологическим признакам является многолетним растением, но используется как однолетник.

Алиссум, каменик, бурачок — однолетнее растение семейства Хохлатые. Его привозят из Средиземного моря и Центральной Европы.

Гулижавхар (бархатек), однолетнее растение, относящееся к семейству бархатцев. Привезен из Центральной Америки.

Лобелия по биологической природе является многолетним растением, но в декоративном садоводстве ее размножают как однолетник.

Виноградная лоза — многолетнее растение, используемое как однолетнее растение в ландшафтном садоводстве. Принадлежит семье Резеда. Привезен из Северной Африки и Южной Европы.

Шалфей, шалфей (маврак) — многолетнее растение по своим биологическим признакам, но используется и как однолетник, полукустарник. Привезен из Южной Америки.

Аксирантес по своим биологическим характеристикам является многолетним растением, используемым как ковровое растение в ландшафтном озеленении. Относится к семейству амарантовых. Привезен из Южной Америки.

Мезембриантеум или полуденник по своим биологическим характеристикам является многолетним растением. Принадлежит семье Айз. Привезен из Африки. Высота растения невысокая, растет куртиной, со стеблем. Листья гладкие, округло-яйцевидные, пятнисто-желтые.

Очиток, ачиток — многолетнее растение, относится к семейству седумовых. Очиток голубой - зимует в открытом грунте, очиток пестрый - в открытом грунте не зимует. Они широко используются в цветоводстве. Фуксия золотистая – многолетнее растение, относящееся к семейству красностебельных благодаря своим биологическим особенностям. Привезен из Южной и Центральной Америки. Бессмертник, Олмасот – многолетнее растение, но его высаживают как однолетник. Гвоздика гренадина биологически многолетнее растение, но в декоративном садоводстве используется как двулетнее растение. Относится к группе голландских гвоздик. Гвоздика турецкая, гульпопук – многолетнее растение, по своим биологическим признакам относящееся к семейству гвоздичных, но в декоративном садоводстве используется как двулетнее растение. Привезен из Южной Европы. Высота кустов 35-50 см. достигает до, набор листьев формируется в год посадки.

Колокольчик используется как многолетнее растение благодаря своим биологическим свойствам. Относится к семейству колокольчиковых. Привезен из Южной Европы и Азии.

Мальва, (цветок) – многолетнее растение, принадлежащее к семейству цветковых, выращиваемое как двулетнее растение. Его привозят из стран Средиземноморья и Азии.

Маргаритка по своим биологическим признакам является многолетним растением, а в садоводстве используется как двулетник.

Многие цветы по всему миру названы в честь Самарканда. Розово-оранжевый цветок из семейства лилейных называется «Шелковый Самарканд». по мнению специалистов, такие цветы украшают любой сад. это имя было зарегистрировано в 1995 году компанией Billingslea. В ботаническом саду Вашингтона можно найти орхидею под названием «Самаркандская».

В 2009 году зарегистрирован новый вид бородастой розы под названием «Самарканд йоли». Эти лимонно-желтые цветы были выведены австралийским селекционером Барри Блайтом.

Крупная красная садовая роза «Самарканд», выращенная в Эквадоре, не увядает в течение 12 дней после срезки. Встречаются в природе и такие цветы, как «Самаркандский наматаги» и «Самаркандский бозночи». Когда вы нарисуете цветок стрелиции, вы будете уверены, что он похож на птицу. По этой причине ее даже называют «райской птицей». Родом из Южной Африки, эти цветы считаются комнатными цветами или срезанной экзотикой. Считается вечнозеленым кустарником, это один из самых распространенных цветов в Колумбии и Венесуэле. Встречается также в странах Центральной и Южной Америки. Некоторые почему-то считают этот цветок обычным сорняком.

Цветок канна – единственный представитель семейства канна, насчитывающего около 50 видов. Одной из его прекрасных черт является гармония разных цветов. В основном встречается в Центральной и Южной Америке. Название цветка гортензии происходит от имени принцессы Гортензии, сестры римского принца Карла-Генриха Нассау-Цигена. Насчитывает около 600 видов. Цветет в июле-августе. В Японии его еще называют Адзиса. Цветок каллы также называют «акканот». Цветок, произрастающий в устойчивых к холоду водно-болотных угодьях. Цветоводы выращивают его разнообразие.

Цветок дицентра также известен под названием «Разбитое сердце». С этим цветком связаны различные легенды. Везде этот цветок имеет особое символическое значение. Например, он известен как Цветок Сердца у немцев, Сердце Дженнет у французов и

Кровавое Сердце у британцев. Причиной таких названий этого цветка является его форма. Когда вы посмотрите на него, вы увидите форму сердца, разделенного надвое.

Цветок гиацинт получил свое название от имени красивого греческого мальчика, который очень любил бога Аполлона. В то же время этого юношу любил и другой греческий бог Зефир. Но Гиацинтис не ответил ему. В ярости Зефир бросил что-то ему в голову. По легенде, этот цветок вырос из крови убитого Гиацинта. Название цветка дендробиум происходит от греческих слов «дендро-дерево» и «био-жизнь». Дендробиум полностью означает «древесный обитатель». Эти цветы принадлежат к семейству орхидей и охраняются Международной конвенцией.

Принципы нормирования, сравнения и описания названий цветов являются ведущими в наименовании сортов и разновидностей, морфологическим, химическим и относительным признакам, таким как их окраска, форма, величина, внешний вид, лекарственное значение, рост, ареал возделывания, название растения. создатели, сезонные характеристики. - характеристики учитываются. В основе фитонимов лежат турецкие, в том числе узбекские и арабские, персидско-таджикские слова, содержащиеся в словаре языка.

В самом деле, когда на определенной территории начинают расти разные сорта цветов, становится объективно само собой разумеющимся отличить их друг от друга. В такое время простым словам в названии цветов предшествуют разные идентифицирующие составные, разные слова, и начинают вычитывать и отделять их друг от друга. Номинация названий цветов не спонтанна, а происходит сознательно через лексемы, обозначающие термины вещей, предметов и событий в предметном мире (золотая вершина, аравакаш, опшайхан, победа) или вследствие взаимного сопоставления и аналогии их различных характеристик. При этом субъект (человек), называющий цветы, обращает особое внимание на внешнее строение, размер, окраску и форму производных в предмете (названия цветов). Лексические единицы (названия), наглядно поясняющие специфические особенности видов названий цветов, их выделяющиеся и заметные моменты, индивидуализируют название цветов, и со временем эти слова становятся настоящими названиями цветов.

Создается впечатление, что в появлении названий цветов на первый план вышел внешний смысл. Так, некоторые названия цветов были названы в результате уподоблений и сравнений.

В узбекском языке очень много красочных названий названий цветов, в основе их наименования лежат разные идеи и понятия, ономазиологические и различные другие приемы. Тематически их можно сгруппировать следующим образом.

Анализ названий цветов показывает, что в языках региона цветочные типы состоят из корневых и искусственных названий, и очень мало из них образованы от корневых слов.

Среди вымышленных имен наиболее распространены имена, созданные синтаксическим методом. Названия цветов составляют в основном морфологическим методом. Вышеупомянутые суффиксы добавляются к стеблю, чтобы сформировать названия цветов. Один из этих аффиксов -i является универсальным дополнением и принимает участие в образовании названий цветов. Но среди собранного материала названия цветов, образованные этим аффиксом, составляют большинство названий цветов.

Наиболее продуктивным способом образования названий цветов является синтаксический способ. Это ведущий метод по следующей причине. Из-за ограниченной экспрессивной «силы» названий, состоящих из корневых слов, в объяснении наиболее

характерных признаков вновь появившихся сортов цветов, увеличился вес названий, возникших синтаксическим путем, в языках региона.

Среди видов компонентов, входящих в состав названий цветов, составленных синтаксическим методом, основное место занимают те, которые образованы в формах существительное+существительное и прилагательное+существительное. Причина этого в том, что цветы названы в честь их цвета и внешнего вида. Они, в свою очередь, легли в основу ведущей формы цветочных названий, образованных от соединений в отношениях детерминативно-определенных и референтно-рефлексивных.

Способы называния цветов также уникальны. Если в выражении названий цветов одно из ведущих мест занимает называние по цвету и форме, то в некоторых названиях ведущее место занимает именование по употреблению его в кулинарии.

Общность в наименовании всех видов цветочных названий чаще встречается в наименовании их по цвету и цвету. Также в сортах цветов распространены названия, связанные с ономастикой.

Использованная литература

1. Саҳобиддинов С. Ўсимликлар систематикаси. – Тошкент: Ўқитувчи, 1966.
2. Собиров А. Ўзбек тилининг лексик сатҳини системалар системаси тамойили асосида тадқиқ этиш. – Тошкент: Маънавият, 2004, 94-б.
3. Неъматова Г. Ўзбек тилида ўсимлик номлари лексемалари: тизими ва бадий кўлланилиши. НДА. – Ташкент, 1998.
4. Мелиев К. Туркий тилларда мевали дарахт номлари ва улар асосида ясалган лексик бирликлар // Ўрта Осиё ва Қозоғистон туркий тиллари лексикасидан тадқиқотлар. – Тошкент: Фан, 1990. – Б. 100-175.
5. Курбонов А. Термины зерновых культур и зерного хозяйства узбекского языка: Автореф. дис... канд. филол. наук. – Ташкент, 1975. – 24 с.
6. Нугмонов Т. Термины бахчеводства в узбекском языке: Автореф. дис. ... канд. филол. наук. – Ташкент, 1971. – 22 с.
7. Сапарова М. Туркий тилларда полиз экинлари номлари // Ўрта Осиё ва Қозоғистон туркий тиллари лексикасидан тадқиқотлар. – Тошкент: Фан, 1990. – Б. 176-250.
8. Сафарова Р. Гипонимия в узбекском языке: Автореф. дис... канд. филол. наук. – Ташкент, 1990.

УПРАВЛЕНИЕ ИЗМЕНЕНИЯМИ В ПОСТПАНДЕМИЙНЫЙ ПЕРИОД

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Аннотация

В данной статье рассматриваются вопросы управления изменениями в Узбекистане в постпандемийный период, а также анализируются президентские решения и меры, вытекающие из них. Оценены решения, принятые в Узбекистане для преодоления экономических и социальных последствий пандемии (например, № 5962, 6039, 5994), направленные на поддержку малого бизнеса, развитие цифровой экономики и восстановление системы здравоохранения. В статье также анализируются проблемы и ошибки, возникающие в процессе управления изменениями, а также пути их устранения. Исследование помогает разработать эффективные стратегии для успешного управления изменениями.

Ключевые слова: Пандемия, управление изменениями, президентские решения, экономическое восстановление, цифровая экономика, Узбекистан.

Введение

Пандемия COVID-19, начавшаяся в конце 2019 года, стала серьезным испытанием для стран всего мира. Эта пандемия оказала значительное влияние на системы здравоохранения и экономические структуры, что привело к масштабным изменениям во всех сферах — от здравоохранения до экономики, образования, социальных систем и государственного управления. Особенно острыми стали проблемы, такие как приостановка производственных отраслей, кризис малого и среднего бизнеса, сокращение частного сектора и рост социальной неравенства, которые также проявились в Узбекистане. В то же время, для борьбы с негативными последствиями пандемии и обеспечения социально-экономического восстановления правительство Узбекистана реализовало эффективный и оперативный план действий.

Управление изменениями в постпандемийный период стало особенно актуальной задачей для Узбекистана. Успешная реализация этого процесса включает не только восстановление экономики, но и реконструкцию системы государственного управления на основе современных требований, а также активное развитие здравоохранения, образования и цифровой экономики. Для устранения проблем, возникших в условиях пандемии, обеспечения социальной стабильности, в частности, совершенствования системы социальной помощи и внедрения новых рабочих механизмов в экономическом секторе, правительство Узбекистана приняло оперативные и эффективные решения.

В Республике Узбекистан были приняты несколько важных решений в период пандемии, которые стали надежным фундаментом для формирования новой экономической модели и системы управления. Решения, документы и меры, принятые Президентом Шавкатом Мирзиёевым, способствовали быстрой ликвидации последствий пандемии и достижению экономической и социальной стабильности. Особенно важными стали Указ Президента от 19 марта 2020 года «О мерах по поддержке экономики в условиях пандемии и стимулированию предпринимательства» (№ 5962) и Указ «О мерах по преодолению социально-экономических последствий коронавирусной пандемии и усилению социальной поддержки населения» (№ 6039), которые стали основными дорожными картами для управления изменениями и выхода

страны из кризисного состояния. Эти документы ориентированы на восстановление экономики, поддержку частного сектора и социальную поддержку населения.

Экономический рост Узбекистана в постпандемийный период и решения, направленные на управление изменениями в системе государственного управления, включают в себя важные направления, такие как обеспечение прозрачности, борьба с коррупцией и внедрение новых цифровых технологий. Например, Указ Президента от 9 июля 2020 года «О мерах по новой экономической политике и либерализации экономики» (№ 6009), стратегия по развитию цифровых технологий «Цифровой Узбекистан - 2030» и Указ «О комплексных мерах по восстановлению экономики в 2020 году» (№ 5994) стали основой для эффективного управления в этих сферах. Эти решения, во-первых, направлены на сохранение экономической стабильности в период пандемии, во-вторых, на преодоление социальных последствий пандемии, и в-третьих, включают меры по созданию новых рабочих мест, привлечению инвестиций и поддержке предпринимательства.

Решения Президента и стратегии правительства, а также меры, направленные на развитие бизнеса, поддержку малого и среднего предпринимательства, упрощение налоговой системы, развитие цифровой экономики и инновационных технологий, сыграли ключевую роль в постпандемийном управлении изменениями. Эти меры стали основными направлениями управления изменениями в условиях пандемии, направленными на стимулирование экономического роста и повышение эффективности государственных и частных институтов.

Однако в процессе управления изменениями, вызванными пандемией, возникли и ряд проблем и ошибок. В первую очередь, важным препятствием для успешной реализации изменений стал широкий спектр сопротивления изменениям. После кризиса, вызванного пандемией, стало крайне важным преодолеть это сопротивление. В частности, сопротивление изменениям проявлялось в интересе общества к неизменности привычного образа жизни и в недовольстве по поводу эффективности существующих систем. Этот момент требовал от правительства особого внимания и усилий для корректировки и адаптации подходов к реализации реформ.

Под влиянием пандемии результаты работы промышленных отраслей также стали одной из главных причин трудностей в процессе управления изменениями. Кроме того, реформы, проведенные в последние годы, выявили определенные ограничения в решении проблемы социального неравенства. В таких условиях эффективность принятых правительством решений и экономических реформ играет ключевую роль в преодолении существующих проблем и обеспечении долгосрочной стабильности и справедливости в обществе.

В данной статье рассматриваются эффективные стратегии управления изменениями в Республике Узбекистан в условиях пандемии, значение принятых решений и социально-экономическое воздействие реализованных реформ. Также анализируются проблемы и ошибки, возникшие при преодолении последствий пандемии. На основе опыта Узбекистана и международной практики приводятся необходимые меры для более эффективного осуществления процесса управления изменениями. Статья представляет научно обоснованные рекомендации для укрепления и развития системы государственного управления в постпандемийный период.

Научные исследования в области управления изменениями в период пандемии сыграли важную роль в разработке стратегии управления изменениями в Узбекистане. Успех управления изменениями зависит от эффективности государственных решений, способности

различных социальных и экономических слоев адаптироваться к изменениям, а также от внедрения новых технологий. В статье анализируются эффективные пути управления изменениями в Узбекистане в условиях пандемии, а также проблемы, с которыми столкнулись в этом процессе. На основе анализа ошибок и достижений в управлении изменениями, даются рекомендации по улучшению этого процесса в будущем.

Анализ литературы

Научные исследования в области управления изменениями в период пандемии были направлены на изучение факторов, которые влияли на успешность или неуспешность реализации изменений в различных странах. В этой области в нескольких научных работах анализируются ключевые аспекты управления изменениями в условиях пандемии, проблемы, возникающие в процессе управления, влияние принятых решений и осуществленных реформ, а также эффективные стратегии и методологии управления изменениями. В дальнейшем будут рассмотрены основные научные исследования и подходы в данной области.

Одной из первых крупных научных работ в области управления изменениями является модель, разработанная Куртом Левином. Трехступенчатая модель Левина — «Размораживание» (unfreeze), «Переход» (change) и «Замораживание» (refreeze) — широко применяется как основная теоретическая основа для реализации изменений. Курт Левин (1947) разделил процесс изменений на три этапа и определил особенности каждого из них [1]. Теория Левина сыграла важную роль в понимании стратегий управления изменениями, реализованных в условиях пандемии.

В условиях пандемии новые рабочие процессы, внедренные государствами и организациями, такие как удаленная работа, цифровые технологии и коммуникация через социальные сети, соответствуют этапу «Переход» (change) в модели Левина. На этом этапе организации были вынуждены адаптировать свою деятельность к новым порядкам еще до реализации изменений. Например, в начале пандемии правительство Узбекистана внедрило меры по расширению цифровых платформ, организации дистанционного образования и коммуникации с населением через социальные сети. Эти процессы, аналогичные этапу «Переход» в теории Левина, способствовали адаптации организаций к новым условиям и минимизации социально-экономических последствий.

Модель Левина сыграла стратегическую роль в управлении изменениями во время пандемии, применяясь для быстрого и эффективного внедрения новых методов работы и коммуникации. Этап «Замораживание» (refreeze), указанный в модели, означает укрепление новых рабочих процессов и нормативов после завершения изменений. На этом этапе, после окончания пандемии, государственные органы и организации стремились обеспечить стабильность в социальных и экономических структурах через новые рабочие процессы и цифровые системы.

Таким образом, использование модели управления изменениями Левина предоставило необходимую теоретическую основу для успешного управления изменениями, осуществленными в период пандемии.

Джон Коттер разработал одну из самых известных теорий управления изменениями. Он четко определил необходимые этапы для успешного внедрения изменений, разделив их на восемь ключевых шагов. Коттер (1996) подчеркивает, что для полноценного управления изменениями необходимо выполнить следующие восемь этапов: 1) Объяснение необходимости изменений, 2) Создание сильной коалиции, 3) Определение ясных целей, 4) Привлечение

большого числа людей к участию, 5) Демонстрация краткосрочных побед, 6) Поддержание расширенного успеха, 7) Укрепление изменений, 8) Внедрение изменений в культуру организации.

В период пандемии модель из восьми шагов Коттера была эффективно применена, особенно при формировании экономической и социальной систем поддержки [2]. С началом пандемии правительство Узбекистана приняло ряд решений, направленных на поддержку малого бизнеса, ускоренное восстановление экономики, внедрение новых цифровых технологий и укрепление системы социальной помощи. Например, в 2020 году указом Президента Республики Узбекистан "О мерах поддержки различных отраслей экономики в условиях пандемии" (PQR-4766) было предусмотрено финансовое поддержание малого бизнеса и создание новых цифровых услуг. Этот указ способствовал реализации первого шага Коттера — объяснению необходимости изменений [3].

Кроме того, правительство Узбекистана в условиях пандемии предприняло ряд шагов, направленных на поддержку малого бизнеса, расширение цифровых технологий и укрепление системы социальной помощи, что соответствует нескольким этапам из восьми шагов модели Коттера — демонстрации краткосрочных побед, поддержания расширенного успеха и внедрения изменений в корпоративную культуру. Эти изменения способствовали эффективной реализации усилий государственных и общественных организаций, направленных на обеспечение экономической стабильности и укрепление социальной помощи в условиях пандемии.

В период пандемии важную роль сыграла взаимосвязь социальных, экономических и технологических изменений. В управлении этими изменениями особое значение приобрело внедрение инноваций и новых технологий. Майкл Портер (1985) в своей модели, направленной на повышение конкурентоспособности, предложил ряд ключевых идей о том, как организации должны внедрять инновации и новые технологии [4]. Он также подчеркивает необходимость усиления конкуренции через технологические обновления и адаптации к новым рыночным условиям. Клейтон Кристенсен (1997) в своей теории инноваций показал, как организации могут улучшить свои бизнес-процессы, изменяя существующие бизнес-модели и внедряя новые технологии [5]. Он говорит о роли дисruptивных инноваций в процессе внедрения технологий, что в свою очередь привело к расширению новых бизнес-моделей и технологий, таких как дистанционное образование, онлайн-торговля и цифровые государственные услуги в период пандемии.

Правительство Узбекистана в своей стратегии управления изменениями в условиях пандемии уделило особое внимание развитию цифровой экономики. Принятые в 2020 году стратегии "Цифровой Узбекистан - 2030" (Указ Президента Республики Узбекистан, 2019) и "Комплексные меры по восстановлению экономики" (Указ Президента Республики Узбекистан, 2020) стали важными шагами в внедрении цифровых технологий в период пандемии [6,7]. Эти стратегии были направлены на развитие цифровой экономики, расширение цифровых услуг и платформ, внедрение новых технологий и цифровизацию экономики, и стали основными инструментами для достижения этих целей. Эти решения укрепили опыт Узбекистана в применении технологических инноваций в условиях пандемии.

В период пандемии особое значение приобрели мероприятия, предпринятые правительствами, компаниями и общественными организациями для преодоления сопротивления изменениям в обществе и устранения социальных, экономических и культурных

барьеров, возникших в процессе адаптации к этим изменениям. Гарет Морган (1986) в своей модели "Образы организации" (метафоры) предоставил важную теоретическую основу для разработки эффективных стратегий преодоления сопротивления изменениям и успешного их внедрения [8]. В своей книге Морган описывает организации с помощью различных метафор: машины, организма, системы барьеров, а также культурных и духовных изменений. Каждая метафора требует разных подходов к управлению изменениями, что помогает разработать стратегии, соответствующие особенностям каждой организации в процессе реализации изменений.

Узбекистанские ученые, в том числе Дилмурод Юлдашев, Шукурбой Мирзаев и Рустам Узбекиев, провели научные исследования по вопросам государственного управления, восстановления экономики и управления изменениями в условиях пандемии. Их научные работы, в частности, были направлены на анализ проблем, возникающих при реализации государственных решений в условиях пандемии, и поиск путей их решения. Юлдашев и Мирзаев (2021) в своих исследованиях подчеркнули важность разработки эффективных методологий управления изменениями в условиях пандемии и своевременного внедрения экономической и социальной политики для борьбы с пандемией [9].

Исследования, проведенные в таких странах, как Чехия, Германия и США, анализируют социальные, экономические и политические трудности, с которыми столкнулись эти страны в условиях пандемии, а также меры, принятые для преодоления этих трудностей. Например, в Германии и США были разработаны эффективные методологии цифровой трансформации и удаленной работы в условиях пандемии, что способствовало повышению гибкости управленческих систем. Опыт Чехии продемонстрировал успешные результаты в быстром обновлении социальных систем помощи и реализации широкомасштабных мер для восстановления экономики.

Методы исследования

Основная цель данного исследования — анализ процессов управления изменениями в Узбекистане в период пандемии, выявление возникающих проблем в управлении изменениями и предложение эффективных управленческих стратегий. Методы исследования основаны на следующих научно-методологических подходах:

Метод анализа литературы был использован на начальной стадии исследования. С помощью этого метода были изучены теоретические основы и передовой опыт управления изменениями в условиях пандемии, включая научные статьи, книги, монографии, государственные постановления, указания президента и международный опыт. На основе анализа литературы были изучены научные идеи и методологии, касающиеся пандемии и процессов управления изменениями.

Квалификационный (или качественный) анализ и дескриптивный метод помогли в исследовании особенностей процессов управления изменениями. С помощью этих методов были проанализированы проблемы, возникшие в процессе управления изменениями в условиях пандемии, а также способы их решения. Кроме того, был описан ряд реформ, осуществленных в период пандемии, и меры, предпринятые государством, такие как стратегия «Цифровой Узбекистан – 2030» и комплекс мероприятий, направленных на восстановление экономики в 2020 году.

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Эмпирические исследования, такие как анкеты и интервью, использовались для изучения реальных ситуаций в процессе управления изменениями. В исследовании приняло участие более 200 специалистов, менеджеров и государственных служащих, с которыми были проведены анкеты. В ходе анкетирования оценивались проблемы и трудности, возникшие в процессе управления изменениями, а также эффективность принятых мер. С помощью анкет и интервью были собраны и проанализированы данные о процессах управления в условиях пандемии.

Метод сравнительного анализа был использован для выявления сходств и различий в процессах управления изменениями в условиях пандемии между Узбекистаном и другими странами. В частности, путем сравнения стратегий управления изменениями, реализованных в Узбекистане, с опытом других стран, были изучены эффективные методы и подходы. В исследовании анализировались успешные и неудачные практики управления изменениями в таких странах, как Германия, Республика Корея, США и других развитых странах, в контексте пандемийного периода.

Метод статистического анализа был использован для изучения экономических, социальных и политических последствий изменений, осуществленных в условиях пандемии. С помощью статистики были проанализированы такие параметры, как темпы роста экономики Узбекистана в 2020-2023 годах, создание рабочих мест, уровень развития цифровой экономики, восстановление предприятий и малого бизнеса. Данные были получены из государственных статистических органов, международных организаций и научных источников.

С помощью систематического анализа и синтетического метода была создана возможность систематически рассматривать комплексные проблемы, возникающие в процессе управления изменениями в условиях пандемии, а также разрабатывать интегрированные подходы к их решению. С помощью этого метода были проанализированы социальные, экономические, технологические и политические аспекты управления изменениями, связанные между собой.

Согласованная комбинация методов исследования помогла выявить эффективные методы управления изменениями в Узбекистане в условиях пандемии, а также проанализировать возникающие проблемы и ошибки в процессе управления изменениями. С помощью этих методов была создана возможность глубоко изучить социальные, экономические и политические факторы, влияющие на управление изменениями, а также разработать практические рекомендации.

Анализ и Результаты

Результаты проведенного исследования процессов управления изменениями в Узбекистане в условиях пандемии включают следующие основные анализы и показатели. Все анализы и результаты представлены в систематическом виде с использованием статистических данных, таблиц и показателей.

Таблица 1

Эффективность управления изменениями в условиях пандемии

Индикатор	2020	2021	2022	2023	O'sish (%)
Темпы экономического роста (трафик)	-0.9%	1.5%	5.1%	6.3%	+7.2%

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Доля цифровой экономики	15%	20%	30%	38%	+23%
Скорость обучения онлайн	10%	25%	40%	60%	+50%
Восстановление малого бизнеса (в процентах)	30%	55%	70%	85%	+55%
Уровень безработицы	11.2%	9.8%	7.5%	5.3%	-5.9%

Таблица 1. Статистическая информация о проблемах, возникающих при управлении изменениями, и их эффективном решении представлена в таблице ниже.

Пандемия оказала негативное воздействие на экономику Узбекистана в 2020 году, однако с 2021 года началось экономическое восстановление. В 2023 году темпы экономического роста составили 6,3%, что свидетельствует о возвращении к уровням роста, характерным для периода до пандемии.

В 2020 году доля цифровой экономики составила 15%, однако к 2023 году этот показатель вырос до 38%. Цифровые услуги и онлайн-торговля развивались стремительными темпами.

Если в 2020 году уровень онлайн-образования был очень низким, то к 2023 году этот показатель достиг 60%. Это свидетельствует о влиянии пандемии на систему образования.

Меры поддержки малого и среднего бизнеса (льготные кредиты, субсидии) привели к восстановлению бизнеса на уровне 85%.

На начало пандемии уровень безработицы составлял 11,2%, но к 2023 году он снизился до 5,3%, что отражает процесс восстановления экономики.

Таблица 2

Ключевые факторы управления изменениями во время пандемии

Фактор	Эффект	Индикатор
Быстрые меры государства	Высокий	Указы и решения Президента
Цифровая трансформация	Высокий	Стратегия «Цифровой Узбекистан – 2030»
Поддержка малого и среднего бизнеса	Средний	Льготные кредиты и субсидии
Восстановление производства	Высокий	Программы восстановления промышленности (2021-2022 гг.)
Укрепление системы здравоохранения	Высокий	Увеличение количества врачей, строительство больниц

Таблица 2. Следующий анализ был сделан в отношении наиболее важных факторов и их влияния на управление изменениями во время пандемии. Они связаны с решениями, законами и мерами, реализуемыми государством.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Посредством президентских решений и указов были реализованы оперативные меры по поддержке экономического и социального секторов в условиях пандемии. Например, «Комплексные меры по восстановлению экономики в условиях пандемии» (2020 г., Постановление № PQ-4793).

С 2020 года в Узбекистане уделяется серьезное внимание цифровой трансформации, включая проекты, реализуемые в рамках стратегии «Цифровой Узбекистан – 2030». Эта стратегия стала основой для цифровизации госуслуг и перевода бизнеса в онлайн-формат.

В целях поддержки малого бизнеса были введены меры по предоставлению льготных кредитов и субсидий, расширению сети и стимулированию экспорта. Также сформирована эффективная модель поддержки субъектов частного предпринимательства в управлении изменениями в период пандемии.

В результате пандемии произошли остановки в производственном секторе, но комплексные меры, направленные на восстановление производства, были реализованы государством.

Меры, необходимые для борьбы с пандемией, реализованы в управлении изменениями в сфере здравоохранения. В конце 2020 года были рассмотрены инициативы, направленные на строительство больниц и увеличение количества врачей для борьбы с новой инфекцией COVID-19 в Узбекистане.

Таблица 3

Социальные последствия пандемических изменений

Социальный индикатор	2020	2021	2022	2023	Изменить (%)
Уровень безработицы	11.2%	9.8%	7.5%	5.3%	-5.9%
Семьи, получающие количественную помощь	5%	15%	22%	30%	+25%
Лица, участвующие в программах социальной защиты	2 млн	4 млн.	5.5 млн	6.2 млн	+210%

Таблица 3. Социальное воздействие изменений, осуществленных в период пандемии, по следующим показателям.

Во время пандемии было потеряно рабочие места, однако благодаря экономическому восстановлению и созданию новых рабочих мест уровень безработицы снизился с 11,2% в 2020 году до 5,3% в 2023 году.

В течение пандемии значительно увеличилось количество семей, получивших материальную помощь через программы социальной защиты. К 2023 году этот показатель составил 30%.

Число людей, привлеченных к программам социальной защиты, также значительно возросло. В 2020 году менее 2 миллионов человек получали социальную помощь, а в 2023 году этот показатель составил 6,2 миллиона человек. Это отражает эффективность социальных мер и усилия государства по поддержке населения.

Ошибки и проблемы, возникающие при управлении изменениями

Ошибка/проблема	Объяснение	Эффект
Неэффективное общение	Несвоевременное и эффективное информирование об изменениях..	Неправильное распределение ресурсов.
Скептицизм и сопротивление	Различные социальные группы и организации, выступающие против изменений.	Это задерживает внедрение изменений и снижает эффективность..
Неправильное распределение ресурсов	Неопределенное распределение финансовых и кадровых ресурсов во время пандемии.	Ошибки, стагнация и несвоевременное использование ресурсов.
Ограничения на поддержку малого бизнеса	Недостаточные стимулы и финансовая поддержка малого и среднего бизнеса.	Конфликт между замедляющимся восстановлением экономики и деловым сектором.
Факторы против изменений	Нерациональное распределение трудовых ресурсов и ошибки в управлении.	Негативное влияние на рынок труда и работников.

Таблица 4. В период пандемии произошел ряд ошибок и проблем в управлении изменениями.

Из-за недостаточной эффективности коммуникации о происходящих изменениях и нововведениях в период пандемии возникло много ошибок. Это привело к неправильному распределению ресурсов, например, задержке в предоставлении социальных программ.

Во время пандемии некоторые социальные группы и организации сопротивлялись внедрению изменений, что замедлило процесс их реализации. Задержки в принятии эффективных решений органами управления подвергались жесткой критике со стороны населения и бизнеса.

Неопределенное распределение финансовых ресурсов и социальной помощи в начале пандемии стало проблемой для некоторых семей и бизнесов. Кроме того, программы государственной поддержки малого бизнеса оказались среднеэффективными.

Неадекватность поддержки малого бизнеса в начале пандемии задержала восстановление экономики. Льготные кредиты и субсидии для бизнеса были ограничены, и некоторые мелкие предприниматели были с ними не до конца знакомы. В период пандемии возникли ошибки в распределении трудовых ресурсов и управлении в производственной и сфере обслуживания, что привело к трудностям в реализации изменений.

Обеспечение согласованности в управлении изменениями и установление приоритетов имеет большое значение. Основные меры, предпринятые правительством Узбекистана в период пандемии, были направлены на следующие приоритеты:

- - Смягчение воздействия пандемии на экономику и восстановление деловой среды, развитие цифровой экономики.
- - Укрепление системы здравоохранения в условиях пандемии, строительство новых больниц и увеличение числа врачей.
- - Оказание помощи уязвимым слоям населения, восстановление рынка труда, поддержка малого бизнеса.
- Развитие цифрового образования, расширение онлайн-обучения и внедрение инноваций в систему образования.

Согласно результатам исследования, Узбекистан успешно реализовал несколько эффективных методов управления изменениями в условиях пандемии. Успехи в экономическом росте и цифровой трансформации, поддержке малого бизнеса и укреплении системы здравоохранения помогли преодолеть трудности, возникшие в начале пандемии. Однако в период пандемии также возникло множество ошибок и проблем, таких как недостаточная эффективность коммуникации и неправильное распределение ресурсов. В будущем для устранения этих ошибок необходимо разработать более четкие стратегии и меры в управлении изменениями.

Заключение

По результатам исследования, в Узбекистане в период пандемии были предприняты ряд важных мер, что значительно повысило эффективность управления изменениями. Принятые государственные решения и реализованные мероприятия (в частности, экономическое восстановление, программы социальной защиты, укрепление системы здравоохранения и цифровая трансформация) способствовали смягчению экономических и социальных последствий пандемии. Программы поддержки малого и среднего бизнеса в Узбекистане, включая льготные кредиты и социальную помощь, внесли значительный вклад в восстановление экономического роста.

Однако в процессе управления изменениями в условиях пандемии возникли и ряд проблем и ошибок. В частности, проблемы эффективной коммуникации, неправильное распределение ресурсов и сопротивление изменениям создали трудности в процессе реализации изменений.

В период пандемии возникшие противоречия и недопонимания между населением и бизнес-сектором замедлили процесс изменений, что также замедлило реализацию изменений в правильном направлении.

Тем не менее, стратегии, реализованные государством, в частности экономические пакеты помощи, укрепление системы здравоохранения и инновации в сфере образования, стали ключевыми факторами, способствовавшими преодолению трудностей в этот период.

Одним из самых важных факторов в управлении изменениями в условиях пандемии стала эффективная коммуникация. Поэтому в будущем необходимо повысить эффективность общения между государством и населением в процессе управления изменениями. Важно более активно внедрять цифровые технологии и использовать информационные системы для распространения новостей в реальном времени.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Для решения проблем, с которыми столкнулся малый бизнес в условиях пандемии, необходимо расширить меры поддержки, такие как льготные кредиты, субсидии и налоговые льготы. Также следует активно развивать цифровые платформы, а также проводить тренинги и консультационные услуги для перехода бизнеса в онлайн-формат.

Одним из ключевых приоритетов в управлении изменениями должно стать усиление социальных программ поддержки. Хотя правительство Узбекистана уже усилило социальную помощь в период пандемии, в будущем необходимо продолжать улучшать эти программы для населения и бизнеса, а также повышать их эффективность.

Для повышения готовности системы здравоохранения к пандемиям необходимо развивать инновации в медицине, внедрять новые технологии и методы.

В некоторых аспектах системы здравоохранения в период пандемии не хватало ресурсов для эффективного управления стрессом и перегрузками, поэтому в будущем нужно обеспечить готовность к таким ситуациям. В период пандемии система управления рынком труда и трудовыми ресурсами столкнулась с рядом проблем. Поэтому необходимо разработать инновационные системы управления и стратегии, которые позволят быстро реагировать на изменения на рынке труда.

Для снижения сопротивления в процессе реализации изменений важно установить эффективный контакт с социальными группами и организациями, учитывать их потребности. Важно привлекать к изменениям сотрудников и команды, готовых к переменам и способных сопротивляться им.

Использованные источники:

1. Lewin, K. (1947). *Frontiers in group dynamics: Concept, method and reality in social science; Social equilibrium and social change*. *Human Relations, 1*(1), 5-41. <https://doi.org/10.1177/001872674700100103>
2. Kotter, J. P. (1996). *Leading Change*. Harvard Business Press.
3. Указ Президента Республики Узбекистан «О мерах по поддержке различных отраслей экономики в условиях пандемии» (ПQR-4766). (2020).
4. Porter, M. E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. Free Press.
5. Christensen, C. M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Harvard Business Review Press.
6. Указ Президента Республики Узбекистан «Цифровой Узбекистан - 2030» (2019).
7. Указ Президента Республики Узбекистан «О комплексных мерах по восстановлению экономики» (2020).
8. Morgan, G. (1986). *Images of Organization*. Sage Publications.
9. Yuldashev, D., & Mirzaev, S. (2021). Управление изменениями в условиях пандемии: опыт Узбекистана. Ташкент: Академия государственного управления при Президенте Республики Узбекистан.
10. European Commission. (2020). *The digital transformation in times of crisis: Lessons learned from the COVID-19 pandemic*. Brussels: European Commission.
11. Peters, D., & Smith, M. (2021). *Managing change during a pandemic: Lessons from Germany and the USA*. *Journal of Public Administration, 49*(3), 295-312.

HISTOLOGICAL EXAMINATION OF PHOTODYNAMIC THERAPY FOR PERITONITIS.

ГИСТОЛОГИЧЕСКОЕ ИССЛЕДОВАНИЕ ФОТОДИНАМИЧЕСКОЙ ТЕРАПИИ ПРИ
ПЕРИТОНИТЕ

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Abstract: The article presents the results of experimental studies on the effects on the parietal and visceral peritoneum of intact animals and with simulated widespread peritonitis in white mongrel rats weighing 140-180 g. It was found that methylene blue at a concentration of 0.05% in intact animals at exposure of 5 minutes causes desquamation and small foci of necrosis of mesothelial cells, and in peritonitis against the background of photodynamic therapy has a beneficial effect on reparative processes due to the formation of singlet oxygen. The histological picture of the peritoneum in rats after abdominal sanitation by PDT at all stages of the study was qualitatively better than that of the representatives of the group during abdominal sanitation with 0.02% chlorhexidine solution. Based on the results of morphological studies, the authors recommend that the developed method of photodynamic sanitation of the abdominal cavity be introduced into clinical practice. Keywords: methylene blue, peritonitis, photodynamic therapy.

Relevance Despite the achievements of modern medical science, the issues of prevention, diagnosis and treatment of peritonitis remain relevant. Mortality in acute peritonitis varies from 32.4-45.5% to 50-90% [2,7,9]. Various microorganisms play an essential role in the etiology of peritonitis. In the vast majority of cases, peritonitis is the result of autoinfection, which is usually polymicrobial in nature [3,8,10]. It is known that the successful result of treatment of diffuse purulent peritonitis depends only 15-20% on the effectiveness of antibacterial therapy, and the remaining 80% are associated with adequate surgical tactics, including full sanitation of the abdominal cavity [8]. It should be noted that the question of the choice of the sanitizing solution remains one of the most controversial, the discussion about the methods of intraoperative sanitation of the abdominal cavity continues to this day [6,7], and according to Gostishchev G, it is advisable to use those solutions that can be administered parenterally [5]. In recent years, the method of photodynamic therapy has been introduced into surgical practice in connection with the bactericidal properties of photosensitizers associated with the formation of singlet oxygen against the background of photochemical reactions. There are publications on the use of photodithiazine, chlorophyllipt, dimegin, etc. as photosensitizers. The problem of the choice of a photosensitizer for PDT [10], as well as the study of their effect on the ultrastructural elements of the peritoneum in peritonitis [4,7], remains urgent. However, studies on the effect of methylene blue (MS) on the ultrastructure of the healthy peritoneum, and in experimental peritonitis on the inflamed peritoneum, we have not seen. In this regard, the purpose of our study was: to study the effect on the ultrastructural elements of the visceral and parietal peritoneum of methylene blue, 0.02% chlorhexidine, LED radiation and photodynamic therapy in normal conditions and in experimental peritonitis.

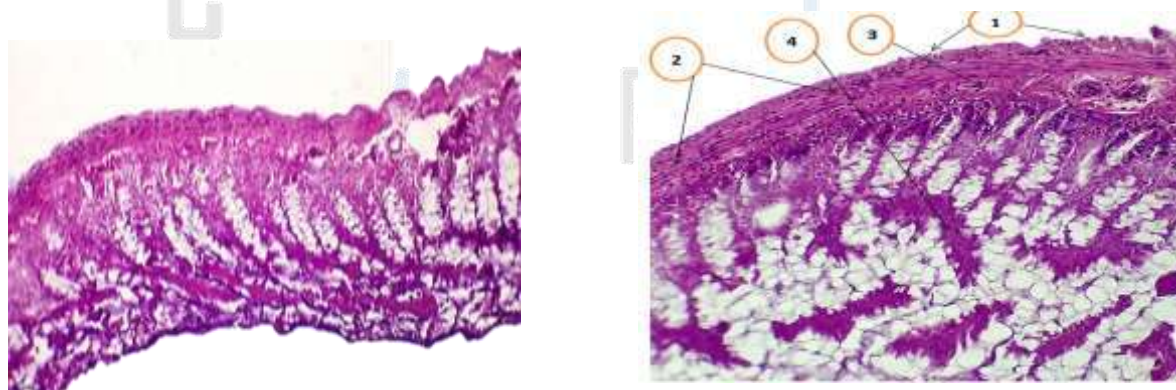
Material and methods The experiments were divided into 3 stages: 1) to study the histological structure of the visceral and parietal peritoneum in healthy experimental animals; 2) to study the effects of methylene blue, chlorhexidine and LED radiation on the intact peritoneum separately; 3) to study the effect of 0.02% chlorhexidine solution and photodynamic therapy, i.e., LED radiation and methylene blue at a concentration of 0.05% per peritoneum in experimental peritonitis in a comparative

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

aspect. To create a model of acute experimental widespread purulent peritonitis, we used the technique of Yu.Yu. Blinkov, (RF Patent No. 2338265) [1]. In the group of animals with experimental peritonitis during the operation, the abdominal cavity was drained with suction, then washed with saline. 3 ml of 0.05% methylene blue solution was poured into the abdominal cavity with a syringe and left for 5 minutes, then the solution was removed by suction and PDT was started. The laparotomic wound was sutured through all layers with silk, the animals were marked and placed in standard vivarium conditions. The animals were taken out of the experiment by decapitation immediately after their introduction into ether anesthesia. As a light source for the PDT session, a domestic-made LED installation "FDU-1" with an output power of 100 mW / cm², a wavelength of 630 ± 20 nm in a continuous red optical range was used. The energy density during the LED irradiation session was 25-35 J / cm², the exposure time was 3-5 minutes. In the control group, the abdominal cavity was sanitized by a similar method as in the main group, then 0.02% chlorhexidine solution was poured into the abdominal cavity, draining. The laparotomic wound was sutured through all layers with silk, the animals were marked and placed in standard vivarium conditions. To study the ultrastructural elements of the visceral and parietal peritoneum, the intestine with the visceral peritoneum in rats was taken in the area of the ileocecal junction (with the visceral peritoneum), the parietal peritoneum in the lateral surface of the abdomen. Pieces of 0.5 1.0 cm in size of the small and large intestines of all experimental animals were fixed in 10-12% neutral formalin with a volume of 0.5 cm³, then washed in running water, dehydrated in alcohols of increasing concentration, impregnated with xelol and embedded in paraffin. Sections were stained with hematoxylin and eosin using a conventional method, fixed with Canadian balsam, and then covered with glass. When viewing and describing the micro preparations, an electronic binocular microscope CYAN was used. Model DN-300M. With 34 MP MICROSCOPE Camera attachment, ocular objective magnification from $x = 4 \times 10 \times 0.5$, $x = 10 \times 0.25 \times 0.5$, $x = 40 \times 0.65 \times 0.5$.

Result and discussion At the first stage of our research, we studied the ultrastructural structure of the parietal and visceral peritoneum of healthy outbred white rats. The histological visceral layer consists of mesothelial cells (they originate from a single layer squamous epithelium). Mesothelial cells produce a secretion - serous fluid (synovial fluid). It provides free sliding between organs and ensures normal intestinal motility. Figure 1A shows the small intestine.



B

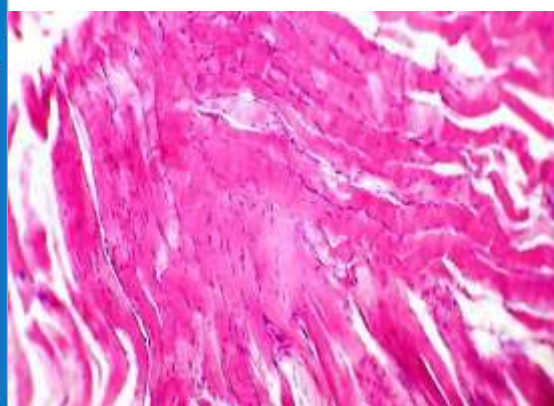
A

Figure 1A. Normal small intestine with all layers. Serous membrane, muscle and mucous membranes (with its own plate). G / E coloring. Magnification 10X10. Figure 1B. Normal small

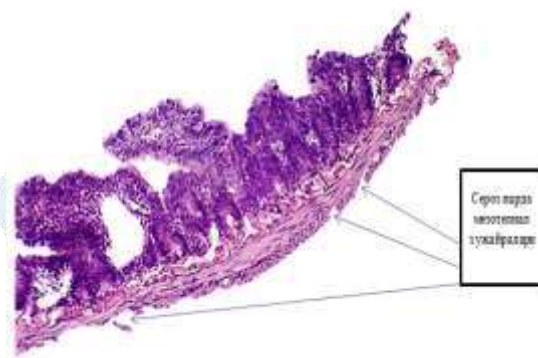
THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

intestine. Mesothelial cells of serous foliage (1), muscular membrane in the longitudinal and transverse directions (2), intrinsic plastic of the mucous membrane (3), villi of the mucous membrane (4). G / E coloring. Magnification 10X10 **Figure 1B** shows a normal small intestine with mesothelial cells; the muscularis is presented in the longitudinal and transverse directions. In the striated muscle of the anterior abdominal wall, uneven interstitial edema of the muscular plexuses is noted (Fig. 2A).



B

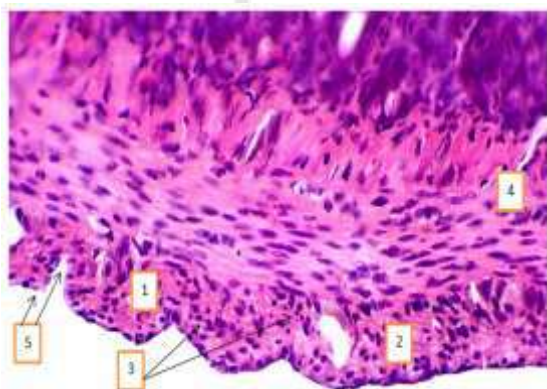


A

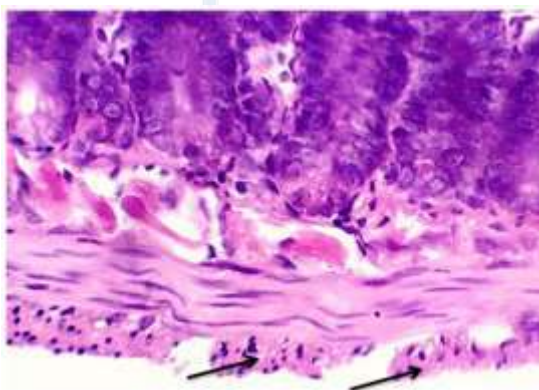
Figure 2A. The striated muscle of the anterior abdominal wall. Uneven interstitial plexus edema. The cross-stripping of muscle cells is preserved. Some cores are enlarged. G / E coloring. Magnification 10X10.

Figure 2B. Small intestine. Serous membrane of different thickness. The blood vessels are full blooded. The mesothelial cells of the serous membrane have different textures. Desquamation of focal mesothelial cells. G / E coloring. Magnification 10X10.

At stage 2, the effect of 0.05% MS solution on healthy peritoneum (visceral and parietal) of intact animals was studied. MS was injected into the abdominal cavity by puncture of the abdomen in its lower floor with a 3 ml syringe. Due to the fact that MS is used in medicine as an antiseptic and is also an oxidant, it causes some changes in organs and tissues. So, when MS is injected into the abdominal cavity, the mucopolysaccharides of the serous fluid interact and promotes the formation of acidic glycosaminoglycans. In this regard, the number of mesothelial cells decreases, the latter are labile cells (actively multiplying). As a result, MS begins to exert cytostatic and cytotoxic effects. These changes are presented in Figures 2B, 3A.



A



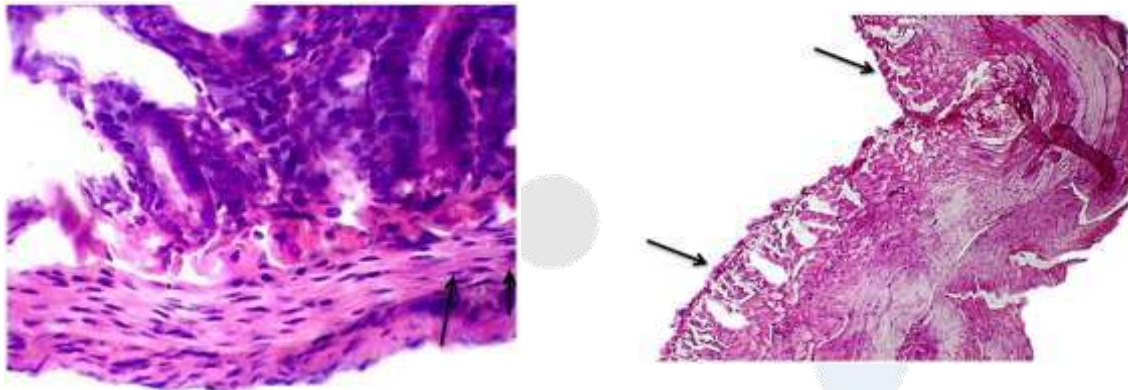
B

Figure 3A. The impact of MS on the serous membrane of the small intestine is marked by desquamation and necrosis of mesothelial cells, in defective places, proliferation and uneven arrangement of mesothelial cells are observed. **Figure 3B.** Erosive-necrotic changes in the serous

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

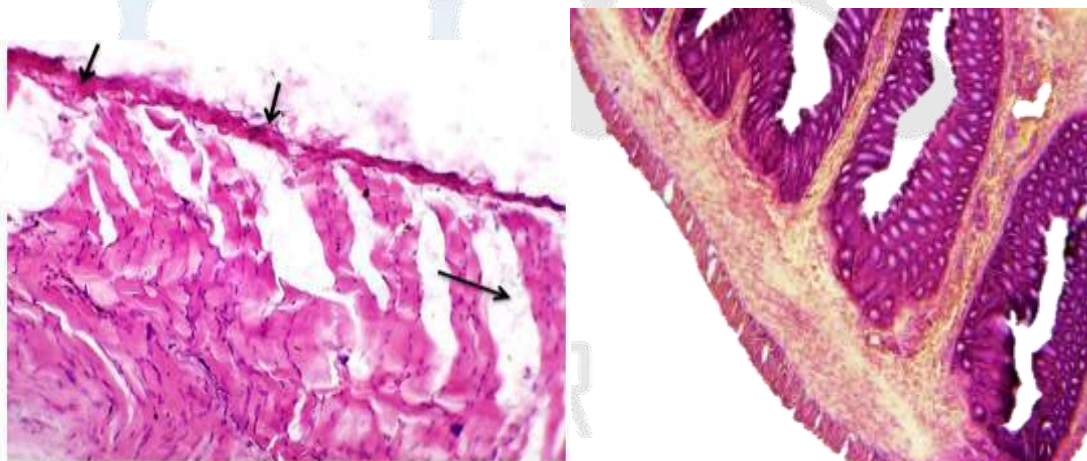
membrane of the small intestine under the influence of MS. G / E coloring. Magnification 60X10. There are multiple recovery processes in the foci of desquamation (3B, 4A). They are indicated by arrows. In the patient's own plastics, uneven edema is noted, in plastics of the connective tissue, fibrinoid swelling and focal fibrinoid necrosis. G / E coloring. Magnification 40X10.



B

Figure 4A. In the bare surfaces of the serous membrane of the small intestine, under the influence of MS, scar surfaces of transformed fibroblasts are formed. They are shown by arrows. Figure 4B. The striated muscle of the anterior abdominal wall. On the side of the parietal peritoneum, there are multiple foci of fibrinoid necrosis. Indicated by an arrow. Dystrophic changes are observed in the striated muscles, the transverse is lost. G / E coloring. Magnification 10X10.

Figures 4B - 5A show that MS on the parietal peritoneum of healthy animals cause fibrinoid necrosis; however, below ultrastructural changes in animals with peritonitis will be presented, when MS, on the contrary, enhances proliferative processes.



A

B

Figure 5A. In the parietal peritoneum (in the structures of the basal layer of fine-fibrous connective tissue), fibrinoid swelling, desquamation of mesothelial cells are noted, they are indicated by arrows, there are interstitial edema of different sizes between the muscle bundles, different staining of the dystrophic altered cytoplasm. G / E coloring. Magnification 40X10. Figure 5B. Colon after exposure to PDT with MS. The serous membrane contains many tortuous and hyperplastic mesothelial cells (1). The muscular membrane of the same texture, not pronounced interstitial edema (2). The

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

mucous membrane and its own plate are full-blooded. In the general background, the histioarchitectonics of the tissue is absolutely unchanged.

Thus, in healthy experimental animals, when MS is injected into the abdominal cavity, a focal one is observed on the surface of the serous membrane, or massive foci of desquamation are determined in places of a large accumulation of MS. In the blood vessels of the visceral peritoneum there is uneven plethora, on the basal plate there are bare areas, the transformation of macrophages into fibroblasts and the formation of adhesions, in the vessels of muscles there is uneven plethora, dystrophic changes in the muscles, in the lamina propria there is interstitial edema, foci of mucoid swelling in the vasculature. At the 3rd stage of the study, we studied morphological changes in the parietal and visceral peritoneum under the influence of PDT with MS in experimental peritonitis (Fig. 5B, 6A).

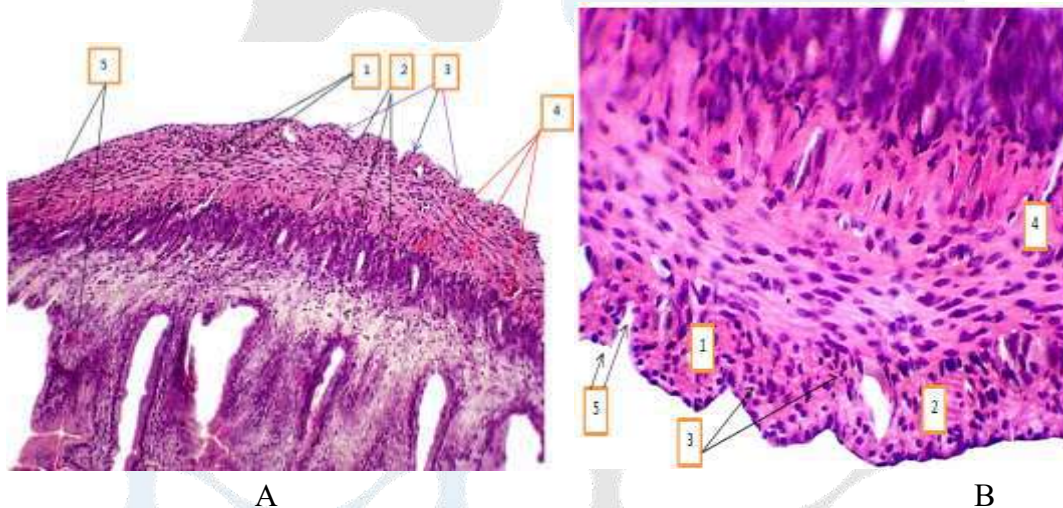


Figure 6A. Condition after PDT with MS. On the cut of the small intestine. The visceral peritoneum is of varying thickness, clearly basophilic. Interstitial edema to varying degrees (1). Full-blooded capillaries (2). Increased proliferation of (3) mesothelial cells. Basement membrane of uneven thickness (4). There is obvious plethora in the muscle layer and in the lamina propria (4). Figure 6B. Visceral peritoneum after PDT with MS. There is plethora in the vessels of the visceral peritoneum (1). Intensive proliferation of mesothelial cells of the visceral peritoneum (2). A group of not yet formed mesothelial cells (3). Congestion in the lamina propria of the muscular and mucous membranes (4). Due to proliferation, the surface is tortuous. G / E coloring. Magnification 10X10.

Thus, under the influence of PDT with MS in experimental peritonitis, the following changes were revealed: firstly, due to the release of singlet oxygen during a photochemical reaction, it can damage the membranes of any cells and cause a necrotic process. If a cell contains a large number of mitochondria, singlet oxygen is involved in the Krebs cycle and utilized by mitochondria. These properties are mainly observed in organs formed (parenchymatosis) from the epithelial cell. It is due to the fact that mesothelial cells by origin are epithelial in nature, they are not significantly damaged and due to the increase in the proliferative properties of the mesothelial layer cell, proliferative processes occur. Their number is increasing, they are multi-row and one-story (Fig. 6A, 6B); Secondly, due to the release of singlet oxygen from the sensitized molecule, the membranes of the infectious agent are damaged and, as a result, the inflammatory process fades away; Thirdly, fibroblasts, the main component of which is connective tissue, by origin, which are mesenchymal tissues, containing a small number of mitochondria, their resistance to PDT and a decrease in proliferation, the plate of mesothelial cells thickens (Fig. 6A); Fourthly, there is a decrease in the activity of the inflammatory process; in the lamina propria of the muscular and mucous membrane, a reaction of macrophageal infiltration is noted

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

(Fig. 6A, 6B). The accumulation of basophilic stained cells is determined; fifthly, the exudative phase of inflammation fades away, since reparative processes (restoration of damaged tissues) are enhanced under the influence on the surface of damaged tissues. Morphological changes in the parietal and visceral peritoneum after the introduction of 0.02% chlorhexidine solution into the abdominal cavity were as follows (Fig. 7A, 7B):

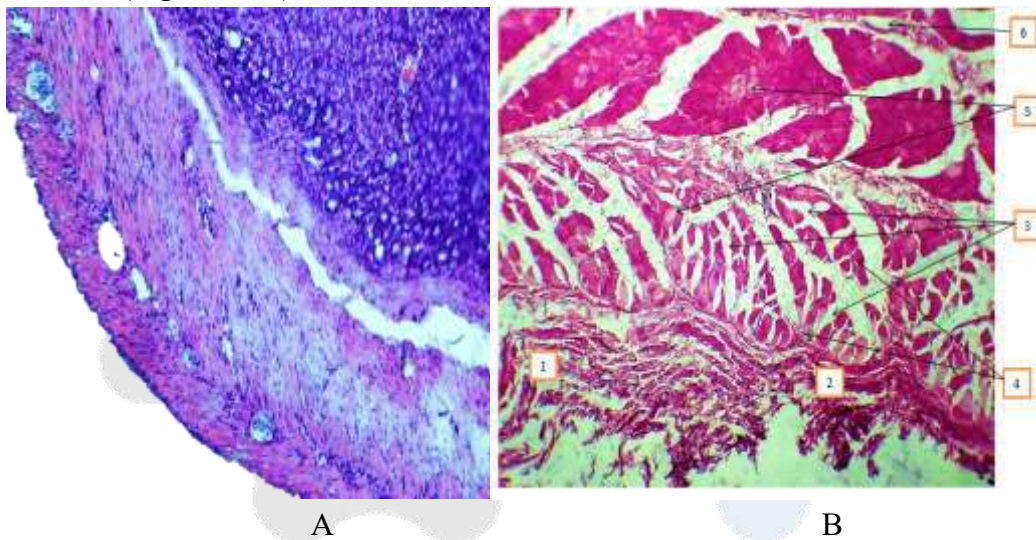


Figure 7A. Part of the colon. Serous membrane (visceral leaf), the surface is uneven, tortuous (1). There are many foci of neutrophilic infiltration between the muscular membrane (2). There is swelling in the lamina propria of the mucous membrane (3). In the mucous and submucosal layers vascular congestion. Figure 7B. The striated muscle and parietal peritoneum after exposure to 0.02% chlorhexidine solution. Components of the parietal peritoneum: destruction in fiber structures, disorganization, necrosis (1). Congestion in the vessels (2). In the interstitium of muscle tissue, uneven edema (3), in the muscle plexuses, foci of fragmentation and decomplexation are determined (4), myocytes are focally chromophobically stained (5), zones of forming thin-fibrous connective tissue are determined in interstitial spaces (6).

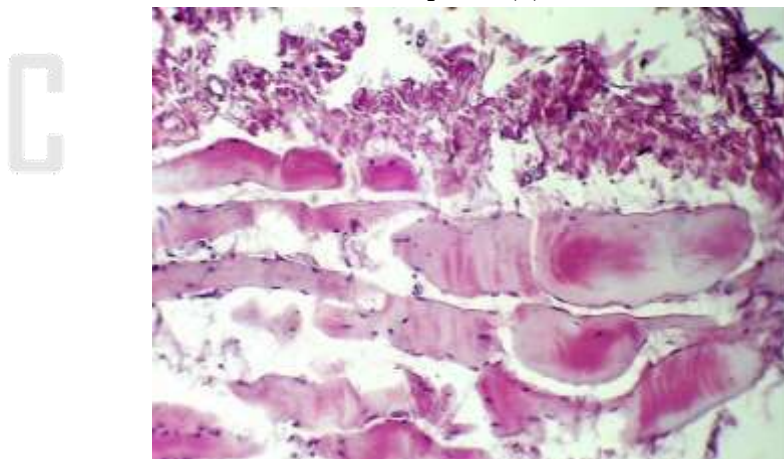


Figure 8. Changes after exposure to chlorhexidine. Disorganization and destruction of the components of the parietal peritoneum. The muscular plexuses lose their striation. The cells are chromophobically stained. The interstitium is unevenly edematous. In the interstitium, fine-fibrous connective tissue is formed. Myocyte nuclei are reduced. The foci of lymphocytic infiltration are determined. From the presented figures 7B, 8 it follows that 0.02% chlorhexidine solution in healthy

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

animals in the parietal peritoneum causes destruction in fiber structures, disorganization and necrosis. In the muscular plexuses, the zones of forming foci of fragmentation and decomposition are determined.

From the presented figures 7B, 8 it follows that 0.02% chlorhexidine solution in healthy animals in the parietal peritoneum causes destruction in fiber structures, disorganization and necrosis. In the muscular plexuses, the zones of forming foci of fragmentation and decomposition are determined. The muscular plexuses are likely to be affected due to the absorption of chlorhexidine. It should be noted that in the work of S.A. Pusty, it was shown about the toxic effect of 0.05% chlorhexidine solution on the parietal and visceral peritoneum, even on the functional state of the liver and spleen [5]. Thus, in healthy experimental animals, when MS is injected into the abdominal cavity, a focal one is noted on the surface of the serous membrane, especially in places of a large accumulation of MS, massive foci of desquamation are determined. Meanwhile, with experimental peritonitis, i.e. with a damaged peritoneum, due to the formation of singlet oxygen against the background of a photochemical reaction, cell membranes can be damaged, however, if the cell contains a large number of mitochondria, oxygen is involved in the Krebs cycle and is utilized by mitochondria. These properties are mainly observed in organs formed from the epithelial cell. Mesothelial cells are epithelial in origin and contain a large number of mitochondria, and in this regard, proliferative processes in the cells of the mesothelial layer are activated. Consequently, mesothelial cells are less susceptible to damage. The results of morphological studies clearly confirm the differences in the results of intraoperative sanitation of the abdominal cavity and treatment of experimental fecal peritonitis in rats with PDT using MS in comparison with the group with sanitation with 0.02% chlorhexidine solution. The histological picture of the peritoneum in rats after abdominal sanitation by PDT at all stages of the study was qualitatively better than in the representatives of the group after abdominal sanitation with 0.02% chlorhexidine solution. Moreover, dystrophic and destructive changes in the mesothelial layer, edema and vascular disorders in the main group are less pronounced.

Findings

1. Methylene blue and LED radiation in the red range with a wavelength of 630 ± 20 nm, with a power density of 100 mW / cm², an energy density of 25-35 J / cm², an exposure duration of 3-5 minutes, individually and in combination, cause desquamation, plethora vessels of the visceral and parietal peritoneum of intact animals, but the mesothelial cells contain a large number of mitochondria and they utilize singlet oxygen, and therefore the damage is not significant. Moreover, proliferative processes are induced in the cells of the mesothelial layer.

2. Aqueous 0.02% chlorhexidine solution, when administered into the abdominal cavity of animals, has a damaging effect on the visceral and parietal peritoneum. This is expressed in the following: destruction of fiber structures, disorganization, necrosis, plethora in the vessels, uneven edema in the muscular plexuses, and in the plexuses of Andy, foci of emerging foci of fragmentation and decomplexation are determined.

3. In conditions of acute experimental widespread purulent peritonitis, photodynamic sanitation of the abdominal cavity with methylene blue at a concentration of 0.05% with LED radiation with a wavelength of 630 ± 20 nm, with a power density of 100 mW / cm², an energy density of 25-35 J / cm², duration

4. Exposure 3-5 minutes showed that the histological picture of the peritoneum in dynamics is better with PDT in comparison with 0.02% chlorhexidine solution. The availability of methylene blue, the reliability, the simplicity of the method, the exclusion of the damaging effect of the combination of

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

photodynamic action with MS allows us to conclude that the method of photodynamic sanitation of the abdominal cavity can be introduced into clinical practice.

LIST OF REFERENCES:

1. Blinkov Yu.Yu. Pathogenetic substantiation of methods of complex treatment of widespread peritonitis (experimental clinical study) // Abstract of the thesis. Diss. Doctor of Medical Sciences-2012. -Kursk. -P.32.
2. Vlasov A.P. A new scheme for the correction of the syndrome of endogenous intoxication in emergency surgery [Text] / A.P. Vlasov, V.A. Bolotskikh, O.V. Markin et al. // Materials of the All-Russian Surgical Forum - 2019 in conjunction with the XXII Congress of the Society of Endoscopic Surgery of Russia (ROEH named after Academician V.D. Fedorov). - Moscow, 2019. --- pp. 132 - 133.
3. Gelfand B.R. et al. Ways to optimize antimicrobial therapy of abdominal surgical infections in conditions of increasing antibiotic resistance / B.R. Gelfand, B.Z. Belotserkovny, T.V. Popov // Infections in surgery. - 2015. - T. 13. - No. 2. - P. 36–47.
4. Ostrovskaya O.B., Rusin V.I., Smotrin S.M. The influence of photosensitizers on ultrastructural elements of the peritoneum in the experiment. News of surgery. -2011. T.19.-№4.-C.3-9.
5. Pusty S.A. Clinical and experimental evaluation of the use of nitrogen monoxide containing gas flow in the sanitation of the abdominal cavity with widespread purulent peritonitis // Abstract of the thesis. Candidate of Medical Sciences ...- Stavropol.-2018.-P.27.
6. Rusin V.I., Zimatkin S.M., Smotrin S.M. Histological assessment of the peritoneum of rats with experimental peritonitis and its treatment with photodynamic therapy // Journal of the Grodno State Medical Institute.-2011.-No.3.-P.21-24.
7. Kirkpatrick A.W. Closed or Open after Source Control Laparotomy for Severe Complicated Intra-Abdominal Sepsis (the COOL trial): study protocol for a random-ized controlled trial [Text] / A.W. Kirkpatrick, F. Coccolini, L. Ansaloni et al. // World J Emerg Surg. — 2018. — Vol.13. — P. 26.
8. Saveliev, V.S. Assessment of the severity of damage to the abdominal organs in peritonitis [Text] / V.S. Saveliev, B.R. Gelfand, M.I. Filimonov // Infections in surgery. - 2013. No. 2. - S. 5-9.
9. Muller V. The treatment of acute secondary peritonitis: A retrospective analysis of the use of continuous negative pressure therapy [Text] / V. Muller, G. Koplin, J. Pratschke et al. // Med Klin Intensivmed Notfmed. — 2018. — Vol.113. — №4. — P. 299 – 304.
10. Virych P.A., Nadтока O.M., Virych P.A., Ku. N.V. Photoinactivation of staphylococcus aureus in vitro by red light (660 nm) in the presense of methylene blue|| Photobiology and experimental photomedicine/ Photobiol Photomed. - 28.-2019.-p.66-73.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

THE ROLE OF UZBEKISTAN SCIENTISTS IN THE DEVELOPMENT OF SCIENCE AND CULTURE

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Aannotation: Uzbekistan is a country with a rich history and cultural heritage. This article explores the contributions of scientists of Uzbekistan to the development of science and culture.

Key words: science and culture, writers and poets.

Introduction: Uzbekistan is a country with a rich history and cultural heritage. Over the centuries, the region has been home to many prominent scientists and scholars who have made significant contributions to the fields of science and culture. This article explores the contributions of scientists of Uzbekistan to the development of science and culture.

Methods: To research this topic, a thorough review of the literature on the history of Uzbekistan was conducted. Primary sources such as historical documents, reports, and personal accounts were also consulted to gain a deeper understanding of the contributions of scientists of Uzbekistan.

Results: Scientists of Uzbekistan have made significant contributions to the fields of science and culture. One of the most prominent scientists of Uzbekistan is Abu Rayhan al-Biruni, a polymath who lived in the 10th and 11th centuries. Al-Biruni was a pioneer in the fields of astronomy, mathematics, geography, and anthropology. He is best known for his work on the determination of the radius of the earth, which he accomplished through a complex mathematical calculation.

Another notable scientist from Uzbekistan is Mirzo Ulugbek, who lived in the 15th century. Ulugbek was a mathematician and astronomer who made significant contributions to the field of trigonometry. He built an observatory in Samarkand, which was one of the most advanced astronomical observatories of its time. Ulugbek's astronomical tables, known as the Zij-i-Sultani, were used for centuries as a reference for astronomical calculations.

In the field of culture, Uzbekistan has produced many prominent writers and poets. One of the most famous writers of Uzbekistan is Abdulla Qodiriy, who lived in the early 20th century. Qodiriy was a prolific writer and journalist who wrote about social and political issues in Uzbekistan. He is best known for his novel "O'tkan Kunlar" (Days Gone By), which is considered a masterpiece of Uzbek literature. Another notable writer from Uzbekistan is Hamid Alimjan, who lived in the 20th century. Alimjan was a poet and writer who wrote about love, nature, and the beauty of life. His works have been translated into many languages and are still popular today.

In addition to the prominent scientists and scholars mentioned above, there are many other notable figures from Uzbekistan who have contributed to the fields of science and culture. For example, the mathematician and philosopher Al-Khorezmi, who lived in the 9th century, is considered the father of algebra and his book "Al-Jabr wa'l-Muqabalah" was a foundational text for the subject.

Another important figure in Uzbekistan's scientific and cultural history is Ahmad Yasavi, a Sufi mystic and poet who lived in the 12th century. Yasavi's mausoleum in Turkestan is an important pilgrimage site for Muslims, and his poetry continues to be read and appreciated today.

In the field of literature, Uzbekistan has produced many other notable writers and poets, including Chulpan, a poet known for her vivid and powerful imagery, and Fitrat, a writer and philosopher who wrote about social and political issues.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

In the field of music, Uzbekistan has a rich tradition of classical and folk music. Prominent musicians from Uzbekistan include Usta Shirin Muradov, a master of the dutar (a two-stringed instrument), and Munadjat Yulchieva, a renowned singer of traditional Uzbek music.

Discussion: The contributions of scientists of Uzbekistan to the fields of science and culture are significant and enduring. These scientists and scholars have made important contributions to human knowledge and understanding, and their works continue to inspire and inform people today.

In the field of science, the contributions of scientists of Uzbekistan have been particularly noteworthy. Al-Biruni and Ulugbek were pioneers in their respective fields, and their discoveries and insights have had a lasting impact on the development of science and mathematics.

In the field of culture, the contributions of writers and poets from Uzbekistan have been equally significant. These writers and poets have helped to shape the literary and cultural traditions of Uzbekistan, and their works continue to be read and appreciated today.

Conclusion: In conclusion, the contributions of scientists of Uzbekistan to the development of science and culture are significant and enduring. These scientists and scholars have made important contributions to human knowledge and understanding, and their works continue to inspire and inform people today. The challenge for Uzbekistan today is to build on this rich cultural heritage and history while embracing modernization and economic development in a way that is sustainable and inclusive.

REFERENCES

1. "Al-Biruni: His Times, Life, and Works" by Hakim Mohammed Said, published in 1979.
2. "Ulugbek and His Times" by S. A. Pugachenkova and V. A. Shishkin, published in 1991.
3. "The Literature of Uzbekistan: The Eighteenth and Nineteenth Centuries" by T. B. Muminov, published in 1984.
4. "The Music of Central Asia" edited by Theodore Levin, published in 2016.
5. "Ahmad Yasavi: Life and Poems" by L. N. Krymsky, published in 1961.
6. Lutfullayev Abduvali Abdunabiyevich, . (2023). INFLUENCE OF VIRTUALITY ON HUMAN SPIRITUAL WORLD. *American Journal Of Social Sciences And Humanity Research*, 3(02), 45–48. <https://doi.org/10.37547/ajsshr/Volume03Issue02-08>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

ISLAMIC FINANCE DEVELOPMENT ISSUES IN UZBEKISTAN

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Resume: The article discusses the features of the development of the Islamic banking sector, the principles of the Islamic financial institutions, as well as financial instruments that are used within the Islamic financial system. The distinctive features of Islamic and traditional banks are analyzed and the current state of development of Islamic finance in the global economy was studied. In addition, the main directions of the development of Islamic finance in the Republic of Uzbekistan are presented.

Key words: Islamic finance, islamic banking, islamic financial instruments, takaful, sukuk, murabaha, riba, maysir, gharar.

Introduction

Nowadays, an interest is increasing in the topic of the functioning of the Islamic financial system, which developing dynamically and is conquering the world financial space. The activities of Islamic financial institutions are becoming more diversified and complex. Opportunities, potential and competencies of Islamic financial organizations are expanding to organize and support large-scale transactions. According to the World Bank, islamic financial assets are currently estimated at roughly \$4 trillion, covering bank and non-bank financial institutions, capital markets, money markets and insurance. In addition, the Islamic finance network is rapidly developing all over the world, and it is one of the areas that contain innovative financing mechanisms.

Legislation on Islamic finance has been introduced in about 60 countries around the world, including three Central Asian states: Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan[1].

In this regard, currently was adopted the Decree of the President of the Republic of Uzbekistan "On the strategy "Uzbekistan-2030"". In this strategy, the task was set to introduce criteria and procedures for Islamic financing in at least 3 commercial banks, as well as the formation of the legislative framework for Islamic financing. The adoption of this Decree will first of all help to interest the population in Islamic finance, as well as the introduction and development of Islamic financial products in financial organizations of the Republic of Uzbekistan [2].

Literature review

World-renowned scientist Muhammad Taqi Usmoni noted in his scientific publications, that Islamic finance refers to how businesses and individuals raise capital in accordance with Sharia, or Islamic law. It also refers to the types of investments that are permissible under this form of law. Islamic finance can be seen as a unique form of socially responsible investment [3].

Gambeeva Yulia Nikolaevna and Medvedeva Svetlana Nikolaevna in their scientific article noted the foundations and trends in the development of the Islamic finance system, the principles of Islamic financial institutions, as well as financial instruments that are used within the Islamic financial system. This paper also analyzes the distinctive features of Islamic and traditional banks [4].

In the research carried out by O.Astanakulov, we see that in Islamic finance, priority is paid to the Institute "bank". The following points were expressed in these studies: "Islamic finance system - Islamic law, in other words, is a banking system with the principle of organization and functioning under Sharia law, that is, all practices of this type of bank, such as deposit or financing, will also be in accordance with Sharia guidelines [5].

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Scientist Tursunov Anvar noted in his dissertation, that Islamic Finance is a term that includes a wide range of financial products and services. In many ways Islamic Finance products resemble conventional products. This is not surprising because their basic objectives are the same: to facilitate investment by someone who has money, used by someone who needs money [6].

Methodology research

Islamic finance plays an important role in the development of the country's national financial sector. In particular, an important place is occupied by the introduction in Uzbekistan of new promising directions for the development of the securities market, alternative instruments of the Islamic financial securities market, increasing the investment attractiveness of the state, as well as Islamic financing of banking products. Therefore, the scientific article widely uses induction and deduction, systematic and comparative analysis, graphical presentation and economic and statistical methods in the development of scientific conclusions and recommendations based on the study of Islamic finance and the formation of the main directions of development of Islamic finance in the Republic of Uzbekistan.

Analysis and results

Islamic banking is a form of banking based on Islamic principles. Basically, in Islamic banking it is not allowed to pay and receive interest but rather it is based on profit sharing. Islamic banks focus on generating returns on investments through investment tools that are “Sharia” compliant.

The issue of introducing Islamic finance and Islamic banking services into commercial banks has been raised for many years. It is necessary to introduce additional legislation for the comfortable operation of the Islamic finance system in the country's banking system. This procedure diversifies the list of banking services for clients. Many residents of the country would like to use the services of Islamic finance. The issue of increasing the financial literacy of the population is also on the agenda.

There are different kinds of restrictions in Islamic finance, such as riba, gharar and maysir. The prohibition of interest or usury, which is considered exploitative and unjust, is known as riba. Gharar is an Islamic prohibition against speculative or uncertain financial transactions. Maysir prohibits gambling or gambling entertainment.

“The fact is that the level of financial literacy among the population of the country is rather low. Majority of people know something about ordinary banking services, but practically nothing about Islamic finance. This topic is especially relevant in the context of the development of financial technology. It is necessary to create a certain potential and increase the financial literacy of the population. With an increase in the financial literacy of the population, it will be much easier to introduce Islamic banking”.

There are some major differences between Islamic banking and conventional banking systems (table 1).

Table 1.

Key differences between conventional and islamic banking[7]

Conventional Banking System	Islamic Banking System
INTEREST (RIBA)	
Conventional banks operate on traditional financial models including interest-based transactions	Islamic banking is based on the principles of Islamic or Muslim law, which

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

	discourages usury (Riba) and promotes risk sharing
PROFIT AND LOSS SHARING	
The bank earns interest on loans and pays interest on deposits.	Profit and loss are shared between the bank and the customer.
RISK SHARING	
The customer bears the risk.	Risk is shared between the bank and the customer.
COMMUNITY WELFARE	
No such ethical restrictions are imposed.	Financial transactions must comply with ethical standards and contribute to the welfare of the community.
INVESTMENT RESTRICTIONS	
There are no restrictions on the type of investment.	Investments in industries deemed Haram (forbidden) – including those related to alcohol, pork, and gambling or maisir, among others – are strictly disallowed.
CREDIT BASE	
Often interacting with non-physical assets, conventional banking facilitates the generation of credit.	Islamic finance promotes asset-backed financing and encourages real Islamic economic activities.
PRICING OF FINANCIAL PRODUCTS	
The pricing of financial products is often based on the prevailing market interest rate.	The determination of the cost for financial products is linked directly to an underpinning asset, commodity, or specified project.
MONEY CLASS	
Money is a product besides a medium of exchange and a store of value.	Real Asset is a product. Money is just a medium of exchange.
VALUE OF MONEY	
Time value is the basis for charging interest on capital.	Islamic finance does not recognize the time value of money. Profit on the exchange of goods & services is the basis for earning profit.
REAL ASSETS	

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

The expanded money in the money market without backing the real assets results in deficit financing.	In Islamic banking, the financial equilibrium or a balanced budget results from the non-expansion of money.
LOSS SHARING	
Interest is charged even in the case, the organization suffers losses. Thus no concept of sharing loss.	Loss is shared when the organization suffers a loss.

Islamic banking refers to a system of banking, which is consistent with Islamic law, also called “Shari’a”, and guided by Islamic economics. In particular, Islamic law prohibits the payment and collection of interest, also commonly called “Riba” (usury). The main argument against interest is that money is not used as a commodity with which to make a profit but that it should be earned on goods and services only, not on control of money itself

The total volume of Islamic Banking and Finance assets grew to \$US 4 billion globally. Iran, Saudi Arabia and Malaysia were the largest markets of the 60 countries that reported Islamic financial assets, with all three recording more than \$US 500 billion in assets (figure 1).

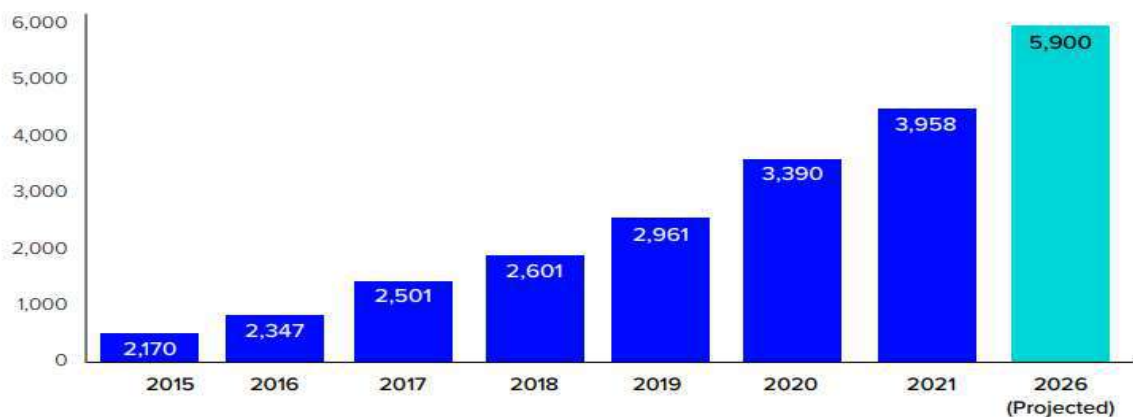


Figure 1. Islamic Finance Assets Growth (2015-2021, US\$ Billion) [8].

The Global Islamic Finance market can be segmented by Financial Sector into Islamic Banking, Islamic Insurance ‘Takaful’, Islamic Bonds ‘Sukuk and Islamic Funds. By Geographic region Islamic Finance market can be segmented into Gulf Co-operation Council (Saudi Arabia, Kuwait, UAE, Qatar, Bahrain, and Oman), the Middle East and North Africa (Iran, Egypt, Rest of MENA), South Asia, and Asia-Pacific (Malaysia, Indonesia, Brunei, Pakistan, Rest of South Asia and Asia-Pacific), Europe (United Kingdom, Ireland, Italy, Rest of Europe).

Malaysia is at the forefront in the development of Islamic banking, Islamic capital market and takaful (Islamic insurance). It has a strong and comprehensive Islamic financial system with a robust business driven regulatory regime and legal framework. Malaysia is one of the leading global hub for Islamic finance.

Bahrain is recognized as the global leader in Islamic finance, ranking 2nd in MENA and 4th globally for Islamic finance development (ICD 2021). We set the benchmark early for Islamic banking

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

regulation by establishing the Bahrain Islamic Bank in 1978, and have nurtured the concepts, rules, and standards of Shari'a banking compliance in Islamic banks ever since. In this way, we are able to cater to the needs of both mainstream Islamic finance and the new breed of FinTech entrepreneurs who offer Shari'a-compliant products. Our continued focus on innovation and customer service has made Bahrain a top destination for Islamic finance development.

The growth of Islamic finance industry in CIS countries is slower than other but it is attracting the attention of the global international banking industry due to the rising opportunities in this region. Islamic banking will grow substantially in CIS countries in the next five years from a low base, if their governments took initiatives to boost this sector. Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan can be main players to lead this expansion of Islamic banking & finance in CIS. Uzbekistan is not only enriched with gas, oil and other natural resources but, along with this, it has been the center of knowledge and Islam for a long time. Uzbekistan has very low penetration of Islamic finance, despite a large Muslim population and 100% literacy rate.(figure 2).

Nowadays the demand of Islamic banking services is rising day by day especially in our country. Uzbekistan has all the ingredients for the introduction of Islamic finance – great Islamic heritage and roots, sizeable population, deep interest in Islamic finance, potential to disseminate successful Islamic finance experience to other countries of the region, political stability, good infrastructure, 100% literacy as well as real economic challenges and financial exclusion for a considerable stratum of society driven by faith motives (figure 2).

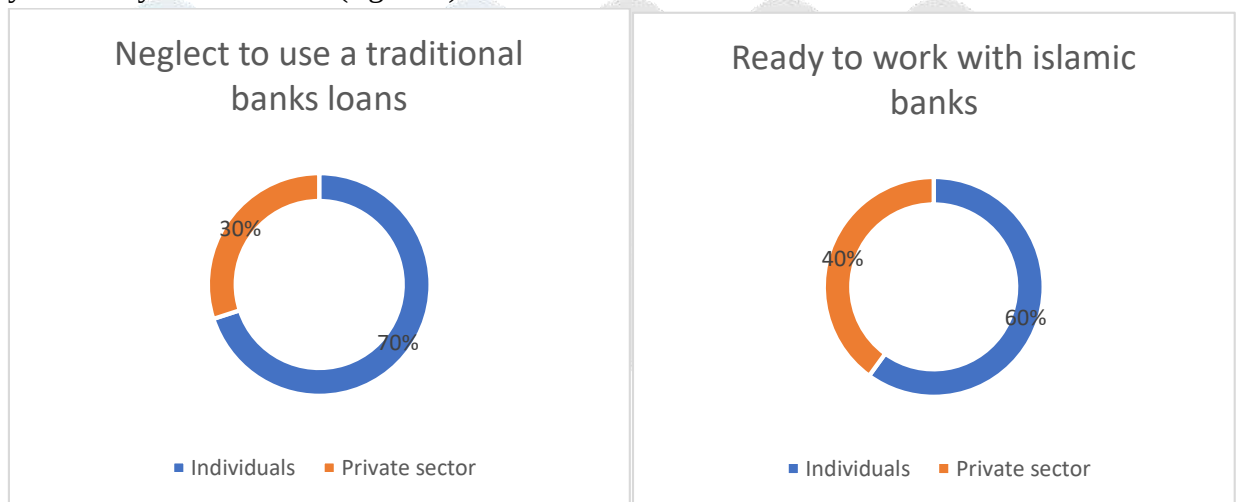


Figure 2. Demand for Islamic financial services in Uzbekistan[9]

The interest for Islamic finance is gradually growing in Uzbekistan. 93% of Uzbekistan's population is Muslims but no local bank nor any foreign institutions offering Islamic banking and capital markets services other than the IDB and ICD. Although more than 9 banks get grant from ICD on Mudarabah base to start Islamic Banking but still waiting for legislation to be passed which allow them to work under Shariah. Foreign institutions are not prevented from engaging in the market without being registered in Uzbekistan provided they satisfy requirements contained in CBU Regulation. In May 2019 the Government of Uzbekistan issued a draft resolution to create infrastructure for Islamic banking and finance in order to foster alternative financing opportunities, expand the range of banking, financial services and to open the doors for Islamic investors from the Middle East. The Government of Uzbekistan is also planning to introduce the issuance of different tenure Sukuk (Islamic Bonds) to

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

address the long-term and short-term liquidity and investment requirements of Islamic finance industry. Many educational institution start offering Islamic Finance education to its senior students. Many Insurance and leasing companies are also working to start Takaful and Ijarah operations to meet the need of the Islamic financial market in the country [10].

The promotion of Islamic finance industry in Uzbekistan will also attract the Foreign Direct Investment (FDI) in the country which will strengthen the economic growth of the country and will reduce the headcounts living under the poverty line.

For Islamic finance to gain an institutional position following actions need to be taken:

- It must be acknowledged at the legislative level.
- An awareness campaign among people to promote the perception of Islamic finance and Islamic banking as interest-free alternatives to conventional banking and financial services must be started.
- Amendments would also be required to the Civil Code, the Tax Code and the major banking and investment laws to address this matter systemically.
- Commercial banks should be allowed to open Islamic windows or Islamic banking institutes should be allowed to set up independently from conventional banking.
- To introduce Islamic banking and Islamic finance instruments, new rules must be formulated or amendments in existing ones should be done to accept the Islamic laws and procedures.
- Some Islamic Finance education and training courses at national level should be introduced to increase the basic and practical knowledge of people so that they can adopt this new change [11].

Despite the fact that Islam is a major religion, the Islamic financial sector in Uzbekistan is still relatively underdeveloped compared to its neighbors, although the country has great potential for development. This has been acknowledged by experts from major international financial institutions (Islamic Development Bank Group (IsDB), Islamic Corporation for the Development of the Private Sector (ICD), Asian Development Bank, etc.). However, in recent years, some work has been done in this direction in cooperation with international financial institutions.

Today, various measures are being taken in our country to introduce and develop Islamic financial services in financial organizations. For example, the attraction of credit lines for the development of the private sector ("Murabaha"-payment by instalments) through the International Islamic Trade Finance Corporation. These financial lines were allocated to commercial banks as well, "Trustbank", "Infin Bank", "Asaka bank" and "Uzpromstroybank".

Small and medium-sized businesses provide 81% of employment in Uzbekistan, and over the past 10 years, they have contributed to the country's gross domestic product (GDP) growth at an average annual rate of more than 5%. Uzbekistan is becoming the fastest growing economy in Central Asia. The mutually beneficial relationship between these organizations and the government has paved the way for Islamic finance to enter the Uzbek market and has taken the first step in this area [12].

According to a survey conducted by the United Nations Development Program in early 2020 on the analysis of Islamic financial products in Uzbekistan and a relevant survey, the main reasons for not using bank loans are religious beliefs, high-interest rates and the complexity of lending. If Islamic financial institutions are established in the country, the majority of respondents in the above survey noted that they can use the services of these institutions. Even traditional banks have expressed their views on the establishment of Islamic financial institutions in Uzbekistan, the emergence of fair and transparent competition in the financial sector, which will lead to an increase and diversification of investment flows into the country.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

As a result of this work, Uzbekistan will undoubtedly become a leader in the field of Islamic finance among the CIS countries. The Islamic financial services sector will be an important factor, and foundation for the bright future of Uzbekistan, which will increase the interest of foreign investors in the country, which reflects the deep roots of Islam in its culture, and the government will take full advantage of this opportunity.

Conclusion

Summarizing the above analysis, it can be pointed out that the establishment of Islamic finance is an important factor in the development of the Uzbek economy. Islamic finance is a new direction for the economy of Uzbekistan.

The emergence of alternative financial products contributes to the expansion of the population's access to financial services. However, existing expectations can be significantly distorted due to the lack of knowledge and experience of potential clients in the field of Islamic finance, imperfections in banking and financial legislation.

There must be a legal basis for the Islamic banks to start operating and carry out their activities at their fullest in Uzbekistan. Hence, as mentioned above, the activities of Islamic finance have their own characteristics and differ from traditional banks. At the same time, it should be noted that after the address of the President Shavkat Mirziyoyev to the Oliy Majlis (Parliament) and laments that it is the high time to create a legal framework of Islamic finance and the President informed that from 2022 year the new law "On non-bank credit institutions" will include the concept of Islamic finance. We can say that with the adoption of this long-awaited law in Uzbekistan, Islamic banks will have the opportunity to fully implement their activities. At present, officials should also keep in mind that the introduction of Islamic financial services in Uzbekistan will be carried out by parallelly solving a number of problems related to the lack of human resources, and the need on increasing literacy among prominent consumers.

References:

- [1] ICD-REFINITIV Islamic Finance Development Report 2022
- [2] Decree of the president of the Republic of Uzbekistan "On the strategy of Uzbekistan — 2030" dated September 11, 2023 No. 158 DP-158
- [3] Muhammad Taqi Usmani "an Introduction to Islamic finance" Study guide. 2021 y. page 6
- [4] https://www.internationalinvestor.com/chile/sectors/metals-mining/ps_if_projected-growth-of-islamic-finance-assets-to-2021/
- [5] Astanakulov O. Islom moliya asoslari: taraqqiyot bosqichlari, istiqbollari. "Iqtisodiyot va innovatsion texnologiyalar" ilmiy elektron jurnali. №5, sentyabr-oktyabr, 2021 y.
- [6] <https://cyberleninka.ru/article/n/islom-moliyasi-va-banki>
- [7] Compiled by the author
- [8] ICD-REFINITIV Islamic Finance Development Report 2022
- [9] Analysis of Islamic Financing Instruments in Uzbekistan" –UNDP Survey conducted in 2022
- [10] <https://alhudacibe.com/pressrelease>
- [11] <https://www.isdb.org/uzbekistan>
- [12] <https://m.kun.uz/en/news/2020/08/04/uzbekistan-can-become-a-cis-leader-in-islamic-finance>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

KEKSA OSHDAGI FIZIOLOGIK O'ZGARISHLAR ФИЗИОЛОГИЧЕСКИЕ ИЗМЕНЕНИЯ В ПОЖИЛОМ ВОЗРАСТЕ PHYSIOLOGICAL CHANGES IN OLD AGE

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Abstract: This article analyzes the physiological changes of old age and how they affect the human body. First of all, external changes such as skin loss of elasticity and moisture, wrinkles and hair loss are considered with age. Musculoskeletal changes, including sarcopenia and reduced mobility due to osteoporosis, and increased fracture risk are discussed. Changes in the cardiovascular system are associated with a decrease in the strength of the heart, hardening of the blood vessels and an increase in the risk of hypertension. In the respiratory system, a decrease in the elasticity of the lungs and a decrease in the efficiency of gas exchange are noted.

Changes in the nervous system are also analyzed in the article, and problems such as cognitive abilities, memory and reflexes weakening and increased risk of dementia due to the reduction of neurons in the aging process are highlighted. Particular attention is paid to digestive problems, changes in hormones and the endocrine system, in particular, the reduction of sex hormones and the violation of insulin production. The last section describes the weakening of the immune system and increased susceptibility to infections.

In the conclusion of the article, it is emphasized that a healthy lifestyle, proper nutrition and regular physical activity play an important role in slowing down the aging process, as well as the need for regular medical examinations to monitor the aging process and alleviate problems

Annotatsiya: Mazkur maqolada keksa yoshdagi fiziologik o'zgarishlar va ular inson organizmiga qanday ta'sir ko'rsatishi tahlil qilinadi. Birinchi navbatda, yosh o'tishi bilan terining elastiklik va namlikni yo'qotishi, ajinlar va soch to'kilishi kabi tashqi o'zgarishlar ko'rib chiqiladi. Mushak-suyak tizimidagi o'zgarishlar, jumladan, sarkopeniya va osteoporoz tufayli harakatchanlikning pasayishi va suyak sinish xavfi ortishi kabi muammolar muhokama etiladi. Yurak-qon tomir tizimidagi o'zgarishlar yurak kuchining pasayishi, qon tomirlarning qattiqlashishi va

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

gipertoniya xavfini oshirishi bilan bog'liq. Nafas olish tizimida esa o'pka elastikligining kamayishi va gaz almashinuvi samaradorligining pasayishi e'tiborga olinadi.

Maqolada asab tizimidagi o'zgarishlar ham tahlil qilinib, keksayish jarayonida neyronlarning kamayishi natijasida kognitiv qobiliyatlar, xotira va reflekslarning zaiflashishi va demensiya xavfi ortishi kabi muammolar yoritiladi. Ovqat hazm qilish tizimidagi qiyinchiliklar, gormonlar va endokrin tizimda sodir bo'ladigan o'zgarishlar, xususan, jinsiy gormonlarning kamayishi va insulin ishlab chiqarilishi buzilishiga alohida e'tibor qaratiladi. Oxirgi bo'limda immun tizimining zaiflashishi va infeksiyalarga sezgirlikning oshishi tavsiflanadi.

Maqola xulosasida esa sog'lom turmush tarzi, to'g'ri ovqatlanish va muntazam jismoniy faollik qarish jarayonini sekinlashtirishda muhim rol o'ynashi, shuningdek, keksayish jarayonini kuzatish va muammolarni yengillashtirish uchun muntazam tibbiy ko'riklar zarurligi ta'kidlanadi.

Аннотация: В данной статье анализируются физиологические изменения старости и то, как они влияют на организм человека. В первую очередь с возрастом учитываются внешние изменения, такие как потеря эластичности и влажности кожи, морщины и выпадение волос. Обсуждаются скелетно-мышечные изменения, включая саркопению и снижение подвижности из-за остеопороза, а также повышенный риск переломов. Изменения сердечно-сосудистой системы связаны со снижением силы сердца, уплотнением сосудов и увеличением риска развития гипертонии. В дыхательной системе отмечают снижение эластичности легких и снижение эффективности газообмена.

В статье также анализируются изменения в нервной системе и освещаются такие проблемы, как ослабление когнитивных способностей, памяти и рефлексов, а также повышенный риск развития деменции из-за сокращения нейронов в процессе старения. Особое внимание уделяется проблемам пищеварения, изменениям гормонов и эндокринной системы, в частности, снижению половых гормонов и нарушению выработки инсулина. В последнем разделе описывается ослабление иммунной системы и повышенная восприимчивость к инфекциям.

В заключении статьи подчеркивается, что здоровый образ жизни, правильное питание и регулярная физическая активность играют важную роль в замедлении процесса старения, а также необходимость регулярных медицинских осмотров для наблюдения за процессом старения и облегчения проблем.

Key words: Old age, physiological changes, skin elasticity, sarcopenia, osteoporosis, cardiovascular system, nervous system, cognitive abilities, immune system, endocrine system, hormonal changes, digestion, aging process, healthy lifestyle, reduction of muscle mass.

Kalit so'zlar: Kexsa yosh, fiziologik o'zgarishlar, teri elastikligi, sarkopeniya, osteoporoz, yurak-qon tomir tizimi, asab tizimi, kognitiv qobiliyatlar, immun tizimi, endokrin tizim, gormonal o'zgarishlar, ovqat hazm qilish, qarish jarayoni, sog'lom turmush tarzi, mushak massasining kamayishi.

Ключевые слова: Старость, физиологические изменения, эластичность кожи, саркопения, остеопороз, сердечно-сосудистая система, нервная система, когнитивные способности, иммунная система, эндокринная система, гормональные изменения, пищеварение, процесс старения, здоровый образ жизни, снижение мышечной массы.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Relevance of the topic: The relevance of physiological changes in old age is demonstrated in the article through the following aspects:

1. Population aging: In many countries, the composition of the population is changing, and the number of elderly people is increasing. This demographic change makes the issues of maintaining the health of elderly people and providing them with appropriate care urgent.
2. Burden on the health care system: Chronic diseases such as cardiovascular disease, dementia, diabetes and osteoporosis are common among older people. These diseases are a great burden not only on human quality, but also on the healthcare system. Therefore, understanding the physiological changes of old age and measures to eliminate them are important today.
3. Prevention and healthy aging: Studying the physiology of the aging process can help determine the preventive measures necessary for healthy aging and prevention of chronic diseases. This allows many people to live longer and improve their quality of life.
4. Advances in Research: In recent years, a lot of research is being done in the medical, pharmaceutical and technological fields to slow down the aging process and support healthy aging. By providing a better understanding of the aging process, these studies pave the way for the development of new prevention and treatment methods.
5. Social and economic impact: Supporting the health of older people helps them lead active lives, which contributes to increased economic and social activity in the community where they live. This topic is also relevant for the development of society.

Thus, the study of physiological changes associated with aging is of great importance today and is an urgent issue for medicine, health care system and society.

Purpose of the study: The main purpose of the research in this article is to analyze the physiological changes of old age and determine how they affect various systems and organs of the human body.

The specific objectives of the study include:

1. Studying changes in body systems: Identifying physiological changes that occur in the skin, musculoskeletal, cardiovascular, nervous, respiratory, digestive, and immune systems and their impact on the aging process analysis.
2. Exploring the possibilities of healthy aging: Identifying ways to reduce negative physiological changes that occur during the aging process, to ensure healthy aging with the help of a healthy lifestyle and preventive measures.
3. Contribute to the development of health care and preventive measures: Assist the health sector to develop recommendations for medical and preventive measures to prevent and alleviate problems associated with changes in old age.

Research Findings: The following are key findings from scientific research on physiological changes in aging:

1. Changes in the nervous system

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

According to research, the volume of gray matter in the brain decreases by about 0.2-0.5% annually in people over 65 years old, which leads to a decline in cognitive abilities, in particular, short-term memory and quick thinking.

The risk of Alzheimer's disease doubles after age 65 and doubles again every 5 years (Alzheimer's Association, 2020).

2. Changes in the cardiovascular system

According to research conducted by the American Heart Association, the risk of hypertension increases by 60% in people over the age of 60, which significantly increases the risk of coronary heart disease and stroke (AHA, 2019).

The heart rate of elderly people slows down by an average of 10-15%, which reduces blood pressure and cardiac output.

3. Changes in the respiratory system

Research shows that in people over 65, lung volume and elasticity decrease by about 1% each year, causing breathing problems and reduced oxygen delivery to the body (Journal of Gerontology, 2018).

Among the elderly, the risk of developing pneumonia is 8-10 times higher than that of young people, which is due to the weakening of the immune system.

4. Changes in the immune system

In studies of the immune system, T-cell numbers and activity decrease by 30-50% in people over 70 years of age. This makes them significantly more vulnerable to infectious diseases (Aging Cell, 2019).

Elderly people are 5-10 times more likely to get the flu than younger people, and their death rate from the flu is also higher.

5. Changes in the endocrine system

According to research, growth hormone production decreases by about 15% per year in people over the age of 60, which causes a decrease in muscle mass and fat accumulation (Endocrine Society, 2018).

Also, due to menopause and andropause, estrogen and testosterone levels decrease, which reduces bone density by 10-15%.

6. Changes in the digestive system

As we age, secretion and peristalsis in the gastrointestinal tract slow down, increasing the risk of constipation by 50% (Digestive Diseases Research, 2020).

In addition, acid production in gastric juice decreases, which reduces the ability to absorb vitamin B12 and other necessary substances.

Conclusion: the conclusions of the article are as follows

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

1. The natural process of aging: Physiological changes in old age are part of the natural aging process of the human body and have some negative effect on all major systems and organs. This process causes changes in the skin, musculoskeletal, cardiovascular, respiratory, nervous, digestive, endocrine and immune systems.

2. Quality of life and health care: These physiological changes negatively affect a person's overall quality of life and health. Therefore, it is important to understand the aging process and develop ways to support health. Factors such as regular medical checkups, a healthy diet, physical activity, and stress management play a major role in improving the quality of life for older adults.

3. Support for healthy aging: A healthy lifestyle and preventive measures can help reduce the negative changes that occur during the aging process. Health care systems also need to focus more on older people to support healthy aging.

4. Importance of scientific research: Research in the field of studying the physiology of the aging process is important not only for prolonging human life, but also for improving the quality of life and prevention of chronic diseases. Therefore, research on this topic is relevant in finding ways to manage the healthy aging process in the future.

In general, the article covers issues such as the impact of physiological changes in old age on the body, meeting the needs of the elderly in health care, and providing opportunities for healthy aging. This is important for supporting healthy and active aging in society.

7. Changes in the musculoskeletal system

Muscle mass decreases by 1-2% per year in people over 70 years old. This leads to loss of mobility and balance, while increasing the risk of falls (Journal of Musculoskeletal Health, 2020).

The risk of osteoporosis increases by an average of 30-40% in postmenopausal women, which leads to increased bone fragility and fractures.

These goals are aimed at providing the concepts necessary to support the health of older people and improve their quality of life, and to make the issues of healthy aging relevant for society.

References:

2. Alyaviya O.T., Nishanova A.A., Kadirov Sh.K.: Cardiovascular physiology
 3. <https://studfile.net/preview/16840266/page:28/>
 4. Alyaviya O.T, Nishanova A.A, Kadirov Sh.K: General physiology of the central nervous system
 5. https://uz.wikipedia.org/wiki/Blood_circulation
 6. Alyaviya O.T, Nishanova A.A, Kadirov Sh.K: Hormonal control of physiological functions
- Links:
1. <https://cyberleninka.ru/article/n/measures-of-conversation-with-elderly-and-elderly-aged-people-and-features>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

2. Alyaviya O.T., Nishanova A.A., Kadyrov Sh.K.: Cardiovascular physiology.

3. <https://studfile.net/preview/16840266/page:28/>

4. Alyaviya O.T, Nishanova A.A, Kadyrov Sh.K: General physiology of the central nervous system.

5. https://uz.wikipedia.org/wiki/Blood_circulation

6. Alyaviya O.T, Nishanova A.A, Kadyrov Sh.K: Hormonal control of physiological function.

References:

1. <https://cyberleninka.ru/article/n/measures-of-conversation-with-elderly-and-elderly-aged-patients-and-features>

2. Alyaviya O.T., Nishanova A.A., Kadyrov Sh.K.: Cardiovascular physiology

3. <https://studfile.net/preview/16840266/page:28/>

4. Alyaviya O.T, Nishanova A.A, Kadyrov Sh.K: General physiology of the central nervous system

5. https://uz.wikipedia.org/wiki/Blood_circulation

6. Alyaviya O.T, Nishanova A.A, Kadyrov Sh.K: Hormonal control of physiological functions

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THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

ENHANCING THE EFFECTIVENESS OF INTERACTIVE METHODS IN TEACHING HIGH SCHOOL PHYSICS

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Abstract: In this article, you can get acquainted with the information about increasing the efficiency of the use of pedagogical technologies necessary for teaching science in general secondary schools, as well as the advantages of methods that can be used in training classes.

Keywords: Veer, cluster, BBB, FSMU, resource, interactive.

Introduction

Today, the formation of new social relations in our society, the integration of education into the world educational system, the development of democratization and progressive processes presuppose the need for a new approach to modern pedagogical technologies in the educational process. When developing new approaches, it is advisable to distinguish and reshape certain methods that are priority for teaching science. On this path, it will be permissible to dwell on the state of effectiveness of certain methods in teaching physics.

Research methodology

In fact, there are a number of attitudes towards teaching physics in general secondary schools. The reason is, it is important that there are also laboratory exercises in science. In order to interest children in science in the school system, as well as solve behavioral puzzles through laboratory equipment, the fact that laboratory equipment in schools does not meet modern demand or does not exist at all is a challenge for the teacher. In these situations, it is definitely advisable to use the methods presented below.

The use of interactive methods in teaching high school physics helps students become deeply involved in the learning process, increases their interest in acquiring knowledge, and encourages their active participation. These methods allow students to apply theoretical knowledge in practice, develop independent thinking in solving problems, and shape skills in collaboration and communication.

“Veer” method

This method is aimed at studying complex, multidisciplinary, as much as possible topics of a problem nature. The essence of technology is that information is provided on different branches of the topic, and each of them is discussed separately. The "Veer" method provides an opportunity to develop critical, analytical, clear and logical thoughts and to express their ideas and thoughts in written and oral form, as well as to defend[1].

This method teaches students to think creatively, independently, figuratively. Drawing up a work plan will help develop critical thinking skills.

“Cluster” method

The cluster method is a certain form of pedagogical, didactic strategy, which helps students create conditions for free, open thinking and a leisurely statement of personal thoughts about voluntary problems. This method requires the identification of a structure that allows you to think about the connections between different ideas. The "cluster" method is considered a form of thinking that is not explicitly objectively oriented. Its use is carried out in connection with the principle of operation of human brain activity. This method serves to ensure that the thinking activity is at once until a particular subject is thoroughly and thoroughly mastered by the readers. The "cluster" method, developed according to the idea of style, is a well-thought-out strategy, it can be used with students either

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

individually or in a group-based training process. In Group-based training, this method is manifested in the form of a set of ideas expressed by the members of the group. This makes it possible to harmonize the ideas advanced by each member of the group as well as to be able to find connections between them[2].

BBB (I knew, I want to know, I found out) method

This method can be used in a class of the “new knowledge giver” type.

Step 1: a new topic was written on the board, and readers were offered to write what they knew about the new topic, writing “I knew” in the notebook. (Given 3 minutes). A presentation is held. During the presentation, readers will tell what they know about the new topic. During the presentation, the rule of not repeating thoughts back by groups is strictly observed.

Step 2: readers are offered to write in their notebooks “I want to know” what they want to know about a new topic. (1 minute is given) a presentation is held.

Step 3: students are offered to open a textbook and write down their dreams by writing “I found out” in their notebooks. (Given 10 minutes). After the time has elapsed, a presentation is held. The new topic is told by readers. In all steps, the rule is observed that students listen to each other. The parts left unspoken by the teacher on the new topic and supplemented using materials found in additional literature[3].

FSMU technology

This technology helps to express its thoughts in a clear and concise State on a simple piece of paper distributed to the audience, providing corroborating evidence or negating points.

Transfer technology. This technology is carried out in several stages:

The trainer will determine the topic of the debate, or the problem to be discussed, or whether it has been studied, along with the audience;

The trainer will inform the audience that the training session will first have each listener working individually, then work in small groups, and finally work as a team at the end of the lesson;

During the session, it is mentioned that each listener can freely state their opinion in its entirety.

Stage 1: Papers are distributed to each listener with 4 stages of FSMU technology: F-state your opinion. S-indicate the reason for the statement of your opinion; M-give an example(proof) by proving your stated reason; U-summarize your opinion: Each thinker pays for the 4 stages of the FSMU on paper distributed individually with a written statement of their thoughts.

Stage 2: Once each listener has completed their papers, the trainer begs them to be divided into small groups, or he or she sends the audience into small groups using different group division methods: The trainer distributes large format papers of opinion and evidence on large format papers with 4 stages of FSMU technology written to each group: The trainer offers small groups to write in 4 stages, summarizing the opinions and arguments in the papers that each wrote in a large format.

Stage 3. In small groups, each listener is first introduced to the members of the group by their thoughts at each stage they write. Once all of the group members' opinions have been studied, the small group members begin to generalize them: The members of the group prepare to defend the fsmu by summarizing the 4 phases of the FSMU by each: At the time of generalization of opinions, each listener can defend, prove his faction. Small groups defend their generalized opinions: a group representative reads each step separately to prove certain sections without commenting as much as possible, that is, to mention what exactly the group came up with[4].

Stage 4. The coach will end the training, give his reaction to the comments expressed: Approximate copy of the distribution material: F-state your opinion. S-specify any reason for the

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

statement of your opinion. M-give an example that explains (proves) the stated cause. He-summarize your opinion.

These interactive methods provide us with a number of advantages in education.

Here are some benefits of using these interactive methods:

- Makes learning more engaging: Students are not just passive listeners, but active participants. This increases their interest in learning and helps them remember information better.

- Develops practical skills: Students can test theoretical knowledge in practice and learn to think independently in solving problems.

- Enhances collaboration and communication skills: Students learn to help each other, discuss ideas, and work in groups.

- Allows teachers to assess student understanding: Through interaction with students, teachers can identify students' knowledge levels and difficulties in understanding problems.

Here are some tips for effectively using interactive methods:

- Consider students' knowledge levels.

- Give students clear assignments.

- Provide students with opportunities to collaborate and communicate.

- Monitor students' actions and provide them with the necessary support.

- Encourage students to actively participate.

Conclusion

Today, General secondary education in schools, the methods that we have analyzed in the understanding of the law and new concepts brought about in the subjects of physics to students are of paramount importance. In the process of analyzing topics through these techniques, the student is instrumental in freethinking in young people, analyzing and analyzing thoughts, as well as linking them to practical techniques.

Overall, interactive methods play a crucial role in engaging students in high school physics learning and developing their knowledge and skills. These methods teach students to think independently, critically, solve problems and collaborate.

Literature

1. Ismoilov, S. I. (2020). "Amaliy laboratoriya tajribalari orqali fizika fanini o'rganish samaradorligini oshirish." Samarqand Davlat Universiteti Nashriyoti, 3(2), 120-128. (Darslik)

2. Karimov, A. A. (2019). "Fizika o'qitish metodikasining zamonaviy usullari." Toshkent Davlat Pedagogika Universiteti Nashriyoti. (Darslik)

3. Makhmudov, K. A. (2020). "Metakognitivnye strategii i obuchenie fizike." Dushanbe: Izd-vo TNU. (O'quv qo'llanma)

4. Mamajonov, B. M. (2018). "Kompyuter asosidagi o'qitish texnologiyalari va ularning ta'limiy ahamiyati." Namangan Davlat Universiteti Ilmiy Jurnal, 15(3), 75-82. (Ilmiy maqola)

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

THE ESSAYIST TRADITION IN AMERICAN LITERATURE

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Abstract. Essayism in literature allows us to explore unique forms of expression of subjective opinion, values and worldview. This article examines the features of the essayist tradition in American and Uzbek literature, analyzes the main motives and directions, identifies the differences and similarities of these traditions, and evaluates their socio-cultural functions.

Keywords: *stages, stylistic features, abstract, universal issues, literary tradition.*

The essay as a literary genre plays a unique role in the literary and cultural context, providing authors with the opportunity to express personal reflections, analyze social phenomena and explore philosophical issues in a relatively free form. Since its inception, the essay has become a powerful tool for conveying a subjective view, philosophical ideas and public opinion, which makes it significant not only in literature, but also in a wide cultural environment.

Essay writing in American literature is a rich and multifaceted tradition that reflects key philosophical ideas, social challenges, and cultural characteristics of American society. The development of this genre in the United States went through different stages, covering topics such as personal freedom, democratic values, criticism of social norms and the pursuit of self-knowledge.

The main stages and authors of American essay studies

The Age of Transcendentalism (XIX century) One of the earliest and most significant stages in the development of American essayism was the era of transcendentalism, which was represented by such authors as Ralph Waldo Emerson and Henry David Thoreau. In his essays "Self-Confidence" and "Nature", Emerson reflected on the importance of individualism, intuition and spiritual independence [1, 2]. His essays emphasized the value of personal opinion and the ability of each person to achieve inner harmony. In turn, Thoreau, in his famous essay "Walden, or Life in the Woods", wrote about living in solitude and the importance of self-knowledge through connection with nature [3]. These authors laid the foundations for the further development of American essay studies, where personal freedom and self-determination played a key role.

XX century: Social Criticism and Cultural Analysis. In the 20th century, American essay studies significantly expanded its scope, and its subjects became more diverse. James Baldwin and his essays, such as "Notes on a Native Son," have become an important part of the cultural and political dialogue. Baldwin used the essay to criticize racism and social inequalities in the United States, addressing issues of racial identity and cultural heritage [4]. His essayistic prose is an attempt to better understand the social roots of conflicts and create a space for dialogue.

The influence of women essayists also increased during this time. Joan Didion, in her essays "Beautiful Women" and "Notes from Her Hometown," explored social and cultural changes, using personal impressions to analyze social realities. Her style — clear, attentive to detail — became recognizable and influenced an entire generation of writers.

Modern Essay Studies. Modern American essayism continues the legacy of the past, focusing on personal experience as a way of criticizing society. Author Susan Sontag, for example, explores cultural phenomena such as photography and disease through the lens of an essay, combining personal observations with cultural analysis [5]. Modern essayists often turn to issues of gender, ecology, psychology and technology, considering their impact on the individual and society. The essay has also

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

become a platform for discussing the topics of mental health and personal resilience, which highlights the importance of personal experience for understanding broader social issues.

American essayism is characterized by a huge variety of themes and styles. It combines autobiographical elements with social analysis, when the authors use personal experience to clarify and analyze pressing issues of society. For example, the essays of Baldwin and Didion take the form of not just a narrative, but a personal testimony, where the authors bring their views and feelings. This tradition persists today, making American essayism especially sensitive to personal experiences, which are transformed into universal themes that affect wide audiences.

Essay writing in American literature has become a powerful tool through which authors comprehend and analyze dynamic cultural and social processes. It serves as a means to understand American identity, emphasizing the value of individual opinion, freedom, and a critical view of society's norms. The essay gives the authors the opportunity to explore not only the personal, but also the public, making their work an important part of the American cultural heritage.

Essayistics is characterized by great thematic and stylistic diversity, which allows it to be a flexible literary form capable of reflecting a wide range of cultural, philosophical and social ideas. The variety in themes and styles makes the essay attractive to both authors and readers, ensuring its relevance and versatility. Let's consider the main thematic areas and stylistic features characteristic of essay studies.

- Thematic diversity
- Philosophical reflections

Philosophical essays are focused on the study of abstract and universal issues, such as the meaning of life, questions of being, freedom and moral values. Such essays, for example, are characteristic of the works of Montaigne, whose essayism is based on deep reflection on human nature. This approach allows the authors to consider eternal questions through the prism of personal perception and analysis.

The essay as a genre is actively used for the analysis and criticism of social and cultural phenomena. Essayists such as George Orwell and James Baldwin raise thorny issues related to social injustice, politics, cultural change, and the moral dilemmas of society [6]. This area of essayism focuses on understanding social problems and their impact on personality.

Essays are often used to analyze works of art, literature, and cinema. Essayists such as Susan Sontag and Umberto Eco explore works of art, consider their cultural influence and symbolism, reflecting on the role of art in society [7]. A literary essay often combines criticism and analysis with the author's personal attitude to the work, which creates the effect of a "conversation" with art.

This type of essay focuses on the individual experiences and personal experiences of the author. Personal essays become a platform for understanding significant events, experiences and introspection. Classic examples are the essays by Joan Didion, who addresses her memories and personal stories, revealing themes of loneliness, loss and self-search. Writing in this genre helps the reader to feel the personal dimension of the author and his unique life experience.

In recent decades, environmental essays have become an important field that raises issues of nature conservation, climate change and the role of man in the world. Essayists such as Phillip Lopate explore how nature affects human life and culture, call for responsibility for the planet, and express a love of nature through their observations and reflections [8].

- a) Style diversity
- b) Conciseness and simplicity

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Many essayists strive for conciseness and clarity, using short phrases, clear formulations and a simple structure to convey a thought without unnecessary complexity. This style makes the essay accessible to a wide audience, allowing you to focus on the main idea.

Essayists often use metaphors, symbols, and figurative expressions to convey complex thoughts and emotional responses. For example, Susan Sontag's essay "On Photography" presents photography as a metaphor for time and memory. This technique enhances the expressiveness and emotional depth of the text, making it memorable and multi-layered.

Essay writing often takes the form of a conversation with the reader, where the author directly addresses him, creating an effect of intimacy and trust. This style allows the reader to feel like a participant in reflections, immersing himself in the personal reflections and experiences of the author.

Many essayists use irony and humor to emphasize the absurdity or paradox of a situation, to draw attention to the contradictions of society. For example, the essayist David Sedaris is famous for his witty style and satirical view of everyday situations, which allows you to look at familiar things from a new angle.

A personal essay often expresses the emotional experiences of the author, conveying feelings of sadness, joy, gratitude or despair. This style makes the essay closer to fiction and allows the reader to feel the depth of the author's emotions, which is especially typical for autobiographical essays.

The richness of themes and styles makes the essay a unique literary genre, capable not only of conveying personal reflections, but also of exploring important social and cultural issues. This diversity allows authors to find fresh ways to express their thoughts and create works that remain relevant and profound regardless of time and cultural framework.

Essays are important to American culture and society, serving as a form of self-expression, social criticism, and cultural analysis. It helps to shape public opinion, reflect cultural values and discuss current social issues, occupying a special place in the American literary tradition.

1. A form of personal expression and cultural dialogue

The essay in American culture is a unique form of self-expression where authors can freely share personal thoughts, views and experiences. This creates a connection between the author and the reader, enhancing the sense of identity and self-awareness. The author, whether James Baldwin with reflections on racial conflicts or Joan Didion with an analysis of social exclusion, conveys through an essay an individual view that allows readers to comprehend problems through the prism of someone else's experience.

2. Social criticism and transformation of society

American essay studies are often used as a tool of social criticism. It allows authors to discuss important social issues such as racism, inequality, human rights, political injustice and gender issues. Writers such as Ralph Emerson, Henry David Thoreau, and Ta-Nehisi Coates have used essays to critique social norms, questioning conventional wisdom. Their essays often serve as a powerful call for change and stimulate public debate, influencing American social movements and politics.

3. Search and formation of national identity

The essayist helps Americans make sense of their national identity, values and cultural characteristics. From the first essayists of the Transcendentalist era, such as Emerson and Thoreau, to modern authors, American writers use essays to explore the issues of freedom, independence and self-expression that underlie American ideology. The essay thus becomes a way to preserve and convey cultural values and views, strengthening the sense of national belonging.

4. Research and transfer of cultural experience

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

The essay serves as a form of cultural archive, where traditions, social mores and cultural phenomena of different eras are reflected. American essayism is both a mirror and a cultural repository that allows you to preserve memories and pass them on to the next generations. For example, the works of John Updike or David Foster Wallace on middle-class life in the United States give modern readers and researchers the opportunity to understand the cultural and social conditions of a certain time.

5. Adaptation and integration of new ideas

American culture highly values individualism and diversity, which is reflected in the variety of topics and styles of essay writing. The essay offers the authors a platform for experimenting with new ideas, philosophical trends and literary forms. Through the essay, new ideas penetrate and consolidate the cultural consciousness, contributing to the adaptation of society to a rapidly changing world.

6. Enrichment and development of American literature

Essay studies have had a significant impact on the development of American literature, shaping its style and subject matter. In the American literary tradition, the essay has become an important genre that combines elements of fiction, journalism, and philosophy. This genre not only expands the scope of literature, but also offers a unique way to convey reflections, which over time becomes an important part of the literary canon.

Thus, essay writing in American culture is not only a literary genre, but also an important form of social and cultural work. It helps society to discuss important issues, explore identity, critically analyze social norms and preserve cultural values. The essay allows Americans to comprehend and rethink their society, serving as a source of inspiration, analysis and change at the same time.

LIST OF USED LITERATURE

1. Эмерсон Р. Нравственная философия. — Мн.: Харвест, М.: АСТ, 2001. — 384 с.
2. Эмерсон Р., 1986. Природа // Ральф Эмерсон. Эссе. Генри Торо. Уолден, или жизнь в лесу, М.: Худ. литература, стр. 23-66, 344-361.
3. Торо Т. Д. Уолден, или Жизнь в лесу. М., 1962, с. 170.
4. Baldwin J. Notes of a Native Son. - N. Y.: Bantam Books, 1964.
5. Susan Sontag/ Sharon DeLano and Annie Leibovitz, eds. New York: s.n., 2005
6. Джордж Оруэлл. Хорошие плохие книги - М.: АСТ, 2021 - 416 с.
7. Susan Sontag. Against Interpretation and Other Essays, New York: Farrar, Straus and Giroux, 1961, p. 11.
8. Lopate P. The Art of the Personal Essay: An Anthology from the Classical Era to the Present. Anchor Books. 1994.

Impact of investment project programs on the national economy of Uzbekistan and its organizational legal mechanisms.

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Annotation: In this article, the concept of investment project, laws and legal documents, the impact of investment programs on the national economy of Uzbekistan, the rights that improve the creation of free funds of investors, the results of the development of investment projects, the basis for their financing. dividing factors and methods, a number of investment projects implemented in order to modernize the country's economy, the procedure for implementation and monitoring of investment application of foreign investment to them are highlighted.

Key words: investment, small business national program, economy, market economy, resident, investor, investment, financial system, economy.

As we all know, the adoption of the "Development Strategy of New Uzbekistan for 2022-2026" by Decree No. PF-60 of the President of the Republic of Uzbekistan on January 28, 2022 was undoubtedly an important event in the socio-economic life of our country. ¹. The third direction of the development strategy is devoted to the priorities of rapid development of the national economy and ensuring high growth rates, further strengthening of macroeconomic stability and maintaining high economic growth rates, structural changes Priority tasks to be implemented in the next 5 years have been defined in terms of deepening, modernization and diversification of the leading sectors of the national economy

The investment program introduced in the Republic of Uzbekistan and the rights of investors guaranteeing the introduction of their own funds, the results of the development of investment projects, the factors underlying their financing and the methods and sources of financing, as well as a number of investment projects implemented in order to modernize the country's economy and their forms of attracting foreign investments are highlighted. The investment project consists of a set of interrelated activities and implies a specific goal aimed at solving the set tasks within a limited period, at the expense of the specified budget.

Improvement of market economy relations is a process interrelated with internal financial policy carried out by the state. Distribution, redistribution of financial resources and spending or saving for this or that field are inextricably linked with the distribution system adopted and operating in our republic. If the development of legislation, the adoption of fair and truthful laws and their implementation are focused on the development of the market economy, the wide spread of entrepreneurship, the resources of other owners will grow rapidly due to the reduction of state funds in the composition of investment sources. will come

In order to attract investments and manage them, first of all, it is necessary to understand their legally approved meaning, form, content and essence. For this, the Law of the Republic of Uzbekistan "On Investment Activity" plays an important role as a regulatory legal document. In this law, the concept of local investor is defined as follows;

Local investors are citizens of the Republic of Uzbekistan carrying out investment activities, foreign citizens with the status of residents of the Republic of Uzbekistan and stateless persons, including individual entrepreneurs, as well as legal entities of the Republic of Uzbekistan.

Timely and high-quality implementation of the investment projects provided for in the 2019 Investment Program of the Republic of Uzbekistan is extremely important for the socio-economic

¹ O'zbekiston Respublikasi Prezidentining Farmoni, 28.01.2022 yildagi PF-60-son

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

development of the country, the creation of new production facilities and jobs, the improvement of infrastructure and the beautification of regions and the increase of the level of public welfare. is a factor. At the same time, the analysis of the state of affairs in this field shows that there are some systemic deficiencies that prevent the timely and complete implementation of investment projects, the attraction and absorption of investments.

In particular, the current system of forming the Investment Program of the Republic of Uzbekistan does not ensure the step-by-step preparation of prospective investment projects, the timely development of project documents, which leads to delays in the opening of financing, the appropriation of funds, and as a result, the commissioning of capacities. In order to eliminate this problem, advanced information and communication technologies are being applied to the process of development and monitoring of investment programs.

Now let's focus on the documents necessary for the implementation of investment programs.

Investment project documents - a working project that defines the final, most reasonable and effective technical, organizational and financial-economic solutions for the implementation of the project, taking into account the terms of project financing. system is included. In the third section of the three-year investment program formation and implementation scheme of the Republic of Uzbekistan, the procedure "Monitoring the implementation of the investment program" is defined (Table 1.2).

Table 1.1

Formation and implementation of the Investment Program of the Republic of Uzbekistan for a period of three years²

SCHEME

stages	Action measures	deadlines	Responsible ministries, agencies, other organizations
III. Monitoring the implementation of the investment program			
Stage 1	Preparation, agreement and approval of complex network schedules for the implementation of investment projects.	Specified period	The initiators of the project, the Cabinet of Ministers
Stage 2	Monitoring of the implementation status of the investment program using the automated information system "control and monitoring of the implementation of investment projects" (hereinafter - the information system) and control.	continuously	Ministry of Investments, Industry and Trade
Stage 3	Providing information to the Ministry of Investment, Industry and Trade on the status of implementation of the Investment Program through the information system.	Up to 5 days of every month	Project initiators
Stage 4	Providing summary information to the Administration of the President of the Republic of Uzbekistan and the Cabinet of Ministers on the implementation status of	Up to 10 days of every month	Ministry of Investments, Industry and Trade

² O'zbekiston Respublikasi Investitsiya dasturini shakllantirish va amalga oshirish tartibi to'g'risidagi nizomga 1-ilovasi

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

	the Investment Program through the information system.		

In the state regulation of investment activities, in our opinion, first of all, it is necessary to create an environment with free competition against individual hokims, to encourage and develop competition, to support small and medium-sized business enterprises, and to have an efficient and beneficial tax for everyone. it is necessary to determine the direction of the policy.

The function of managing the financial system is mainly performed by the states. However, in recent years, in developed countries, the tendency of enterprises to transfer this function to another, i.e., to consolidators of non-state enterprises.

In some cases, private sector enterprises are becoming specialized international enterprises. For example: —FASB - Financial Accounting Standard Board, stock exchanges, ISDA - International Swap Dealers Association, which is similar to the International Swap Dealers Association, according to the standard of financial accounting books. It should be noted that agreed and non-agreed procedures along with the Laws are applied in practice, and it is necessary and mandatory for everyone to implement this Law in order to regulate this country. For example, trading of stock exchange brokers and brokers is regulated.

In accordance with the Investment program of the Republic of Uzbekistan, state regulation of investment activity and other guarantees are established. Responsibilities are defined for violations of the Law on Investment Activities, Centralized Investment Placement, Expertise of Investment Projects, Protection of Investments, Guarantees of Use of Funds, Additional Guarantees and Protection Measures of Investments, Free Access to Open Information.

Ensuring the stable economic development of the regions of our country is one of the important directions of the economic policy of our republic. The socio-economic development of the regions and the improvement of living conditions are directly related to the development of their economy. Since the country's economy is a whole system consisting of regions, ensuring the development of each of its regions creates the basis for the continuous development of our country. Therefore, the investment attractiveness and relative advantages created in the country and its regions play an important role in attracting foreign direct investments.

We believe that it is appropriate to implement the following priorities in order to attract foreign investments to national enterprises in our country:

1. Development of deep processing of agricultural products;
2. Development of transport and telecommunication infrastructure;
3. Organization of the demand for knowledge in all sectors of the economy and the production of competitive products in world markets;
4. development of the tourism sector, creation of modern infrastructure of international and domestic tourism.

In order to improve the country's investment climate and find a solution, experts of enterprises with foreign investments, expert representatives of regional governments, large companies with investment opportunities and An open dialogue was organized among the general public with the participation of enterprise managers and the republic's mature scientists in the field of investments, and the existing problems were openly discussed in a comprehensive manner. should be done. On this basis, attracting a wide public opinion to the issue, among experts, scientists and practitioners, a scientific and economically based unified investment policy, as well as the adopted law and it is possible to develop a mechanism for the implementation of decisions and to ensure their viability.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

In conclusion, the future improvement of attracting foreign investments to economic sectors of the regions will serve to achieve high economic growth rates, the production of new types of competitive products and, most importantly, the creation of new jobs in the regions of our country, thereby further improving the lifestyle of the population. On the basis of active attraction of foreign investments, it introduces modern techniques and technologies in production and develops the production of products intended for export. Attracting foreign investments on the basis of government guarantees arouses interest in the economy of our country among foreign investors.

Establishing the production of import-substituting goods and directing foreign investments to the priority sectors of the economy will ultimately provide an opportunity to ensure the standard standard of living of the population.

It provides jobs for the growing population by developing small business and private entrepreneurship and accelerating agricultural production. It renews and technically re-arms the outdated production facilities, material and technical base of the enterprises, helps to establish natural resource processing enterprises.



Collaboration of the film director with the make-up artist

Сотрудничество режиссёра с гримером

Кино режиссёрнинг гримёр билан ҳамкорлиги

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Аннотация: Ушбу мақолада кино режиссёрнинг гримёр билан ишлаш жараёнидаги ҳамкорлик ишлари, актёрлардаги характер ва образ топишларида гриёрнинг ўрни беқиёслиги, ундан ташқари гримёр ишлаш жараёнида албатта сценарий билан тўлиқ танишиб чиқган холда ҳар бир актёр образи устида ишлашда режиссёр билан маслахатлашган холда ишлаш кераклиги ёритилган.

Калит сўзлар: Режиссёр, гримёр, кино, актёр, образ, характер, сериал, кадр, сёмка, либос.

Аннотация: В данной статье написано о сотрудничестве кино режиссёра с гримёром, в подготовительном переуди гримёр должен прочитать сценарий и находить характер каждого героя и фантазировать каждый образ и конечно же, показывать и согласоваться над каждым эскизом образа с режиссёром итоговую точку образа ставит режиссёр об этом и прочее мы можем познакомится в этой статье.

Ключевые слова: Режиссёр, гримёр, кино, актёр, образ, характер, сериал, кадр, сёмка, костюм.

Annotation: This article is written about the collaboration of a film director with the make-up artist: in the preparatory stage, the make-up artist must read the script and find the character of each character and fantasize each image and, of course, show and agree on each sketch of the image with the director; the final point of the image is set by the director about this and we can get acquainted with the rest in this article.

Key words: director, make-up, artist, image, character, cinema, actor, series, frame, filming, costume.

Бугунги кунда давлатимиз тамонидан санъатга бўлаётган эътибор биз санъат ахлига маъсулиятни янада кучайтиради. Дунё санъатида кино соҳаси ривожланиб бораётган бир вақтда, Ўзбекистон Республикасида ҳам қатор тарихий сериал ва кинолар суръатга олинди, Булардан “Баходир Ялангдош”, “Илҳақ” “Аёл макри” ва бошқалар бундан ташқари Туркия Республикаси билан ҳамкорликда ишланган “Жалолиддин Мангуберди” сериали ва хозирда иш жараёни кетаётган ҳамкорликдаги “Алишер Навоий” кинеларини айтиб ўтишимиз керак бўлади.

Режиссёр – французча сўз бўлиб, “бошқараман” деган маънони англатади. Аслида ҳам бу касб эгасининг фаолияти санъат ва маданият соҳасидаги жуда кенг кўламли ва серқирра раҳбарлик, раҳномолик, бошқарув ишлари ва ижодий ишлар билан боғлиқ бўлиб, жамиятда катта мавқега эга.

Режиссёрлар кино ёки сериал устида ишлаганда гримёр билан ҳамкорлиги олинаётган фильмнинг бошидан бошлаб уйғун ҳолда ишлайди. Фильмлар қисмига қараб режиссёр хоҳласа бошидан, хоҳласа охиридан ёки ўртасидан бошлаб съёмка жараёнини бошлаши мумкин. Спектаклда бундай қилина олинмайди.

Танланган актёр фильм пайтида семириб кетиши, ёки жиддий сабаб бўлмаса ўзгариши мумкин эмас. Гримёр фильмда мана шу жихатларга диққат билан эътибор беради. Фасл ўзгариши, образнинг ижродаги кайфиятига қараб, чарчоқ ҳолати ёш ёки қариган ҳолатини гримёр усталлик билан ишлаши зурур. Фильмда иш жарёни бугун 3-қисмдан бошланса, эртага 10-қисми олинishi мумкин. Энди 3 қисмда қилинган грим 10 қисмда тубдан ўзгаради. Иккала қисмда ҳам ҳар хил гримда ишланади. Яна қайтиб 3 қисм ишланаётганда гримёр мана шу жойда хато қилишга ҳаққи йўқ.



Расм 1: Сериал жарёни грими

Салбий қаҳрамонлар фильм бошида уни ижро этаётган роли салбий эканлигини режиссёрлар бермайди. Гримёр гримни ижобий қаҳрамонларникидек бошлайди. Кадрдан кадрга ўтишда грим хатолари билинмаслиги керак. Чунки бугунги кун томошабини ўта зийрак.

Яна бир мисол: фильмдаги икки актёр бир бири билан тортишадиган саҳнаси бўлиши мумкин. Шу саҳна бугун олинади. Орадан кунлар ўтиб, бу саҳна актёрларнинг уйига қайтиш саҳнасига уланади ва давоми олинади. Гримёр “тортишиш” саҳнасида актёрларни грими устида ишлаганда сочлари тўзиган, лабининг бир четида тарсакидан қолган қон ёки юзда шилинган ёки кўқарган қилиб ишлаган эди. Уйга қайтиш саҳнаси орадан 5 кун ўтиб олинган бўлса ҳам актёрлар гримини бошқатдан худди ўша кунгидек қилиб ишланиши зарур. Акс ҳолда гримдаги камчилик кўриниб қолади. Бундай камчиликларни кўплаб фильмлада кўриш мумкин.

Гримлар фильмларда гримёрнинг маҳоратидан келиб чиқиб ишлайдики, актёрни таниб олиш мушкул бўлади. Спектакль эса умуман бошқа жараён. Пьесани пухта ўрганиб чиққан режиссёр уни саҳналаштириш плани устида ишлар экан, спектаклни ташкил этувчи

элементлар, хусусан спектаклни бадий безаш устида ҳам фикр юритади. Бадий безашга декорация, нур, музика ва шовқин, либос, грим, реквизит ва бутофорлар киради.

Режиссёр ва рассом пьеса материали асосида чуқур ижодий ишлари ҳамма вақт кутилмаган ва таъсирли ечимларни туғдиради. Режиссёр спектаклнинг ташқи кўриниши тўғрисида рассом билан суҳбатлашар экан, у рассомни баъзи бир ролнинг режиссёрча талқини билан ҳам таништиради. Режиссёр ҳар бир образни қандай кўз олдида келтиришни ва ижрочидан нималар талаб қилинишлигини рассомга тушунтиради. Рассом ҳам ўз навбатида спектакль қатнашувчиларининг ташқи кўриниши, жисмоний тузилиши, юзини, улар ҳаётини, темпераментини, ўзларини тутабилиши, қилиқларини билиши ва репетиция жараёнида ўрганиши зарур. У рассом сифатида юқорида айтилганларни ўрганар экан, уларнинг ҳаммасидан пьесадаги роллар учун ўзига фойдаланади. Иккинчи томондан либос ва гримлар бўйича эскиз тайёрлаётган рассом репетицияларга қатнашиши, ижрочилар томонидан образлар учун топилаётган янги янги талқинларни кўриб, кузатиб бориши керак. Рассом режиссёр режасини тушиниб етса у билан ҳамкорликда ишласа, унинг либос ва грим устидаги иши уйғунликда боради.

Кўпинча режиссёрлар рассомга ташқи безак, либос ва гримни тушинтириш учун, ўша спектаклда ифода этилган даврда яшаб, ижод этган санъат асарларига мурожаат қилишади. “Режиссёр гоҳ замонавий, гоҳ классик пьесаларни сахналаштирар экан рассомдан ўша даврга мос, ўша давр характери очиқ берувчи ранглардан фойдаланишни талаб этади. Шунинг учун режиссёр олдин ўзига ролларнинг режиссёрча талқинини аниқлаб олиб, кейин рассом гримчи билан суҳбатлашади. Бу гаплар грим ва парик эскизларини тайёрлашга ҳам таълуқлидир. Рассом гримчи бу анжомларни тайёрлар экан, ижрочиларнинг юз тузилишини ўрганиши зарур.

Кинода фильм образларини ифодалаш бадий реалистик талқини режиссёр ва гримчининг ҳамкорлигига боғлиқдир. Бу албатта тарихий фильмларга кўпроқ алоқадордир. Гримчи рассом фильмни суратга олиш жараёнининг барча босқичларида ҳамкорликда ишласа, жамоага катта ёрдам берган бўлади. Гримчи билан режиссёр ҳамкорлиги сценарийни ўқиш давридан бошланади. Юқори тажрибага эга гримчи актёрлар танловида қимматли маслаҳатларини беради. Чунки, гримда портрет ва характерли гримлар билан ишлашга тўғри келади. Унинг қимматли фикрларини режиссёр томонидан инобатга олиниши актёрни ташқи қиёфасини ўйланган образга мос келишини ва уни грим билан бойитилиши яратилажак образни яратилишига замин бўлади.

Гримёр режиссёр билан кино тасвирни барча жараёнида иштирок этиш мақсадга мувофиқдир. Гримчи режиссёрнинг ишларини характери билиши ва режиссёрнинг ўз навбатида гримлаш хусусиятини яхши ўзлаштирган бўлиши керак. Кинода вақт ва персонаж-қаҳрамон ҳар хил кўринишда ўзгаришлигини яъни, ёшлигидан қариганча бўлган босқичларни тасвирга туширилса, гримчи учун катта маъсулият юклайди. Режиссёр ва гримчи қаҳрамонни ташқи, ўзига хос индивидуал хусусиятини кичик сахналарда (эпизодларда) ифода этишда икки хил иштирокчиларнинг ёшлари бир хил бўлса, иштимой ўрни ва бошқаларни грим қилишда ҳар бирини ўзига хослик қиёфасини топиш керак бўлади.

Инсонда эътиборли воқеалар ҳаётида, унинг ташқи кўринишида ўз ифодасини топади. Шу боис тасвирга олиш вақтида янги янги деталларни гримчи топиши керак. Бу

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яратилаётган образни ҳаққонийлиги ва ифодавийлиги акс эттиради. Бу яратилаётган асарни бадиий яхлитлиги таъминловчи жамоа ишининг бир бўлаги ҳисобланади.

Гримёр оператор билан ҳам ҳамкорликда иш олиб боради. Рассом-гримёр агар операторнинг кадрларда қандай ёруғлик қўйиш санъатидан хабардор бўлмаса, у ҳеч қандай мувофақиятга эриша олмайди.

Свет ҳам грим каби ифодавийли хусусиятга эга бўлиб, нафақат образни ташқи хислатларини очишга ва аммо ички эҳтиросли ҳаёт, темперамент, эҳтиросни юзага чиқишида ҳам қимматли вазифани ўтайди.

Оператор (свет) нур орқали эпизодни “кайфиятини” кўтаради ва инсонни руҳий ҳолатини очиб беради. Режиссёр кинонинг барча кечинмаларини оператор орқали тасвирга туширади. Оператор ва гримчининг ҳамкорлиги бўлмаса иш натижаси паст бўлади.

Бош рассом ва рассом-гримчи ўртасида ижодий ўзаро тушиниш бўлиши керак. Бундан ягона стиль таъсир воситаларни ўзаро ягона стили яратилишида асосий боғлиқлиги оқибати натижасидир. Бундай жараён тарихий фильмлар учун жуда муҳимдир. Ҳар бир даврнинг ўзига хос ўз стили бўлиб, у архетектурада, костюмда, майишший предметларда, турмакларда (соч) ўз ифодасини топади.

Грим танлашда тарихий ҳақиқатни юзага келтиришда костюм, декорация, тўғри шарт-шароит топишда (ҳозирги давр фильмларидаги “атмосферани” яратишда) тарихий манбаъ ёрдам беради.



Расм2: “Тез ёрдам” сериали грим жараёни

Хулоса қилиб айтганда, умумий ишда актёр режиссёр, оператор, гримчи-рассомларнинг ҳамкорлиги ва уларнинг муштаракликдаги иши бадиий яхлит санъат асарини яратишдаги асосий мезондир.

Фойдаланилган адабиётлар:

1. Жалилова Ф. Соч турмаклаш санъати. 2015 йил.
2. Жалилова Ф. Грим. 2018 йил.
3. Жуманиязов Ш.Р., Ҳайтов Э.Х. “Чизматасвир” Ўқув қўлланма. 1 босқич талабалари учун. “Инфо Сапитал Гроуп”, Т.: 2018 й. 88 б.
4. Маданият ва санъат атамаларининг изоҳли луғати. Б.С.Сайфуллаев таҳрири остида. — Тошкент: Гофур Гулом, 2015.352-б.

**PEDAGOGICAL-PSYCHOLOGICAL OPPORTUNITIES FOR THE
DEVELOPMENT OF COMPETENCE OF NATIONAL SELF-AWARENESS IN
FUTURE TEACHERS**

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Annotation: in this article, first of all, when conducting the educational and educational training process using innovative pedagogical technologies, the ability of the future teacher to analyze independently acquired knowledge, skills and qualifications, spiritually broad data, pedagogical thinking and pedagogical etiquette in future teachers, pedagogical technique, understanding of national identity, spiritual perfection, organization, perseverance, acquisition of pedagogical competence, it is illuminated through the pedagogical means of influence of the content of such qualities as demanding, strict discipline.

Key words: knowledge, skills, competence, competence, reform, understanding of the national self, initiative, socio-professionalism, perfection, spiritual-moral virtue

**BO‘LG‘USI O‘QITUVCHILARDA MILLIY O‘ZLIKNI ANGLASH
KOMPETENSIYASINI RIVOJLANTIRISHNING PEDAGOGIK-PSIXOLOGIK
IMKONIYATLARI**

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Annotatsiya: mazkur maqolada bo‘lajak o‘qituvchilarda milliy o‘zlikni anglash kompetensiyasini rivojlantirishning pedagogik-psixologik imkoniyatlarini o‘quv-tarbiyaviy mashg‘ulot jarayonini innovatsion pedagogik texnologiyalardan foydalanib olib borishda avvalo, bo‘lajak o‘qituvchining mustaqil egallangan bilim, ko‘nikma va malakalari, ma‘naviy-tarbiyaviy ahloqiy jihatdan keng ma‘lumotlarni tahlil qilish qobiliyati, pedagogik tafakkur va pedagogik odob, pedagogik texnika, milliy o‘zligini anglaganligi, ma‘naviy barkamolliqi, tashkilotchilik, matonat, pedagogik layoqatga ega bo‘lish, talabchanlik, qat‘iy intizom kabi sifatlarini tarkib toptirishning pedagogik ta’sir vositalari orqali yoritilgan.

Tayanch so‘zlar: bilim, ko‘nikma, malaka, kompetentlik, islohot, milliy o‘zlikni anglash, tashabbuskorlik, ijtimoiy – professionallik, barkamollik, ma‘naviy-ahloqiy fazilat

Mamlakatimiz ta’lim va fan, innovatsion ta’lim tizimida olib borilayotgan keng ko‘lamli islohotlarning negizida, xalqimizning buguni va ertasi bo‘lgan – kelajak avlod kadrlarini tayyorlash masalasi eng muhim vazifalardan biri sifatida qaralmoqda. O‘zbekiston Respublikasining Prezidenti Shavkat Mirziyoyev mamlakatimiz yoshlarini tarbiyalash masalasiga to‘xtalib: 2020 yil 29 dekabr kuni Oliy Majlisga Murojaatnomasida: **“Biz o‘z oldimizga mamlakatimizda Uchinchi Renessans poydevorini barpo etishdek ulug‘ maqsadni qo‘ygan ekanmiz, buning uchun yangi Xorazmiylar, Beruniylar, Ibn Sinolar, Ulug‘beklar, Navoiy va**

Boburlarni tarbiyalab beradigan muhit va sharoitlarni yaratishimiz kerak. Bunda, avvalo, ta'lim va tarbiyani rivojlantirish, sog'lom turmush tarzini qaror toptirish, ilm-fan va innovatsiyalarni taraqqiy ettirish milliy g'oyamizning asosiy ustunlari bo'lib xizmat qilishi lozim¹ deb takidlaganlari ham bejiz emas.

O'zbekiston Respublikasi Prezidenti Shavkat Mirziyoyev² jamiyatda hayotida yosh-avlod va ularning xalq oldida mas'uliyatiga e'tibor berar ekan: "yoshlarimiz, jamiyatimiz va mamlakatimizning kelajagi uchun strategik ahamiyatga ega[15]" ekanligi mamlakatimiz ta'lim va fan sohasida amalga oshirilayotgan islohotlarda ham o'z samarasini ko'rsatmoqda. Shuning uchun, yosh-avlodning jamiyatda o'z intellektual salohiyati va o'z istedod va iqtidorini namoyon etishi uchun barcha imkoniyatlar yaratib berilmoqda.

Jumaladan, hozirgi vaqtda vaqtda respublikamiz oliy ta'lim muassasalarida talabalarning ma'naviy qadriyatlarini rivojlantirishda ma'naviy-ahloqiy, tarbiyaviy mezonlarga, ta'limning shakl, metod, vositalari, mexanizmlarini rivojlantirish muhim ahamiyat kasb etmoqda. Talabalarga ta'lim va tarbiya berishning barcha bosqichlarini texnologik jihatdan modernizatsiyalashtirish, hozirgi zamonaviy ta'lim sharoitidan kelib chiqib ta'lim tizimida muhim strategik ustuvor yo'nalishlarda olib borilayotgan islohotlar hamda milliy o'zlikni anglash kompetensiyalarini rivojlantirish bo'yicha muhim ustuvor vazifalarni bajarish.

Bo'lajak o'qituvchilarda milliy o'zlikni anglash kompetensiyalarini rivojlantirish bo'yicha talaba-shaxsini tarbiyalash, uning milliy-ma'naviy ongini oshirish muhim ahamiyat kasb etmoqda. Jumladan, yosh avlod tarbiyasi, uning kelajagi, ertangi kunga ishonch ruhida tarbiyalash masalasi yosh-avlod shaxsi ma'naviy kamoloti, balki jamiyat taraqqiyotini ham belgilashda muhim ustuvor vazifalardan hisoblanadi.

Xususan, milliy o'zlikni anglash kompetensiyalarini rivojlantirish bo'lajak kadrlarda ma'naviy qadriyatlarning barcha sohalarini bo'yicha bilimga ega bo'lish, ijtimoiy-gumanitar fanlarni o'qitishda bilim, ko'nikma, malakalarga ega bo'lish, milliy qadriyatlarga sodiqlik, ruhida tarbiyalashda vatanparvarlik tuyg'usini shakllantirish, odob-axloq tamoyillarini egallashi, o'ziga ishongan raqobatbardosh kadrlar etib tarbiyalashda ta'limning shakl, metod va vositalarni o'quv-tarbiya jarayonida qo'llashni taqozo etadi.

Hozirgi vaqtda ta'lim tizimining samaradorligini oshirish maqsadida zamonaviy texnika va innovatsion ta'lim texnologiyalarini amaliyotda qo'llashda milliy va umummadaniy qadriyatlardan foydalanish alohida ahamiyat kasb etadi. Ijtimoiy gumanitar fanlar tizimida "Milliy g'oya, ma'naviyat asoslari" fanlar tizimining metodik asosini yaratish maqsadida talabalarda faqat mutaxassislikka doir bilimlarni chuqur egallashlari hamda ularning ijtimoiy-gumanitar fanlar bo'yicha bilimlarini yanada chuqurlashtirish va mustahkamlash bo'yicha, bilim, ko'nikma va malakalar hosil qilish, mantiqiy tafakkuri va kreativ – ijodiy sifatlarini rivojlantirish, emotsional-irodaviy tafakkurini oshirib borish bo'yicha ishlarni takomillashtirish zarur³.

Xususan, ta'lim –tizimi sifat samaradorligini oshirishda avvalo talabalarda milliy o'zlikni anglash kompetensiyalarini rivojlantirish yuzasidan bilim darajasini oshirish, kreativ qobiliyatini rivojlantirish, milliy o'zlikni anglash bo'yicha bilim, ko'nikma va malakalarga ega ekanligi, tafakkuri doirasi va xarakterining chiniqqanligi, ma'naviy-axloqiy tarbiyaviy xislatlari, emotsional

¹ Халқ сўзи. Ўзбекистон Республикаси Президентининг "Олий Мажлисга Мурожаатномаси" 2020 й. 30 декабрь №-255 сон

² Мирзиёев Ш.М. Буюк келажакимизни мард ва олийжаноб халқимиз билан бирга қурамиз. – Тошкент: Ўзбекистон, 2017. – 537 б.

³ Ибрагимов Х., Абдуллаева Ш. Педагогика. Ўқув қўлланма. – Т.: Фан, 2004. – 182 б.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

irodaviy-irodaviy sifatlari, kasbiy-ijtimoiy pedagogik faoliyatga tayyorgarligi aniqlash hamda o'z bilim doirasini bilish va ta'lim jarayonini shunga qarab tashkil etish bo'yicha ishlarni tashkil etish maqsadga muvofiqdir. Jumaladan, xozirgi informatsion xurujlar ta'siri kun sayin oshib borayotgan murakkab sharoitda fan va texnikaning rivojlangan tizimini, ta'lim-tarbiya jarayoniga yangi innovatsion texnologiyalardan foydalangan holda ta'lim jarayonini tashkil etish bo'yicha ishlarni jadallashtirishni o'z ichiga oladi. Ma'lumki, o'quv-tarbiya ishlarini o'quv jarayonlaridagi "Umumiy pedagogika", "Milliy g'oya targ'ibot texnologiyalari", "Etnomadaniyat", "Ma'naviyatshunoslik" o'quv fanlari va darsliklari orqali muammo yechimini topish bo'yicha ishlarni jadallashtirish zarur⁴.

Demak, «Pedagogik texnologiya» fanlari orqali o'quv kursi fani o'quv dasturi va darsliklari oliy ta'lim muassasalari talabalari, uchun yaratilgan bo'lib, unda tizimli ravishda mutaxassislar tayyorlashda talablarning ortib borishi munosabati bilan chuqur intellektual qobiliyatga ega, dunyoqarashi keng, yuksak madaniyatli va ma'naviyatli, o'z bilimi va shaxsiy fazilatlar bilan o'rnak bo'la oladigan kadrlarni tayyorlash maqsad qilib olingan. Shu jihatdan mutaxassislikka oid fanlar bilan bir qatorda ijtimoiy fanlar, ya'ni pedagogika fani ham muhim ahamiyatga ega. Chunki bo'lajak mutaxassislarni ta'lim-tarbiyadan zarur bilim, ko'nikma va malakalar bilan qurollantirmasdan rejalashtirilgan samaradorlikka erishib bo'lmaydi⁵.

Bo'lajak pedagogning kasbiy tarbiyaviy faoliyatga qiziqishi, qat'iy ishonchi va qobiliyati uning kasbiy tarbiyaviy, an'analar, qadriyatlar va manfaatlar hamda, extiyojlarning umumiy faoliyatiga yo'nalganligini tashkil etadi. Uning kasbiy tarbiyaviy faoliyatga yo'nalganlik darajasi kasbiy tayyorgarlikka va o'z navbatida milliy o'zlikni anglash kompetentligiga erishishga olib keladi. Milliy o'zlikni anglash kompetensiyalari – shu soha to'g'risida asosli fikr yuritishga imkon beruvchi va unda samarali harakat qilishga tegishli bilimlar va qobiliyatlarga ega bo'lishni anglatadi. Milliy o'zlikni anglash kompetensiyalari uch qismdan iborat holda o'rganilishi maqsadga muvofiq bo'ladi. Tadqiqot jarayonida milliy o'zlikni anglash kompetensiyalarini tarixiy meros, bugungi kunning ijtimoiy-siyosiy jarayonlari hamda Vatan kelajagi yo'lidagi ma'suliyat bilan yondoshish kabi qismlar asosida o'rganildi. Ushbu qismlar asosida kompetensiyalar ajratib chiqildi va o'rganildi. Milliy o'zlikni anglashni samarali olib boradigan kompetentli pedagog – ta'lim-tarbiya nazariyasi va amaliyotini mukammal egallagan, kasbiy tarbiyaviy faoliyatda samaradorlikka erishishdagi bilimlar va qobiliyatlar yig'indisi asosida shakllanadi.

Milliy o'z-o'zini anglash millat shakllanishining ma'lum nisbiy yuqori bosqichining mezonidir. Millat o'ziga xos bo'lgan urf-odatlar, an'analar, qadriyatlarni shakllantirishi va davlat atrofiga birlashishlari mumkin. Ammo, uning milliy o'z-o'zini anglashi darajasiga ko'tarilishi murakkab jarayon hisoblanadi. Chunki u millat vakillarining aksariyat ko'pchilik qismining moddiy va ma'naviy boyliklarga ega ekanligi hissiyotining, tor darajada, mavjud bo'lishi manfaatlaridan umummillat manfaatlarini ustvor qo'ya bilish darajasiga ko'tarila olishi bilan bog'liqdir. Bo'lajak o'qituvchilarda milliy o'zlikni anglash kompetensiyalarini rivojlantirishda milliy ong millatni o'ziga hosligi asosida rivojlanib borishdagi ko'rsatkich bo'lsa, milliy o'z-o'zini anglash manfaatlarini himoya qilishda harakatga keltiruvchi ichki ma'naviy-ruhiy salohiyatdir deb takidlashga asos bo'ladi. Milliy o'z-o'zini anglash real moddiy kuch sifatida millat sha'ni qadr-qimmat, obro'-e'tibori, or-nomusi poymol etilganda, yoki millatning moddiy va ma'naviy manfaatlariga zid ikkinchi bir tomondan zo'ravonlik xarakatlar yuzaga keltirilgan holatlarda

⁴ Мусурмонова О. Маънавий қадриятлар ва ёшлар тарбияси. – Т.: Ўқитувчи, 1996. – 192 б.

⁵ Толипов Ў.К., Усмонбоев М.Х. Педагогик технология: назария ва амалиёт. – Т.: Фан, 2005. – 206 б.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

namoyon bo'ladi. Sha'ni, qadr-qimmat, or-nomusi, obro'-e'tibori va manfaatlari poymol etilgan millat vakllari qaysi lavozimda xizmat qilishi, boy yoki qambag'al bo'lishidan qat'iy nazar yagona umummilliy kuch bo'lib birlashadilar va o'zligini himoya qiladilar.

Shu tariqa milliy o'z-o'zini anglash millat manfaatlarini himoya qiluvchi moddiy kuchga aylanadi.

Bundan tashqari u faqat milliy manfaatlarini himoya qilish bilan cheklanmaydi, shuning bilan u turli "og'riqlar" yoki muammolar yuzaga kelgan sharoitda ham millatni "harakatga" keltiradi va uni birlashtirib turadi. Xususan, millat taraqqiyoti jarayonida iqtisodiy, ijtimoiy-siyosiy sohalarida yuzaga keladigan muammolarni hal qilishda ham u millatni birlashtiradi va uni umummaqsadlar yo'lida xarakterga keltiradi, u har qanday millat uchun yetakchi belgi hisoblanadi. U o'zining katta salohiyati bilan millat uchun zarur asosiy o'ziga hos belgilari tizimida yetakchi o'rinni egallaydi. U millatning yuragi, qalbi tomirlarida oqadigan qoni va gavdasini tik ushlab turuvchi jonidir. O'zligini anglashdan to'xtagan yoki undan mahrum bo'lgan har qanday millat o'limga mahkumdur. U o'zga millatlarga "em" bo'lib ularga assimilyatsiya orqali qo'shib ketadi va oqibatda yo'q bo'lib ketadi.

Xuddi shu ma'noda ham milliy o'z-o'zini anglash millat abadiyligini ta'minlashning ham muhim omilidir. Chunki bu salohiyat millatning o'ziga xosligini va manfaatlarini himoya qilib turadi.

O'zbek millati taraqqiyotida milliy o'z-o'zini anglash jarayoni Chor imperiyasi bu o'lkani bosib olgandan keyin o'z mustaqilligi uchun kurashlarda, sho'rolar tuzumi sharoitida o'zligini saqlab qolishi uchun bo'lgan harakatlarda moddiy kuchga aylanib keldi. U o'zbek millatining o'z mustaqilligini ko'lga kiritgandan keyin o'z-o'zini anglashi ikki yo'nalishda: sobiq sho'rolar davrida toptalgan urf-odatlarini, qadr-qimmatini, qadriyatlarini tiklash va ma'naviy meroslarini o'zlashtirishgach bo'lgan harakatlarda va yangi adolatli demokratik huquq ustivorligiga asoslangan jamiyat kurash bilan bog'liq bo'lgan islohatlarni o'tkazish jarayonida yuzaga kelgan muammolarni hal qilishdagi umumiy milliy harakatlarda namoyon bo'lmoqda⁶.

Millatning o'zligini anglashdagi muhim jihatlar shundan iboratki, ijtimoiy tuyg'u orqali har bir xalq, millat o'zining kimligini, nimaga qodir ekanligini, qadr – qimmatini bilib oladi, or – nomusini o'ylaydi, milliy g'urur va iftixor tuyg'usini his qiladi, qaysi yo'l mamlakatni sivilizatsiyaga olib borishini teran anglaydi. Milliy o'zlikni anglash xalqni uyg'otuvchi, faol harakatga keltiruvchi, ijtimoiy uyushtiruvchi kuchga ega.

Milliy o'z-o'zini anglashning rivojlanib borishi yoki bu millatni o'zga millatlardan ajralib ketishiga olib kelmaydi, balki o'zligini anglagan millatlarning ma'rifatlashgan hamkorliklarning mustahkamlanib borishiga yordam berib boraveradi.

Millatlarning o'z-o'zini anglashi qanchalik mustahkam bo'lsa, uning o'z muammolarini hal qilish imkoniyati ham kengayib boradi. O'z-o'zini anglagan millatning milliy birligi ham mustahkam bo'ladi. Milliy birlik o'z navbatida millat abadiyligining barqaror muhim sharti hisoblanadi. Shuning uchun mustaqillik sharoitida o'zbek xalqining o'z-o'zini anglashini rivojlantirish davlat siyosati darajasiga ko'tarilgandir.

⁶ Ўзбекистонда ижтимоий-фалсафий фикрлар тарихидан. - Т.: Ўзбекистон", 1995, 225-бет.

Adabiyotlar:

1. Халқ сўзи. Ўзбекистон Республикаси Президентининг “Олий Мажлисга Мурожаатномаси” 2020 й. 30 декабрь №-255 сон
2. Мирзиёев Ш.М. Буюк келажакимизни мард ва олийжаноб халқимиз билан бирга курашимиз. – Тошкент: Ўзбекистон, 2017. – 537 б.
3. Ибрагимов Х., Абдуллаева Ш. Педагогика. Ўқув қўлланма. – Т.: Фан, 2004. – 182 б.
4. Мусурмонова О. Маънавий кадриятлар ва ёшлар тарбияси. – Т.: Ўқитувчи, 1996. – 192 б.
5. Толипов Ў.Қ., Усмонбоев М.Х. Педагогик технология: назария ва амалиёт. – Т.: Фан, 2005. – 206 б.
6. Ўзбекистонда ижтимоий-фалсафий фикрлар тарихидан.- Т.: Ўзбекистон”, 1995, 225-бет.
7. Jumaniyozov X.S. U.Nigmanova, A.Rasulova, O.Abdug‘aniyev. The essence of the phenomena of extremism and terrozism in the conext of globalization and its to the stabilitu of the internatbional communitu. ANNALS OF FJREST RESEARCH. Ann. For. Res. 65(1): 9173-9179, 2022. ISSN: 18448135, 20652445.
8. Jumaniyozov X.S. The role and significance of geo-age factors in social development. Conference on the role and importance. of science in the modern world Volume 01, Issue 04, 2024.
9. Jumaniyozov X.S. Early Geopolitical Teachings in Ancient China and India and Their Principles. Journal of Advanced Zoology ISSN: 0253-7214 Volume 44 Issue S-2 Year 2023.
10. Abduganiyev OT FACTORS AFFECTING THE DEVELOPMENT OF SOCIALLY ACTIVE CITIZENSHIP COMPETENCE IN STUDENTS //E Conference Zone. - 2022. - S. 10-13.
11. Oglu AOT Pedagogical Conditions And Mechanisms Of Development Of Socially Active Civil Competence In Students //Turkish Journal of Computer and Mathematics Education. – 2021. – T. 12. – No. 7. – S. 433-442.
12. Abdug‘ Aniyev O. DEVELOPMENT OF COMPETENCE OF GENERAL HUMAN VALUES IN STUDENTS ON THE BASIS OF A CULTURAL STUDY APPROACH //Science and innovation. - 2023. - T. 2. – no. Special Issue 9. – S. 316-319.
13. O‘G , Abdug‘Aniev Azod Tursunboy. "PEDAGOGICAL-PSYCHOLOGICAL OPPORTUNITIES OF DEVELOPING SOCIALLY ACTIVE CITIZENSHIP COMPETENCES IN STUDENTS." *Science and innovation* 2. Special Issue 5 (2023): 708-713.
14. Tursunboyevich, Abduganiyev Azod. "Development of socially active citizenship competence in students and youth in continuous education." (2022).

RESPONSIBILITY FOR ROBBERY OF OTHERS' PROPERTY USING COMPUTER TOOLS

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Abstract: This article explores the issue of cyber robbery—unlawful theft of digital property using computer tools—by examining the legal, ethical, and preventative responsibilities associated with it. Unlike traditional theft, cyber robbery allows criminals to steal financial assets, data, and intellectual property remotely, using tactics like phishing, malware, and ransomware. While international frameworks and national laws aim to prosecute offenders, challenges such as anonymity, evolving technology, and cross-jurisdictional complexities hinder effective enforcement. Organizations are also responsible for protecting data and can face legal consequences for negligence.

Keywords: cyber robbery, digital theft, computer crime, cybersecurity, legal responsibility, ethical responsibility, phishing, ransomware, international cooperation, data protection.

With the advent of the digital age, the nature of robbery has evolved far beyond physical theft and into the virtual realm, posing new challenges for law enforcement, lawmakers, and society at large. Cybercriminals today leverage computer tools to gain unauthorized access to individuals' and organizations' property, stealing sensitive data, financial assets, and intellectual property with little more than a few keystrokes. The responsibility for such acts is multifaceted, involving both individual culpability and systemic issues within our digital infrastructure. Understanding the nature, impact, and legal responsibilities associated with cyber robbery is essential for developing strategies to prevent such crimes and to hold offenders accountable. Traditional robbery is characterized by the unlawful taking of property from another person with intent to permanently deprive the owner of its use. Cyber robbery, while lacking physical confrontation, follows a similar principle but is executed through digital means. The evolution of technology has introduced numerous forms of cyber robbery, including identity theft, hacking, phishing, malware distribution, and ransomware attacks. Each form leverages a distinct method to infiltrate systems, obtain unauthorized access, and transfer or erase valuable data or funds. Unlike traditional crimes, cyber robbery can be committed remotely, with the attacker often concealed behind sophisticated methods that obscure their identity, complicating efforts to trace and prosecute.

National Laws on Cyber Robbery. Countries worldwide have enacted cybercrime legislation to address the growing threat of digital theft. For example, in the United States, the Computer Fraud and Abuse Act (CFAA) criminalizes unauthorized access to computer systems, while the Electronic Communications Privacy Act (ECPA) protects electronic communications from interception. Similarly, the United Kingdom's Computer Misuse Act criminalizes unauthorized access to computer systems and data alteration. These laws have been instrumental in holding cyber robbers accountable, yet challenges remain, particularly in terms of cross-border cybercrime.

International Cooperation in Cybercrime Prosecution. Given the cross-jurisdictional nature of cybercrime, international cooperation is often necessary to pursue offenders. The

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Budapest Convention on Cybercrime, established by the Council of Europe, is one of the most comprehensive international treaties on the subject. It provides a framework for nations to collaborate on cybercrime investigations, sharing information and resources to apprehend and prosecute cybercriminals. Although many countries are signatories, others, such as Russia and China, have abstained, which complicates international cooperation. This divergence highlights the need for globally standardized regulations and collaboration to effectively address cyber robbery.

Corporate Responsibility and Liability. Organizations also bear responsibility for safeguarding the data they hold. Failure to implement adequate cybersecurity measures can result in legal liability if a breach occurs. Companies are required to comply with regulations like the General Data Protection Regulation (GDPR) in the European Union, which mandates strict data protection measures. Non-compliance can lead to severe penalties, even if the company is itself a victim of cyber robbery. This creates a dual responsibility: companies must both protect their assets and those of their clients, and they must cooperate with authorities in the investigation and prosecution of cybercrimes. In some cases, companies may also pursue civil actions against perpetrators to recover stolen assets, though the success of such actions depends on the ability to identify the offender.

Challenges in Prosecuting Cyber Robbery. One of the primary obstacles in prosecuting cyber robbery is the anonymity afforded to perpetrators by the internet. Cybercriminals use various techniques to mask their identity and location, such as VPNs, proxy servers, and the dark web. This anonymity not only makes it difficult to identify and apprehend offenders but also complicates the attribution of responsibility. In some cases, law enforcement agencies may successfully trace the origin of an attack, only to find that it originated in a country with lax cybercrime laws or limited cooperation with international authorities. Another challenge is the rapid evolution of technology, which outpaces legislative processes. Laws that may have been effective five years ago may now be obsolete, leaving legal gaps that cybercriminals exploit. Additionally, the technical complexity of cyber robbery cases demands specialized knowledge on the part of law enforcement and the judiciary, which may not always be available. This can lead to inconsistencies in the prosecution and sentencing of cybercriminals.

Ethical Responsibility and Societal Impact. Beyond legal responsibility, there is an ethical dimension to cyber robbery that reflects on the integrity of both individuals and organizations in the digital age. Ethical responsibility includes respecting others' privacy, securing personal and organizational data, and avoiding exploitation of digital vulnerabilities. Those who commit cyber robbery disregard these ethical principles, often rationalizing their actions as victimless due to the absence of physical interaction. However, the impact of cyber robbery is far from victimless. It can devastate individuals financially, tarnish the reputation of businesses, and erode public trust in digital systems. Cyber robbery also imposes broader societal costs, as individuals and businesses must invest increasingly in cybersecurity measures. This creates a digital arms race where criminals develop new techniques to bypass security protocols, prompting organizations to continually enhance their defenses. The ethical responsibility to act with integrity in the digital realm is crucial in fostering a safe online environment, particularly as society becomes more reliant on digital systems for everyday activities.

The Role of Education and Prevention. Prevention is a critical component of addressing cyber robbery, as reactive measures alone are insufficient to curb the rising threat. Educational

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

initiatives aimed at increasing awareness of cyber threats and teaching individuals and organizations how to protect themselves are essential. For individuals, understanding the risks associated with phishing scams, password reuse, and unsecured networks can significantly reduce vulnerability to cyber robbery. For organizations, investing in cybersecurity training for employees, implementing robust access controls, and maintaining up-to-date security software are all vital preventative measures. Law enforcement agencies also play a role in prevention through public awareness campaigns and initiatives to educate the public on recognizing and reporting cybercrimes. Such programs can empower individuals to take proactive steps in safeguarding their digital property and contribute to a collective resilience against cyber robbery.

Conclusion. Responsibility for cyber robbery lies primarily with the individuals who commit these crimes, but it also extends to organizations, lawmakers, and society as a whole. Legal frameworks are essential in holding perpetrators accountable, yet they must evolve to address the rapid pace of technological advancement and the global nature of cybercrime. International cooperation, comprehensive national laws, and corporate accountability are all necessary components of an effective response. However, prevention through education and proactive cybersecurity measures is equally important in minimizing the impact of cyber robbery. Cybercrime may be a complex and evolving issue, but through a combination of legal accountability, ethical responsibility, and public awareness, society can better protect itself against this pervasive threat. The responsibility to prevent and address cyber robbery ultimately rests with everyone involved in the digital ecosystem, from individual users to international governing bodies.

References:

1. Grabosky, P. N. (2007). The Internet, technology, and organized crime. *Asian Journal of Criminology*, 2(2), 145-161. <https://doi.org/10.1007/s11417-007-9028-9>
2. Holt, T. J., & Bossler, A. M. (2014). Cybercrime in progress: Theory and prevention of technology-enabled offenses. *Journal of Criminal Justice Education*, 25(4), 443-460. <https://doi.org/10.1080/10511253.2014.903878>
3. Levi, M., & Williams, M. (2013). Multi-agency partnerships in cybercrime reduction: Mapping the UK information assurance network cooperation space. *Journal of Financial Crime*, 20(4), 386-398. <https://doi.org/10.1108/JFC-04-2013-0022>
4. McGuire, M., & Dowling, S. (2013). Cybercrime: A review of the evidence. Research Report 75. Home Office. Retrieved from <https://assets.publishing.service.gov.uk>
5. Wall, D. S. (2007). Cybercrime, media, and insecurity: The shaping of public perceptions of cybercrime. *International Review of Law, Computers & Technology*, 21(3), 203-209. <https://doi.org/10.1080/13600860701588694>

THE IMPORTANCE OF BEGALI KASIMOV'S WORKS IN COVERING THE
PROBLEM OF EDUCATIONAL REFORM IN THE MEDIA

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Abstract. The article analyzes the personal concept of Professor, Doctor of Philological Sciences Begali Kasimov, as well as the scientist's articles, such as fidelity to the truth, impartial analysis of the problems of Uzbek literature during the period of national Renaissance, preparation of high-quality textbooks, expressed higher and comprehensive schools, presentation of Uzbek science to the world.

Keywords: literary studies, literature, nation, scientist, period, article, opinion, Independence, nation, criticism, media, education, pen, magazine, research, instinct, lesson, research, direction, manuscript, great grandfather, reform.

The study of social problems is the main criterion of philosophy, aesthetics, art and literature from social fields. Mass media and all their genres can be included in these social spheres. Since mass media focus on the development of society and positive solutions to human problems, this is a natural process that covers almost all spheres.

The development of a country is determined by its youth, the potential of tomorrow's mature personnel. This can be achieved by modernizing education, setting the right personnel policy, updating the content of taught subjects, enriching them with elements of modern methods, focusing on interdisciplinary integration.

Every person who feels love for the nation, a sense of belonging to the Motherland, has an instinct to care about its future. The personal concept of Doctor of Philological Sciences, Professor Begali Kasimov also entered the field with the aim of being faithful to the truth, impartially analyzing the problems of Uzbek literature during the period of national revival, preparing high-quality textbooks for higher and comprehensive schools and presenting Uzbek science to the world.

The issue of education reform is a complex process that cannot be postponed, and if it is ignored, decades will be lost. A number of journalistic articles by the scientist have been published in the media, concerning the introduction of innovations into the education system, the organization of modern trends and specializations. In addition to textbooks for grades 5, 7, 9 and 10, he also prepared a textbook on national literature of the Renaissance for higher education institutions with 30 printing plates. He was extremely serious in all matters, incomparably devoted to his profession.

Literary scholar Kazakboy Yoldoshev in his article "Kongil Yolcini" describes the scholar as follows: "Brother Begali was a distinguished scholar of the Turkic world, a man and an expert who raised the honor and reputation of the Uzbeks. That is why he was sometimes invited to Kazakhstan, sometimes to Turkey, sometimes to Tatarstan, and they listened to what he said. He was a scholar who thought on a global scale. That is why he believed that science should not be confined to its nest. I directly observed and witnessed at a number of conferences and personal conversations that the scholar knows Turkish literature better than Turkish scholars, the history

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY**VOLUME-4, ISSUE-11**

and literature of Crimea than Crimean specialists, and the history of Tatar literature better than the Tatars" [1].

In the 3rd issue of the journal "Language and Literary Education" for 1998, an important article by the scholar was published, devoted to educational policy, under the title "Current issues of teaching the history of Uzbek literature in higher education". The article is notable for its richness in reasoning, developed proposals, as well as the need to carry out urgent reforms in the field of education. The article is remarkable for its richness in reasoning, developed proposals, and the need for urgent reforms in the field of education. In the introduction to the article, the scientist regretfully notes that rare examples of rich Uzbek literature were scattered across different regions as a result of unprecedented disasters that befell the people, or rather, they were taken away. Thus, it is clearly written that from our most ancient written manuscripts to several copies of newspapers, magazines and printed books of the early 20th century, they spread to Europe, Eurasia and India. In particular, he emphasizes that beautiful, unique and rare examples of magnificent Uzbek literature are in museums in France, England, Austria, Russia, Turkey, Iran, India. In particular, he regrets that we do not have the original works of Alisher Navoi, even his autograph. "Tatar orientalists in Finland report that in a number of their libraries there are countless Uzbek books and examples of the press relating to the history and literature of Turkestan, dating back to the times of Tsarist Russia and not yet recorded anywhere" [2]. It seems that in the process of preparing this article, the scientist is trying to indicate the exact geographical location of the sources of Uzbek literature. He hopes that such information will be passed on to researchers who, by the will of fate, end up in distant Finland. The scientist's inner desire is to find, read, transform and convey these sources to the public. Another reason for providing this information is the recognition of the growing interest in oriental studies, including Uzbek studies, in world education. He is especially proud of the creation of Turkology centers, Uzbek language and literature departments in some European universities in recent years. At a time when citizens of distant countries are looking for the roots of human history and civilization, they encourage science from all over the world. Specialists in the Uzbek language and literature work in Germany, the United States of America, and the foreign country of Japan. In addition, in the article devoted to this educational system, the scientist reports that there is a need to get acquainted and exchange experiences with scientists directly conducting research on the Uzbek language and literature in other higher education systems of the world, in research centers. At this point in the article, another interesting piece of information is provided: "In 1993, Edward Allworth contacted the Translation Center of Uzbekistan and sent the addresses of 33 well-known bookstores located in different cities of the world, and told them that they would buy any book related to Uzbek literature." If there is very clear information for visualization, secondly, in the introduction to the article there is also a reasonable idea of the study of Uzbek literature on a global scale. The fact that the scientist tries to explain each sentence, idea, show its root is a reflection in his personality of the concept of responsibility, respect for work and devotion to science.

He was glad that in the first 10 years of independence, the issue of creating textbooks for higher education was still relevant. To achieve this goal, he also proposed that the curriculum and scientific programs be discussed by relevant experts, and testing measures be developed.

The scientist's concern is more clearly seen in the opinion that each area should work together, not separately. The homogeneity of the educational system, especially in the teaching of Uzbek literature, which has been preserved for many years, that it has not gone beyond the

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

expertise based on "socialist realism" in the analysis of works of art, currently requires the development of various methods of Western literary criticism and their use in our country from the point of view of nationalism. It is also said here that the teachers-methodologists, general education teachers bear a great responsibility, updating knowledge, applying new methodological methods.

Although the eighth year of independence is still ongoing, he criticized the lack of articles on the methods of teaching Uzbek literature and the principles of studying works related to the history of our literature. This criticism is justified, because methodological support is needed for teachers working in remote regions and regions. The approach to the artistic text, the values expressed in it, Islamic philosophy, national spirit, scientific articles that correctly guide the analysis and interpretation of patriotic feelings can also perform the function of the "Teacher's Book" in a certain sense even temporarily. Considering the reform of the literary education system an urgent task, the scientist also made proposals that could well become the subject of new scientific works. "From the point of view of periodization of the history of our centuries-old literature, determining its stages, determining development trends, today there are no works written on the content and essence of our independence. The concept of teaching Uzbek literature in universities has not been created" [2]. This article, written almost twenty-four years ago, gives the impression of foreseeing today's reforms. That is, academic independence is provided in creating curricula and scientific programs in accordance with a specific concept of a higher education institution, put forward by a scientist a quarter of a century ago. The most important thing is that the teacher's thoughts fully correspond to today's speech. "It is probably better that there is no single program on Uzbek literature in universities. Because, in the end, each higher education institution should have its own image" [2]. The above ideas can be applied not only to literary education, but to all areas of education. It would not be an exaggeration to say that the answer to such bright thoughts and dreams are the current reforms of pedagogical universities.

The scientist said that he should have full knowledge of the work of Alisher Navoi, teach and interpret ghazals at the Higher Education Institution, which prepares a pure philologist and specialist in Uzbek language and literature. One of them is the issue of literature and its place in society. It is known that there is a difference in the approach of the West and the East to the terminological interpretation of literature. The Eastern approach interprets literature in connection with morals. This revolution was made by our ancestors at the beginning of the 20th century. Indeed, if we take the literature of the next one and a half thousand years, almost all works are connected with one main issue - man and his morals. The dominance of this idea did not deny high artistry [2].

Also, B.Kasimov's views on the system of education, teaching, studying and covering Uzbek literature were continued in many articles, speeches and lectures. For example, his views on the art of poetry, which must be studied, the methodology that forms the ability to find examples of works of art, the technique of working with classical texts, the need to know the old Uzbek script, knowledge of analysis methods deserve attention.

Begali Kasimov paid attention not only to the problems of historical research, but also to almost all issues of literary education. For example, the field of literary criticism in the years of independence emphasizes that it should develop in a new way. In the criticism of the post-Soviet period, only those works prevailed in which the motives of serving the government and the party, the leadership of the figure of the "great master", the glorification of the working man prevailed.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY**VOLUME-4, ISSUE-11**

Non-compliance with the above criteria was subjected to harsh criticism, as a result of which, as can be seen in the example of the work of Abdulla Kahhor, versions of large canvas works, such as "Sarob", were first censored, and in addition, versions with auto-censorship appeared. B.Kasimov, speaking about the problem of literary criticism, emphasizes that its task is not to judge, but to sort. He supported his opinion with quotes from the article by Mahmudhodja Behbudi "Criticism sorts".

With his scientific views, he proved that in a work of art, the idea and content must be harmonious, otherwise the artistic standard will be violated. In particular, classical sources emphasized that the theme of love in the works of Alisher Navoi should be considered not only from a secular point of view, but also from a theological-mystical one, but this is not a strict measure. He gently criticized the fact that the views in subsequent studies remain one-sided, and considered it acceptable to express his own views: "In addition, one should not look for only divine content in Navoi's interpretation of love, as we have done so far. They mainly look for secular content. However, in some articles and brochures, there is a tendency towards this. In this, one should proceed from Navoi's own views on metaphorical love and true love. The border between these two concepts, both in his views and in his work, are, in our opinion, not mutually exclusive, but rather complementary phenomena. "Their boundaries are sometimes imperceptible" – a tone of impartiality prevails in his thoughts.

In addition, he assessed the introduction of new sciences, the development of their programs and textbooks as a product of historical conditions. "In particular, it was possible to study modern Uzbek literature, which was formed at the end of the last century and gave its first fruits at the beginning of the 20th century, and in the 20s, despite the strong pressure of time, it became a full-fledged literature" - he boldly wrote his thoughts that he could not express for years. The introduction of the term "Uzbek literature of national revival" into science and the creation of a scientific school on this basis are closely associated with the name of Professor Begali Kasimov. "According to our ancestors, language and literature are the immortal soul of the nation, the mirror of its life, a teacher-educator. It passes on to generations the way of life of its ancestors, moral philosophy, all the good and bad sides, educates generations in the spirit of the traditions of the nation, connects the centuries. From Behbudi to Fitrat and Cholpon, from Avlani to Hamza and Kadiri, the purpose and content of literature were interpreted in this way, and this approach became fixed and a priority" [2]. Therefore, the scientist emphasized that through this idea, modern literature is an important bridge between the past and present development, and its services in conveying the unique heritage of ancestors to generations in new ways and forms.

In other articles and interviews, the scientist outlined such priority tasks as teaching Uzbek literature of the period of national revival, literary studies in general, development of the education system, intensive continuation of the issue of training mature personnel. In his speeches in the press, he also gave proposals and recommendations on periodization, methods of teaching literature.

Another article entitled "The education of the generation is the education of the nation" was published in the newspaper "Fidokor" on June 14, 2001, "National University: high status, bright prospects" in the issue of the newspaper "Literature and Art of Uzbekistan" on February 1, 2000, in the October 10, 2002 issue of this newspaper, "Literature and its periodization", "To wake up is to live in harmony with the world", "The role of national literature in educating the growing generation in the spirit of national patriotism", "National program of personnel training:

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY**VOLUME-4, ISSUE-11**

international cooperation in the field of personnel training with education" (speech at the scientific council of the National University of Uzbekistan, July 2, 1998 - emphasis is ours - Sh.Kasimov), the issue of national ideology and personality education", "Language is the honor of the nation", "Creation of new textbooks should become a state policy" (People's Word, 1992, June 12), "Creation of new textbooks" (People's Word, 1992, December 12), various aspects of the education system studied from the angles of journalistic and literary studies.

The scientist himself worked tirelessly to fill the gaps in textbooks, with the ideas he proposed in his articles. He prepared and published textbooks, teaching aids, and methodological guidelines for students and teachers of higher and comprehensive schools. The following table provides information on the teaching aids created by the scientist:

Table 1

Textbooks and teaching aids prepared by Begali Kasymov for higher and comprehensive schools

№	Name	Publisher, type and year of publication	HEI	Comprehensive school
1	Course work. Uzbek literature	ToshSU publishing house, methodological manual. 1985. 3.0 p.p.	For students of the Uzbek philology faculty of universities of the 3rd year	
2	Life and creative activity of Ghulam Karimov	T.: 1989, co-author	bibliographic guide for philological students.	
3	Navoi Khan	T.: Teacher, 1993. 20.0 p.p.	Methodical guide	
4	Uzbek literature	T.: Teacher, 1993. 20.0 p.p.		Complex for class 10
5	Abdulla Avloni	History of Uzbek pedagogy. T.: Teacher, 1997, 0.2 p.p.	Guide to HEI	
6	Uzbek literature	Teacher, 1999. 25.0 p.p.		Complex for class 10
7	Literature	T.: Writer, 2001, 20.16 p.p. (co-author).		Textbook-complex for 7th grade
8	Uzbek literature	T.: Literature and Art, 2001, (co-author).		Textbook for grade 10, 3rd edition
9	Uzbek literature	T.: Literature and Art, 2000. 23.7 p.p. (co-author); 3rd		Textbook for 10th grade

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

		edition, T.: Literature and Art, 2001.		
10	Literature	T.: Teacher, 2000. 20.16 p.p. (co-author), 2nd ed.		Textbook for 7th grade
11	Literature	T.: Spirituality, 2002, 18.0 p.p. (co-author).		Textbook for 9th grade
12	Teacher's book	T.: Spirituality, 2002, 12.0 p.p. (co-author).		9th grade textbook set, methodology

The table shows that the scientist, along with his scientific work, wrote a number of textbooks and contributed to the development of national education.

Being both a scientist and a publicist with a sharp pen, he studied the lessons of the past in his articles, simply and fluently explained the ideology of national independence, and educated the younger generation with high spirituality and personal values. He reflected his thoughts about the education system in a combination of emotional and logical thinking.

In the work of a scientist, the concept of Man is always formed on the basis of truth, selflessness, spiritual and moral criteria. That is why we see that these three things played a big role in his words, articles and activities. When approaching issues of the education system and literature, the personality of an individual intellectual, his social status, devotion to duties and tasks are clearly manifested. In essence, these are the dreams and ideals of a phenomenon responsible for the development of society.

How we have witnessed the renewal of the media and public thinking: the role of the Uzbek national literature of the Renaissance in this matter is largely facilitated by periodical journalism, scientific and literary environment, conferences devoted to the interpretation of social phenomena.

REFERENCES:

1. Qozoqboy Yo'ldosh. Ko'ngil yolqini // Turkiston. 2004-yil 9-oktyabr.
2. Qosimov B. "Oliy maktabda O'zbek adabiyoti tarixini o'qitishning dolzarb masalalari" // "Til va adabiyot ta'limi", 1998 y № 3.
3. Maktab sinovlar maydoni emas // O'zbekiston adabiyoti va san'ati, 1992. 13-mart, 11-son. 0,2 b.t.
4. Yangi darsliklar yaratish davlat siyosatiga aylanmog'i lozim // Xalq so'zi, 1992, 12-iyun. 0,4 b.t.
5. Yangi darsliklar yaratish // Xalq so'zi, 1992, 12-dekabr. 0,1 b.t.

SOME REFLECTIONS ON THE USE OF INTERDISCIPLINARY COMMUNICATION IN MATHEMATICS EDUCATION

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Abstract: Interdisciplinary communication is increasingly recognized as a key component in modern education, where subjects are interconnected, and real-world applications demand a blending of knowledge from multiple fields. Mathematics, often perceived as an isolated or abstract discipline, can greatly benefit from interdisciplinary approaches that integrate concepts from sciences, arts, and social sciences. This paper explores how interdisciplinary communication enriches mathematics education by fostering a more comprehensive understanding, enhancing student engagement, and developing critical thinking skills. By examining practical strategies and case studies, this article seeks to shed light on the transformative potential of interdisciplinary collaboration in mathematics education.

Keywords: interdisciplinary communication, mathematics education, student engagement, critical thinking, project-based learning, real-world applications, curriculum design.

Mathematics has historically been perceived as a standalone discipline, with rigid boundaries and distinct methodologies. However, as our world becomes more interconnected, the need for interdisciplinary knowledge has never been more apparent. Complex problems, from climate change to technological advancements, require solutions that involve the application of mathematical knowledge in combination with insights from various other disciplines. Integrating interdisciplinary communication in mathematics education not only enhances students' grasp of mathematical concepts but also prepares them for future challenges in a multifaceted world.

The Importance of Interdisciplinary Communication in Education. Interdisciplinary communication refers to the collaboration and integration of knowledge, methods, and perspectives across different fields. In the context of education, interdisciplinary approaches break down traditional subject boundaries, enabling students to draw connections between seemingly unrelated topics. For instance, a student learning about exponential growth in mathematics may better understand this concept when it is applied to population studies in biology or finance. Such integration helps students see mathematics as a tool with real-world applications rather than an isolated subject limited to abstract theories. Moreover, interdisciplinary communication encourages collaboration among educators and students from different backgrounds, leading to a more holistic learning environment. Mathematics educators, for example, can collaborate with science and engineering teachers to design curricula that illustrate the relevance of mathematical concepts in scientific and technological contexts. This approach not only enriches the educational experience but also fosters critical thinking, creativity, and problem-solving skills.

Enhancing Student Engagement and Interest in Mathematics. One of the major challenges in mathematics education is student disengagement, often rooted in the perception that

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

mathematics is difficult, abstract, and unrelated to daily life. By incorporating interdisciplinary communication, educators can make mathematics more accessible and interesting to students. For example, combining mathematics with art through geometric design projects can show students the beauty and creativity in math. Similarly, integrating mathematics with history can reveal fascinating insights into how mathematical discoveries shaped human civilization. Such interdisciplinary projects have been shown to increase student motivation and engagement. When students see how mathematics applies to their interests and hobbies, they are more likely to develop a positive attitude toward the subject. A student interested in music, for example, may become intrigued by the mathematical structures in musical theory, such as rhythm and scales, and begin to see mathematics as a means to explore personal passions. By breaking down the barriers between subjects, interdisciplinary communication helps students recognize the value and relevance of mathematics in their lives.

Building Critical Thinking and Problem-Solving Skills. Interdisciplinary communication in mathematics education fosters critical thinking and problem-solving skills by exposing students to diverse perspectives and methodologies. In a traditional math classroom, students may focus primarily on solving specific types of problems with pre-determined answers. However, real-world issues are rarely confined to one discipline, requiring a blend of knowledge from various areas. For instance, consider a project that combines mathematics, environmental science, and economics to address climate change. Students might analyze data on carbon emissions, calculate the economic impact of pollution, and explore sustainable solutions. Such a project requires them to apply mathematical knowledge while considering environmental and economic factors, thus fostering critical thinking and complex problem-solving abilities. Through interdisciplinary projects, students learn to approach problems with an open mind, evaluate information from multiple sources, and think creatively to find solutions. This skill set is invaluable in today's rapidly evolving world, where adaptability and innovation are essential.

Practical Strategies for Implementing Interdisciplinary Communication in Mathematics Education. While the benefits of interdisciplinary communication in mathematics education are clear, implementing this approach requires thoughtful planning and collaboration. Here are some practical strategies to integrate interdisciplinary learning in math classrooms effectively:

1. **Collaborative Curriculum Design.** Mathematics teachers can collaborate with colleagues from other departments to design joint curricula that incorporate relevant mathematical concepts. For example, a biology teacher and a math teacher could create a unit on genetics that involves statistical analysis. By working together, educators can create lessons that are both rigorous in mathematical content and relevant to the other discipline.

2. **Project-Based Learning.** Project-based learning (PBL) is an ideal method for interdisciplinary education. In a PBL framework, students engage in long-term projects that require them to apply knowledge from multiple disciplines. For instance, a project on building a model bridge could integrate principles of physics, mathematics, and engineering. Through such projects, students experience how math functions as a tool in larger, practical contexts.

3. **Use of Real-World Data.** Using real-world data is another effective way to implement interdisciplinary communication. Teachers can access data sets from various fields such as economics, health, and social sciences and design math problems around these data. For example, students could analyze population growth data, trends in global health, or financial

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

markets. This approach demonstrates the power of mathematics in interpreting real-world phenomena, making the subject more tangible and relevant.

Case Studies: Successful Interdisciplinary Approaches. One successful example of interdisciplinary communication in mathematics education is the “Mathematics Across the Curriculum” (MAC) initiative, which encourages the integration of math with humanities, arts, and social sciences. Through MAC programs, students have engaged in projects such as analyzing poetry meter through mathematical patterns or studying the geometry of historical architecture. These projects highlight the applicability of mathematical concepts beyond STEM, fostering a well-rounded understanding of the subject. Another notable case is the implementation of STEM (Science, Technology, Engineering, and Mathematics) programs that integrate mathematics with other scientific disciplines. Schools with strong STEM programs often incorporate interdisciplinary projects that require students to solve real-world problems, such as designing sustainable energy solutions or developing engineering prototypes. These projects not only deepen students’ understanding of mathematics but also emphasize the importance of collaboration and critical thinking.

Conclusion. Interdisciplinary communication is an invaluable approach in mathematics education, offering a multitude of benefits, from increased student engagement to the development of essential life skills. By integrating mathematics with other disciplines, educators can create a richer and more meaningful learning experience that prepares students for the complexities of the modern world. The implementation of interdisciplinary strategies, however, requires collaboration, creativity, and a willingness to break down traditional subject boundaries.

References:

1. Boix Mansilla, V. (2010). Learning to synthesize: The development of interdisciplinary understanding. In R. Frodeman, J. T. Klein, & C. Mitcham (Eds.), *The Oxford Handbook of Interdisciplinarity* (pp. 288-306). Oxford University Press.
2. English, L. D. (2016). Interdisciplinary STEM education. In *Mathematical Education Research Journal*, 28(1), 1–3. <https://doi.org/10.1007/s13394-016-0162-0>
3. Jakobsen, A., Mistele, J. M., & Evans, M. A. (2017). A study of interdisciplinary learning: Mathematics in an integrated STEM project in engineering design. *International Journal of Education in Mathematics, Science and Technology*, 5(3), 223-235. <https://doi.org/10.18404/ijemst.296035>
4. Klein, J. T. (2005). Interdisciplinary teamwork: What goes wrong and why. In P. S. Marshall & P. Prosser (Eds.), *Interdisciplinary inquiry and the liberal arts* (pp. 80-95). University of Vermont Press.
5. Niss, M., & Højgaard, T. (2019). Mathematical competencies revisited. *Educational Studies in Mathematics*, 102(1), 9–28. <https://doi.org/10.1007/s10649-019-09938-2>

CHARACTERISTICS OF MODERN EDUCATIONAL TECHNOLOGIES, ENSURING QUALITY OF EDUCATION

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Abstract. The main modern technologies aimed at ensuring quality education are characterized by transition. The article discusses innovations aimed at ensuring the quality of education, modern technologies aimed at improving the quality of education.

Keywords: quality of education, technology, interactive, system, feature, modeling.

Currently, many technologies are described in the literature. In order to better understand the nature of technologies, it is important to find reasons for their organization and systematization. Various authors suggest as such bases: target settings, content of teaching, nature of interaction between teacher and students, method of managing students' knowledge activities, scope of application.

The main modern technologies aimed at ensuring quality education are characterized by transition:

- from learning as a function of memorization to learning as a process of mental development that allows you to use what you have learned;
- from a purely associative, static model of knowledge to dynamically structured systems of mental actions;
- from focusing on the average student to differentiated and individualized educational programs;
- from external motivation for learning to internal moral-will regulation.

Today, the principle of variability has been announced in education, which makes it possible to choose and design the pedagogical process according to any model, including author's models. At the same time, it is important to establish a unique dialogue between different pedagogical systems and teaching technologies, to test new forms in practice.

The effectiveness of a particular technology largely depends on who implements certain approaches in teaching practice. A modern teacher, as a technologist of the educational process, should freely use a wide range of innovative technologies and not waste time to discover what is known. Today, it is impossible to become a pedagogically competent specialist without learning all the comprehensive arsenal of educational technologies.

The most popular and widely used are: person-oriented education and educational technology, pre-profile training and specialized educational technologies, project activities, flexible educational system, developmental education, integration, education discussion forms, game technologies, classroom technology, free education, information and computer technologies, group activity technology, game technologies, problem-based learning, educational research technology, various types of independent work technologies of students .

Non-standard forms of organizing educational lessons (lesson-game, lesson-competition, lesson-excursion, lesson-trip, multimedia lesson) to develop cognitive activity, increase the

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

educational motivation of schoolchildren and ensure the quality of education, lesson-conference, business game, lesson-quiz, lesson-lecture, teleconference, lesson-performance, lesson-debate).

One of the modern technologies aimed at improving the quality of education is interactive education.

The advantages of interactive forms of education are clear, because:

- students learn new material not as passive listeners, but as active participants in the learning process;
- the share of class load decreases and the amount of independent work increases;
- students acquire the skills of mastering modern technical means and technologies of information search, retrieval and processing;
- the ability to independently find information and determine its level of reliability is formed.

Interactive technologies make it possible to establish permanent (planned) communication between teachers and students, rather than occasionally. They personalize education. It is important to understand that the use of network resources should not exclude direct communication between teachers and students.

Using interactive forms is really effective when needed. Any technology should have certain characteristics depending on the age of the students and the content of the material being studied.

Technology requirements in the elementary classroom may include:

- use of various technologies for classroom-free education - assessment system without grades in primary school, teaching children to assess themselves and their peers, freedom of choice of assessment system for schools;
- expansion of activity-based forms of education, which provide priority development of creative and research activities in all aspects of school life, including teaching;
- construction of the educational process using technologies for the organization of educational cooperation - significantly expanding the types of joint activities of students, their communicative experience in joint activities, gradual transition from oral to written types of communication, including information technologies use of opportunities;
- the use of game technologies that contribute to solving the main educational tasks in the lesson.

In mainstream school, the requirements must change. The basis of the interests and needs of adolescents is aimed at testing their capabilities in various areas: intellectual, social, interpersonal, personal. In this regard, the technological aspect of the main school should be to increase the variety of types and forms of organizing student activities. Thus, the main requirements for the organization of the educational process at this stage of school education may be:

- to increase project, individual and collective activity of schoolchildren;
- use of various forms of modular or concentrated training;
- strengthening the role of independent work of students with various data sources and databases;
- introduction of social practice and social design;
- differentiation of educational environment: workshop, laboratory, library, lecture hall;
- transition to a cumulative evaluation system, for example, using the "portfolio" technology.

In high school, the main idea should be to significantly expand the ability of each student to choose educational programs offered to him or to create his own personal educational program.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

When choosing educational technologies for secondary school, it is recommended to follow two situations:

- giving preference to technologies that differentiate and individualize the learning process in one class without using selection tools;
- technologies for the development of independent cognitive activity play a very important role at this stage of education.

When formulating the requirements for the selection of educational technologies for each of the three levels, it should be taken into account that all technologies used in school education must have a certain continuity, and there are technologies that work effectively at only one level of education. It's not. The system of educational technologies should be created taking into account the main goals of each educational level.

affecting the quality of education. Innovation in education is the process of improving pedagogical technologies, which is one of the important components of the educational activity of any educational institution, a set of methods, methods and teaching tools.

Pedagogical innovations - innovations in the field of pedagogy, purposeful progressive changes that introduce stable elements (innovations) into the educational environment that improve the specific characteristics of both its individual components and the entire educational system.

Pedagogical innovations include both the educational system's own resources (intensive development path) and additional resources (investments) - new tools, equipment, technologies, capital investments, etc. (extensive development path) can also be done by engaging.

Taking into account the system of basic concepts of pedagogical innovation, RN Yusufbekova defines three blocks in the structure of innovative processes in a modern school.

The first block is the block of creating new things in pedagogy. Here we will consider such categories as innovation in pedagogy, classification of pedagogical innovations, conditions for creating something new, criteria for innovation, criteria for its development and readiness for use, traditions and innovations, stages. creating new things in pedagogy and creators of the new.

The second block is the block of perception, assimilation and evaluation of new things: teaching team, assessment and types of learning new things, conservatives and innovators in pedagogy, innovative environment, readiness of the teaching team to perceive and evaluate new things. things.

The third block is the block of using and applying new things. This unit explores the forms and types of introduction, use and application of new things.

Innovations aimed at ensuring the quality of education should be related to the following changes:

- goals, content, methods and technologies, forms of organization and management system;
- Pedagogical activity style and organization of educational and cognitive process;
- the system of monitoring and evaluating the level of education;
- financing system;
- educational and methodological provision;
- system of educational work;
- in the curriculum and educational programs;
- in the activities of the teacher and the student.

In this regard, all innovations in the field of education can be classified as follows:

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

1. Innovations within the subject: innovations within the subject based on the specifics of its teaching.

2. General methodological innovations: the introduction of non-traditional pedagogical technologies of a universal character into teaching practice, as they can be used in any field of science.

3. Administrative innovations are decisions taken by managers at different levels that help the effective functioning of all subjects of educational activity.

4. Ideological innovation: the renewal of consciousness, the fundamental basis of all other innovations caused by the trends of the times.

Pedagogical innovations can be pedagogical ideas, processes, tools, methods, forms, technologies, content programs, etc.

Pedagogical innovations can be classified as follows:

1) by type of activity :

- pedagogic, provider of the pedagogical process;
- providing management, innovative management of educational institutions;

2) according to the validity period :

- short term;
- Long term;

3) according to the nature of changes :

- based on radically new ideas and approaches;
- combined on the basis of a new combination of certain elements;
- changed based on improvement and addition of existing samples and forms;

4) according to the scope of changes :

- change of local, that is, separate departments or components that are independent from each other;

- modular – interconnected groups of several local innovations;
- systemic - a complete reconstruction of the entire system.

Pedagogical innovations are carried out according to a certain algorithm. We can highlight the following Stages of development and implementation of pedagogical innovations:

1. Identifying the need for innovation - developing criteria and indicators of the state of the pedagogical system to be reformed.

2. Determining the need for reform - comprehensive inspection and evaluation of the quality of the pedagogical system, preparation of special tools.

3. Look for examples of advanced pedagogical solutions that can be used to model innovation.

4. Analysis of scientific developments, including creative solutions to current pedagogical problems.

5. Designing an innovative model of the entire pedagogical system or its individual parts.

6. Determining tasks, assigning responsibilities, looking for solutions, establishing forms of control.

7. Calculation of practical importance and efficiency.

8. Construction of the innovation implementation algorithm - search for areas to be renewed or replaced, modeling of innovations, development of an experimental program, monitoring of its results, implementation of necessary corrections, final control.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

9. Revising and updating the professional vocabulary, that is, introducing new concepts into the professional vocabulary.

10. Protecting pedagogical innovation from copying the innovative teacher's creative method without creative processing.

teaching technologies, on the one hand, allows students to improve the efficiency of mastering educational material, and on the other hand, allows teachers to pay more attention to the issues of individual and personal growth of students. , enables quality control. providing education and their creative development.

Innovative educational technologies increase the work efficiency of teachers. The monitoring and feedback system of each student's learning activity allows to prepare students according to their individual capabilities and character. For example, one student can master the material for the first time, while another can sit at the computer and work through the material two or three times or more. Transferring the main function of teaching to educational tools frees up the teacher's time, as a result of which he can pay more attention to the issues of individual and personal development of students. The goal for innovative technology is defined very clearly, so the use of objective control methods allows reducing the role of the subjective factor in control; creation of innovative teaching technologies allows to reduce dependence on the educational process. the result according to the qualification level of the teacher. Technologization creates necessary conditions for solving the problem of continuity of educational programs of school education.

References

1. Akhliddinov R. Management of education in Uzbekistan: problems, research, solutions / R. Akhliddinov, D. Aldroyt, A. Khodjaev, F. Nasyrova, M. Kamilova. - Tashkent: ES - JASIS, 1999.
2. Domanov A. I. Modernization of the municipal system of education in the middle of the city and the conditions of social economic transformation in Russia: dissertation ... candida pedagogicheskikh nauk /A. I. Domanov. Stavropol: Izdvo Sev. Kavk. Mr. tech. unta, 2009. 187 p.
3. Kovlyakova V. E. Otsenka kachestva srednego professionalnogo obrazovaniya v ramkax gosudarstvennogo controlliya: dissertatsiya ... candida pedagogicheskikh nauk / V. E. Kovlyakova. Moscow: Izdvo Moscow. gor. ped. unta, 2013. 209 p.
4. Kurbanov Sh., Seytkhalilov E. Upravlenie kachestvom obrazovaniya: monogr. - Tashkent: Shark, 2004.
5. Leonov K.P. Modern educational technologies as a factor of improving the quality of education. M 2007.
6. Mayorov AN Monitoring in education. - St. Petersburg, 1998
7. Selevko GK Modern educational technologies: Textbook. - M.: Public education, 1998. - 256 p.
8. Subetto AI Quality of education in Russia: status, trends, prospects. - M., 2001
9. V.V. Korochentsev and others. Monitoring the quality of education as the most important tool of educational management. Innovations in Education, 2005, Issue 5

MEDICINE, EDUCATION AND TECHNOLOGY: THEORY AND PRACTICE

Medicinal value of ginseng plant

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Abstract: The botanical name of the plant, *Panax ginseng*, C. A. Meyer, is a very old medicinal plant that originated in parts of China and Korea. It has been used as a medicinal plant for more than 2000 years in both traditional Chinese and Korean medicine. This article gives us information about growing ginseng and its ingredients. We can also see how ginseng is used to treat a variety of illnesses.

Keywords: Ginseng, Spread of Ginseng, Ginseng composition, Medicinal benefits of Ginseng.



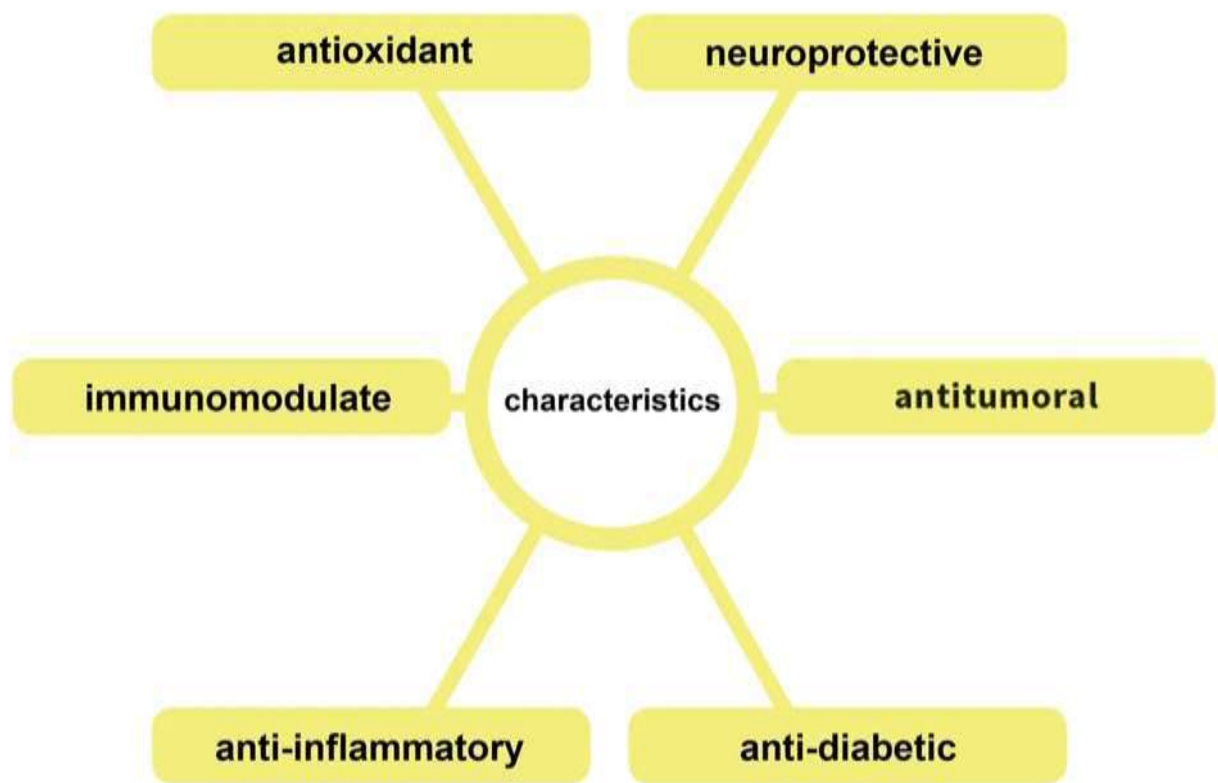
Introduction. In the past, ginseng was considered the most sacred herb in China, Korea, Japan, and America. Ginseng was found in the mountains of Manchuria, China, more than 5000 years ago. Books that date back more than two thousand years mention ginseng. The Chinese

hold it in high regard since it is seen as a herb that can be used for everything and, thus, for a variety of illnesses (its Latin name is currently taken from the Greek *panacea*, meaning, that is,

for everything). Therefore, the Chinese Emperors were the only ones who used it, and they were prepared to pay the price without any issues. As its popularity grew, ginseng introduced a thriving international trade that enabled Korea to swap wild ginseng and later what grows in America for silk and medications from China. A phrase known to the ancient Koreans as "ginseng shim" first appears in the "Guguepganyibangeanhae" manuscript, which was issued in 1489 under King Seongjong. According to the Annals of King Jeongjo of Joseon (1776–1800 AD, the 22nd monarch of the Joseon

dynasty of Korea), ginseng (known as Hongsam in Korean) is called "red." Seo-Gung (1091–1153 AD, Song Dynasty) first used this name in the 1123 AD chronicle of "GoRyeoDoGyeong." The ginseng steaming method was first described in Seo-Gung's 1123 work "Do Hong-Gyeong," which was written during the Song era (1091–1153 AD). In this book, 365 different varieties of herbs from the Yuan era are categorized into three quality levels: high, mediocre, and low. Ginseng is categorized as a high-grade medication. Ginseng is said to dispel negative energy, calm the mind, and enhance the body's five digestive organs. Red ginseng was first cultivated in Korea in the late 14th or early 15th centuries, and professional ginseng growers (who are the only ones who can produce ginseng) were aware of the subsequent cultivation in the 17th and 18th centuries. Up until the 18th century, trading with China and Japan was actually one of the biggest marketplaces. Due to a lack of thorough documentation, we are unable to precisely define the red ginseng preparation procedure prior to 1200 AD, including the duration of steaming, the number of repetitions, and the drying process. Taekyoung Kim (1850–1927 AD) wrote a text in the SohoDang miscellany that provided a better description of the process at the end of the 1200s, and the Samjung-Yolam (A Bulletin of Ginseng Policy, 1908, Ministry of Strategy and Finance, The Greater Korean Empire) described the current method of preparing red ginseng. Around 11 B.C., P. ginseng was first cultivated in Korea through the transplantation of wild ginseng. Ginseng was first cultivated by transplanting seeds that had been propagated in 1122 AD. Finally, based on his parents' testimonies and official records, Kim Taek-yeong wrote about the beginnings of ginseng growing in the 20th century in his work "Hongsamji" ("Sohodang collection").

American ginseng (*P. quinquefolius*), native to the United States and Canada, and Korean ginseng (*P. ginseng*), endemic to the Korean Peninsula and northern China, are the two most often utilized ginseng species globally. Generally speaking, only *P. ginseng* is referred to as "Korean ginseng" or simply "ginseng." American and Korean ginseng are different species of plants with different ginsenosides, or saponins. Because red ginseng is made from fresh ginseng by steaming it without peeling the roots and then drying it, the amount and quality of ginsenosides it contains will vary depending on how this process is carried out. With the implementation of the Korean law on functional foods for health in 2004, red ginseng's health benefits were validated. Ginseng's composition and kind give a variety of properties, some of which are unique to a specific species and others of which are prevalent in different species but in varying amounts. Strong antioxidants found in ginseng help prevent the effects of aging. Additionally, it has been demonstrated that they serve as useful, adaptive compounds that aid in the body's adaptation and recovery from the negative effects of stress, disease, and exhaustion. Additionally, ginseng contains minerals (trace elements zinc, copper, magnesium, calcium, iron, manganese, vanadium, potassium, sodium, and phosphorus), vitamins (B1, B2, B3, B5, B12, and choline), volatile oil polysaccharides, starch, pectin, and sterols. Protopanaxadiol (PPD) and protopanaxatriol (PPT) are the two main categories among the approximately 50 different types of ginsenosides that have been found. The red ginseng contains ginsenosides Rg2, Rg6, F4, 20(E)-F4, Rh1, Rh4, Rk3, Rg3, Rg5, Rz1, Rk1, Rg9, and Rg10. These are derived from the main ginsenosides Rb1, Rb2, Rc, Rd, Rg1, and Re, and they work similarly to steroid hormones. The many properties of ginseng are determined by its kind and composition; some ginsengs are common in multiple varieties of ginsengs, albeit in varying amounts, while others are specific to a particular species.



Performance (mental and physical):

In addition to improving cognitive function and decreasing subjectively reported weariness during prolonged mental work, one study was able to demonstrate that ginseng reduces blood glucose levels in healthy participants. According to the authors, the beneficial impact on glucose metabolism also promotes cognitive abilities. Additionally, a Cochrane study found that individual ginseng studies indicate improvements in behavior, quality of life, and cognitive abilities. Similarly, ginseng has a favorable effect on psychomotor traits (talking, walking, facial expressions, and gestures). However, there is no proof that ginseng has the frequently suggested impact on physical performance. There is now solid proof that taking 1000 mg of American ginseng twice a day will help reduce cancer-related fatigue. No other successful treatments have been found prior to this investigation.

Effect on glucose metabolism:

Ginseng's impact on glucose metabolism has been the subject of several studies. The majority were able to show encouraging outcomes or validate that ginseng can lower blood glucose levels and has a positive impact on glucose management. The outcomes of 16 clinical trials where different ginseng extracts were consumed for 4–24 weeks were compiled in a 2014 meta-analysis. Ginseng had no effect on HbA1c or insulin levels when compared to controls, although it was able to considerably but marginally lower fasting blood glucose in both diabetics and non-diabetics. Additional application

areas: There is some evidence that it improves erectile dysfunction and has a positive impact on the immune system, heart, and lungs.

The following adverse effects have been recorded by users, despite ginseng's typically safe consumption:

Headaches

Issues with sleep

Intestinal issues

Variations in blood sugar and blood pressure

- diarrhea

Fast heartbeat

severe response of the skin

Therefore, using little amounts of ginseng is usually safer.

sources:

<https://pmc.ncbi.nlm.nih.gov/articles/PMC4043102/>

<https://www.sciencedirect.com/journal/journal-of-ginseng-research>

<https://en.wikipedia.org/wiki/Ginseng>

<https://www.medicalnewstoday.com/articles/262982>

1 Panossian A et al. Evidence-Based Efficacy of Adaptogens in Fatigue, and Molecular Mechanisms Related to their Stress-Protective Activity. *Curr Clin Pharmacol* 2009;4(3):198– 219. |

2 Gaffney BT et al. The effects of Eleutherococcus senticosus and Panax ginseng on steroidal hormone indices of stress and lymphocyte subset numbers in endurance athletes. *Life Sci* 2001;70(4):431–42. |

3 Kim HG et al. Antioxidant effects of Panax ginseng C.A. Meyer in healthy subjects: a randomized, placebo-controlled clinical trial. *Food Chem Toxicol* 2011;49(9):2229–35. |

4 Kim HG et al. Antifatigue Effects of Panax ginseng C.A. Meyer: A Randomised, Double-Blind, Placebo-Controlled Trial. *PLoS One* 2013;8(4):e61271. |

5 Reay JL et al. Panax ginseng (G115) improves aspects of working memory performance and subjective ratings of calmness in healthy young adults. *Hum Psychopharmacol* 2010;25(6):462–71. |

6 Geng J et al. Ginseng for cognition. *Cochrane Database Syst Rev* 2010;12:CD007769. |

7 Lee NH et al. Systematic Review of Randomized Controlled Trials Evaluating the Efficacy and Safety of Ginseng. *Acupunct Meridian Stud* 2011;4(2):85–97. |

8 Shishtar E et al. The Effect of Ginseng (The Genus Panax) on Glycemic Control: A Systematic Review and Meta-Analysis of Randomized Controlled Clinical Trials. *PLoS One* 2014;9(9):e107391.

Определение уровня владения родным языком

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Аннотация

Обучение русской орфографии в начальной школе тесно связано с опытом, полученным при изучении родного языка. Ученики, уже знакомые с правилами орфографии на родном языке, могут использовать этот опыт при изучении русского. Важно понимать, что основы орфографического обучения формируются не только в процессе грамотного письма, но и во время чтения, анализа текстов и активного общения.

Annotation

Learning Russian spelling in elementary school is closely related to the experience gained while learning the native language. Students who are already familiar with the rules of spelling in their native language can use this experience when learning Russian. It is important to understand that the basics of spelling education are formed not only in the process of literate writing, but also during reading, text analysis and active communication.

Annotasiya

Boshlang'ich maktabda rus orfografiyasini o'qitish ona tilini o'rganish tajribasi bilan chambarchas bog'liq. Ona tilidagi imlo qoidalari bilan allaqachon tanish bo'lgan talabalar rus tilini o'rganishda ushbu tajribadan foydalanishlari mumkin. Imlo ta'limi asoslari nafaqat vakolatli yozish jarayonida, balki o'qish, matnlarni tahlil qilish va faol muloqot paytida ham shakllanishini tushunish muhimdir.

Ключевые слова: *знание, язык, база, ученик, опыт, орфография, школа, начальные классы, обучение, грамотность, процесс, чтение, текст, общение.*

Kalit so'zlar: *bilim, til, baza, talaba, tajriba, imlo, maktab, boshlang'ich sinflar, o'qitish, savodxonlik, jarayon, o'qish, matn, aloqa.*

Keywords: *knowledge, language, base, student, experience, spelling, school, elementary grades, education, literacy, process, reading, text, communication.*

Знания, полученные учениками на уроках родного языка, особенно те, что схожи с русским, могут служить отличной базой для изучения русского языка.

- Ученики, изучая русский язык, могут опираться на знания родного языка, особенно в тех аспектах, которые имеют сходства.

- Опыт, полученный при изучении родного языка, особенно в тех областях, где он похож на русский, может сделать изучение русского более легким.

Обучение русской орфографии в начальной школе тесно связано с опытом, полученным при изучении родного языка. Ученики, уже знакомые с правилами орфографии на родном языке, могут использовать этот опыт при изучении русского.

Однако важно помнить, что сходство алфавитов не всегда означает сходство в произношении и написании. Например, в азербайджанском языке буквы "п", "т", "к" выглядят так же, как в русском, но произносятся с придыханием.

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Поэтому учителям русского языка важно с первых уроков уделять внимание сходствам и различиям между графикой русского и родного языка. Это поможет избежать путаницы в произношении и написании слов у учащихся, которые изучают русский язык не как родной.

Обучая русскому правописанию детей, чьим родным языком не является русский, важно сравнивать орфографические правила двух языков, выделяя сходства и отличия. Такой сравнительный анализ поможет учителям предвидеть трудности, с которыми могут столкнуться учащиеся, и избежать переноса правил родного языка на русский.

В тюркских языках правописание часто основано на произношении, то есть слова пишутся так, как они звучат. Это может привести к ошибкам при изучении русского языка, где правописание не всегда совпадает с произношением. Также в тюркских языках некоторые звуки и буквы отличаются от русских, например, в русском языке есть звуки "в", "ч", "щ", "ф", "ц", "ъ", "ь", которых нет в тюркских языках. Кроме того, в русском языке часто встречаются сочетания двух или более согласных в начале слова, чего нет в тюркских языках. Ударение в тюркских языках фиксировано на последнем слоге, а в русском языке оно подвижное, то есть может падать на разные слоги в одном и том же слове. Важно учитывать все эти особенности при обучении русскому языку детей, чьим родным языком является тюркский, чтобы обеспечить правильное написание слов и избежать ошибок.

Обучение русскому правописанию учащихся с другим родным языком требует особого подхода. Важно сравнивать звуки, произношение и правописание слов в русском и родном языках, чтобы выявить трудности, с которыми могут столкнуться учащиеся.

Дополнительные упражнения, подбираемые с учетом особенностей родного языка, помогут устранить эти трудности. Сравнительный анализ фонетики, графики и орфографии двух языков помогает учителям выявить наиболее сложные орфографические правила русского языка, которые требуют дополнительной практики.

В некоторых регионах создаются списки наиболее трудных орфограмм русского языка, словари орфографических трудностей и минимальные списки правил, учитывающие особенности родного языка учащихся. Наиболее часто учащимся с другим родным языком трудно даются правила написания безударных гласных, звонких и глухих согласных в корне слова, правила написания "жи/ши", "ча/ща", "чу/шу", а также слова с "ы/и", "ъ", "ь", "щ" и слова с йотированными гласными ("я", "ю", "е", "ё").

Однако трудности обучения русскому правописанию не всегда связаны только с различиями в произношении и написании. Также важно учитывать особенности русского письма, такие как слоговой принцип графики и морфологический принцип орфографии.

Чтобы дети научились правильно писать на русском языке, им нужно усвоить не только буквы, но и правила написания звуков. Это важно, потому что от этого зависит правильное произношение и написание слов. Знания и навыки, полученные при изучении родного языка, могут быть очень полезны при изучении русского языка. Например, если ученик уже знает, как писать слово на родном языке, ему будет легче запомнить, как писать его на русском. По мере того, как дети овладевают русским языком, учителям необходимо продолжать сравнивать правила русского и родного языка, чтобы помочь детям усвоить правила русского языка и избежать ошибок.

Кроме того, важно учитывать фонетические особенности русского языка, которые могут отличаться от родного. Например, в русском языке существуют ударные и безударные гласные, что влияет на их написание. Учащиеся должны понимать, как ударение может изменять форму слова и, следовательно, его написание. Практика в слушании и произношении поможет им глубже осознать эти нюансы и улучшить навыки письма. Также стоит внедрять игровые методы обучения, которые делают процесс изучения более увлекательным. Различные упражнения, такие как кроссворды, ребусы и фонетические игры, могут значительно повысить интерес детей к изучению русского языка и помочь им правильно запоминать орфографические правила. Наконец, регулярное чтение также играет ключевую роль в освоении написания. Стимулирование интереса к литературе и чтению поможет детям видеть правильно написанные слова и фразы в контексте, что в свою очередь способствует их естественному запоминанию. Учителя должны поощрять чтение разнообразных текстов, чтобы студенты имели возможность обогащать свой лексический запас и развивать навыки письма.

Кроме того, полезно активно использовать аудио- и видеоматериалы, которые помогут учащимся лучше воспринимать фонетические особенности языка. Прослушивание песен, сказок или аудиокниг позволит не только услышать правильное произношение, но и уловить интонацию и ритм русского языка. Это, в свою очередь, облегчит восприятие роли ударения в словах и их написании. Не забывайте также о важности контекстуального обучения. Применение новых слов и орфографических правил в рассказах, диалогах или даже мини-проектах позволяет учащимся самостоятельно экспериментировать с языком. Подобные задания способствуют закреплению знаний и развивают креативное мышление, что делает процесс обучения более глубоким и осмысленным. И, наконец, регулярная обратная связь со стороны преподавателя играет значительную роль в обучении. Конструктивные комментарии по выполненным заданиям помогают студентам осознавать свои ошибки и недостатки, а также направляют их в правильное русло. Таким образом, ученики имеют возможность постоянно совершенствовать свои навыки и достигать лучших результатов в изучении русского языка.

Дополнительно, стоит отметить, что использование игровых методик в обучении также способствует более эффективному освоению языка. Игры помогают создать расслабленную атмосферу, где учащиеся могут свободно общаться и практиковать язык без страха совершить ошибку. Это может быть как традиционные настольные игры, так и современные цифровые приложения, которые предлагают увлекательные задания и викторины. Не менее важным аспектом является интеграция культурных элементов в курс обучения. Знакомство с русской литературой, кино, театром и музыкой не только обогащает словарный запас, но и помогает ученикам глубже понять культуру и менталитет носителей языка. Это создаёт дополнительные мотивации для изучения и применения языка в реальных жизненных ситуациях. Кроме того, совместные проекты, где студенты могут работать в группах, способствуют развитию коммуникационных навыков. Коллективная работа учит их не только взаимодействовать на языке, но и уважать точки зрения других, что является важным аспектом обучения в многонациональной среде. В итоге, комплексный подход к обучению, включающий аудио- и видеоматериалы, контекстуальное изучение, игры и культурные элементы, создаёт оптимальные условия для успешного освоения русского языка.

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Таким образом, важно также учитывать роль технологий в образовательном процессе. Современные образовательные платформы и мобильные приложения предоставляют доступ к интерактивным заданиям, которые можно выполнять в любое время и в любом месте. Это предоставляет учащимся возможность учиться в удобном для них темпе и значительно повышает мотивацию за счет геймификации и элементов соревнования. Практика языка через онлайн-общение с носителями языка также является неотъемлемой частью обучения. Виртуальные обмены, участие в языковых клубах и общение через социальные сети позволяют учащимся укрепить свои навыки в живом диалоге. Такие взаимодействия погружают их в реальный контекст языка, что ведет к быстрому прогрессу. Кроме того, использование разнообразных методов оценки успеваемости помогает обратить внимание на сильные и слабые стороны каждого ученика. Формативные оценки, такие как портфолио или самооценка, позволяют создать индивидуализированный подход к обучению, что, в свою очередь, лишь подчеркивает важность комплексного подхода.

Важным аспектом технологического обучения является доступность ресурсов. Интерактивные платформы, такие как видеолекции, виртуальные лаборатории и онлайн-курсы, открывают доступ к качественным образовательным материалам для студентов, независимо от их местоположения. Это способствует более широкому распространению знаний и уменьшает барьеры для учебы, что особенно актуально для студентов из удаленных или недостаточно обеспеченных регионов. Совместная работа также приобретает новые формы благодаря технологиям. Платформы для совместного редактирования документов, обсуждений и проектов способствуют развитию навыков командной работы и критического мышления. Учащиеся могут обмениваться идеями, проводить мозговые штурмы и получать обратную связь в реальном времени, что формирует среду активного обучения и углубляет понимание материала. Наконец, волнение и любопытство учащихся можно поддерживать с помощью гибкого обучения и адаптивных технологий. Использование алгоритмов, которые подстраиваются под уровень знаний ученика, позволяет максимально эффективно распределять время и ресурсы. Такой подход создает персонализированное образовательное пространство, где каждый чувствует себя вовлеченным и мотивированным на достижение успеха.

Помимо этого, технологии способствуют интеграции различных форматов обучения. Гибридные модели, сочетающие очное и дистанционное обучение, позволяют студентам получать знания в удобном для них формате. Это расширяет возможности для получения образования и делает его более доступным, принимая во внимание индивидуальные предпочтения и графики учащихся. Кроме того, видеозаписи лекций и записанные занятия дают возможность пересматривать материал в любое время, что особенно полезно для закрепления знаний. Технологии также поддерживают обратную связь между преподавателями и студентами. Платформы для онлайн-тестирования и оценивания позволяют мгновенно получать результаты и комментарии, что способствует более целенаправленному решению учебных задач. Таким образом, студенты могут оперативно корректировать свои усилия и улучшать понимание материала. Кроме того, создание онлайн-сообществ и форумов обогащает образовательный процесс. Учебные группы, работающие в цифровом пространстве, могут делиться опытом и знаниями, что расширяет горизонты и погружает студентов в среду обмена

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

идеями. Это не только укрепляет учебные навыки, но и формирует социальные связи, которые будут полезны в будущем.

Литература

1. Баранников И.В. и др. Методика начального обучения русскому языку в национальной школе: Л.: Просвещение, 1981.
2. Насруллаевна Н.М. Роль семьи в развитии мотивации к обучению детей младшего школьного возраста // Международный междисциплинарный исследовательский журнал «Галактика». – 2022. – Т. 10. – №. 3. – С. 773-775.
3. Назарова М. Н. Виды работ по разграничению вводных и вставных конструкций на уроках русского языка // Актуальные научные исследования в современном мире. – 2018. – №. 2-5. – С. 56-60.
4. Назарова М. Н. Специфика обучения иностранных студентов русскому языку // European Journal of Interdisciplinary Research and Development. – 2023. – Т. 12. – С. 236-238.

Improving ways to improve the effectiveness of education in higher education institutions through the use of digital technologies

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Annotation: This article explores innovative approaches to enhancing the effectiveness of education in higher education institutions through the integration of digital technologies. It examines the potential of digital tools to transform traditional learning environments, foster interactive learning, and improve educational outcomes. By leveraging technologies such as online learning platforms, data analytics, artificial intelligence, and virtual simulations, institutions can create more personalized, accessible, and efficient learning experiences. The article discusses the challenges and opportunities of digital transformation in education, offering insights into best practices for implementation and recommendations for policymakers, educators, and administrators aiming to enhance student engagement and academic success.

Keywords: Digital technologies in education, higher education effectiveness, online learning platforms, educational innovation, digital transformation in academia, interactive learning tools, personalized learning, academic success through technology, higher education institutions.

Introduction: In today's rapidly evolving digital landscape, higher education institutions face both unprecedented challenges and extraordinary opportunities. As students and educators adapt to an increasingly interconnected world, the integration of digital technologies into educational frameworks has become essential for fostering student engagement, improving learning outcomes, and supporting long-term academic success. The shift toward digital transformation in education—accelerated by the global pandemic—has highlighted the urgent need for institutions to adopt digital tools that go beyond traditional teaching methods, creating a more dynamic, interactive, and accessible learning experience.

Digital technologies, such as online learning platforms, data analytics, artificial intelligence, and virtual simulations, have demonstrated significant potential to improve education by enhancing interactivity, supporting personalized learning paths, and expanding access to quality resources. These tools not only allow educators to tailor their teaching approaches to individual learning styles but also enable students to take a more active role in their learning journey. With data analytics, for example, educators can monitor student progress in real-time, identify areas for improvement, and make data-driven decisions to enhance educational effectiveness.

However, the adoption of digital technologies is not without its challenges. Higher education institutions often face barriers such as limited funding, resistance to change, and the need for faculty training to implement new digital systems effectively. Additionally, ensuring equity in access to digital resources is crucial to avoid exacerbating the digital divide among students. This article delves into the ways higher education institutions can overcome these challenges and maximize the benefits of digital technologies, discussing best practices, success stories, and policy recommendations for a digitally empowered educational future.

Relevance of the Study: The relevance of studying ways to improve educational effectiveness through digital technologies in higher education is underscored by the growing demand for skilled

graduates who are prepared for a digital-first world. As globalization and technological advancements reshape economies, higher education institutions must equip students with skills that meet the expectations of modern workplaces. Digital technologies play a vital role in bridging the gap between traditional education methods and the competencies required in today's data-driven, innovation-oriented job market. By integrating these technologies, institutions can enhance the learning process, providing students with more adaptable, accessible, and customized learning experiences.

Moreover, digital tools address the need for increased flexibility and inclusivity in education. Online platforms and virtual classrooms allow institutions to reach diverse populations, including those who may not have access to conventional campus facilities. These technologies support remote learning, making higher education more accessible for working professionals, non-traditional students, and individuals in geographically isolated areas. As a result, the widespread adoption of digital learning environments contributes not only to academic success but also to social and economic inclusivity.

In addition, the application of digital technologies allows for improved data collection and analysis, which can provide valuable insights into student performance, retention, and engagement. These insights enable institutions to make data-informed adjustments to curricula and teaching strategies, enhancing both efficiency and educational outcomes. The ability to monitor and address students' needs in real-time has shown promise in reducing dropout rates, increasing course completion, and improving the overall quality of education.

This study is highly relevant in the current context, where the rapid pace of digitalization demands that higher education institutions stay agile and responsive to technological advancements. By exploring best practices and strategies for digital integration, this research can offer educators, administrators, and policymakers actionable insights on optimizing teaching and learning processes. Ultimately, improving educational effectiveness through digital technologies can contribute to creating a more competent, adaptable workforce that drives innovation and productivity in a digital economy.

Purpose of the Study: The purpose of this study is to explore and evaluate effective methods for integrating digital technologies to enhance educational outcomes in higher education institutions. As educational systems undergo transformation in response to technological advancements, this study aims to provide a comprehensive analysis of how digital tools and platforms can be leveraged to improve teaching quality, student engagement, and overall institutional effectiveness. Through examining current practices, challenges, and opportunities in the digital transformation of education, this research seeks to establish best practices and guidelines that can help universities and colleges harness technology to foster more interactive, personalized, and efficient learning experiences.

Another core purpose is to identify and address key barriers that hinder the adoption of digital technologies in higher education. These may include limited resources, resistance to change among faculty and administrators, and issues related to digital access and equity. By understanding these obstacles, the study aims to propose actionable solutions and recommendations that institutions can implement to overcome them, ensuring that digital transformation is inclusive and accessible to all students.

Furthermore, this study aims to examine the potential for data analytics and artificial intelligence to personalize learning and track student progress. By investigating the use of data-driven insights, the study seeks to show how real-time feedback and tailored learning paths can support student retention,

motivation, and academic success. The study also intends to highlight the long-term benefits of adopting these technologies, such as reducing dropout rates, boosting completion rates, and equipping students with the digital literacy skills necessary for the modern workforce.

Ultimately, the study's purpose is to provide a roadmap for higher education institutions looking to navigate the digital transformation successfully. By outlining strategies for implementing digital tools effectively, this research will contribute to a growing body of knowledge that can support educators, policymakers, and administrators in building a future-ready education system.

Materials and Methodology: This study will use a mixed-methods approach, combining quantitative data analysis and qualitative insights to gain a comprehensive understanding of how digital technologies can improve educational effectiveness in higher education institutions. The materials and methodology are designed to evaluate the impact of digital tools on student engagement, academic performance, and institutional efficiency, while also examining barriers and best practices for implementation.

Materials

1. Surveys and Questionnaires: Surveys will be distributed to students, faculty, and administrators across multiple higher education institutions to gather data on their experiences and perspectives regarding digital tools. These surveys will include questions about the frequency of technology use, perceived effectiveness, accessibility, and satisfaction with digital resources.

2. Institutional Data: Academic performance records, retention rates, and completion rates from participating institutions will be used to assess the impact of digital technology integration on educational outcomes. This data will help to quantify the relationship between technology use and student success indicators.

3. Digital Tools and Platforms: The study will analyze a range of commonly used digital tools, including Learning Management Systems (LMS) such as Moodle or Canvas, online learning platforms, virtual classroom software, and data analytics tools. This will involve collecting case studies or reports from institutions that have implemented these technologies effectively.

4. Interviews: Semi-structured interviews will be conducted with key stakeholders, including students, instructors, and academic administrators. These interviews will provide qualitative insights into how digital technologies impact learning experiences, teaching strategies, and administrative workflows.

Methodology

1. Data Collection:

- Quantitative Data: Surveys and institutional data will be collected from a sample of higher education institutions, with a focus on capturing diverse perspectives from different fields of study, institution types, and geographic locations. The survey responses will be coded and quantified to identify patterns and correlations between technology use and educational outcomes.

- Qualitative Data: Interviews will be recorded, transcribed, and analyzed to identify themes related to the experiences, benefits, and challenges of digital technology integration in education.

2. Data Analysis:

- Quantitative Analysis: Statistical analysis will be conducted on the survey data and institutional records to identify trends, correlations, and causal relationships. For example, regression

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

analysis may be used to explore the impact of specific digital tools on student engagement and performance metrics.

- Qualitative Analysis: A thematic analysis will be performed on interview transcripts to identify recurring themes and insights. Qualitative data will help contextualize the quantitative findings by providing real-life examples and feedback from users of digital technologies.

3. Case Studies: The study will include case studies of institutions that have successfully implemented digital technologies to improve educational outcomes. These case studies will offer detailed descriptions of implementation processes, challenges faced, and strategies for overcoming barriers. They will also illustrate specific outcomes, such as improvements in student engagement, learning efficiency, and operational effectiveness.

4. Comparative Analysis: A comparative approach will be used to evaluate the effectiveness of different digital tools and strategies across various institutions. This will help to identify the specific types of digital technologies and practices that yield the best results in different educational contexts.

5. Validation and Triangulation: To ensure the reliability and validity of the findings, data triangulation will be used. Insights from surveys, interviews, and institutional data will be cross-validated to confirm patterns and identify any inconsistencies. The mixed-methods approach allows for a more robust analysis by combining numerical data with contextual, real-world insights.

This comprehensive methodology will allow the study to provide an evidence-based understanding of how digital technologies can enhance educational effectiveness in higher education, offering actionable recommendations for institutions aiming to optimize their digital transformation efforts.

Discussion: The findings of this study underscore the transformative potential of digital technologies in enhancing the effectiveness of education within higher education institutions. The integration of digital tools—such as Learning Management Systems (LMS), data analytics, and AI-powered platforms—has shown measurable benefits in improving student engagement, fostering personalized learning experiences, and enabling data-driven decision-making. However, the successful implementation of these technologies requires a nuanced approach that considers institutional challenges, faculty readiness, and equitable access to digital resources.

Enhancing Student Engagement and Personalized Learning

Digital technologies have been instrumental in shifting traditional, lecture-based education toward more interactive and student-centered learning. The survey data and case studies reveal that students are more engaged when using digital tools that offer interactive content, such as quizzes, discussion boards, and virtual simulations. These platforms allow students to take an active role in their learning journey, giving them greater autonomy and control. Additionally, data analytics embedded in LMS platforms enable instructors to monitor student engagement and progress in real-time, allowing them to provide timely interventions for students who may be struggling.

Personalized learning, facilitated by AI and adaptive learning technologies, emerged as another critical benefit. By tailoring learning paths to individual students' needs, these technologies support diverse learning styles and paces, promoting better comprehension and retention. For example, AI-driven platforms that recommend study materials or suggest additional resources based on a student's progress have proven effective in helping students stay on track. However, the study also found that

the full benefits of personalization require careful consideration of privacy and data security to ensure students' personal information is protected.

Overcoming Barriers to Digital Transformation

Despite the clear benefits, the study highlights significant barriers to adopting digital technologies in higher education. Funding constraints, particularly in public institutions, limit the ability to purchase or upgrade digital tools. Budget limitations can also impact faculty training and support services, which are essential for effective technology integration. Furthermore, resistance to change among faculty and administrators remains a key challenge. Educators accustomed to traditional teaching methods may be hesitant to adopt new technologies, fearing that these tools may disrupt their established practices or add to their workload.

To address these challenges, the study suggests that institutions invest not only in technology but also in faculty development programs that emphasize the value of digital tools in enhancing educational outcomes. Creating a culture of digital acceptance and providing adequate support can encourage more educators to embrace technology, ultimately benefiting students. Additionally, partnerships with technology providers can help institutions access the latest digital resources at lower costs, while government or private funding can provide financial support for initial technology implementation and faculty training.

Ensuring Equity in Access

Equity in access to digital resources is another critical issue identified in this study. Digital transformation has the potential to close accessibility gaps in education by offering remote learning options to students in rural or underserved communities. However, for students without reliable internet access or up-to-date devices, digital technologies can inadvertently widen the educational divide. The study found that institutions must ensure all students have access to the necessary digital infrastructure to participate in technology-enhanced learning fully.

Some recommended solutions include providing students with digital devices, setting up on-campus digital resource centers, and offering online courses with downloadable materials that can be accessed offline. Partnerships with local governments and tech companies could also provide internet access subsidies for students facing financial difficulties. Institutions should also consider integrating low-bandwidth options in their digital platforms, ensuring that all students, regardless of connectivity, can access educational resources.

Long-Term Implications and Future Directions

The long-term implications of digital transformation in higher education go beyond enhancing student engagement and learning outcomes. By fostering digital literacy, institutions are preparing students for careers in a world increasingly defined by technology. Graduates with experience in using digital tools will be better equipped to enter the workforce with relevant skills, making them more adaptable to future innovations.

The study's findings also suggest that future research should focus on the evolving nature of digital technologies and their applications in higher education. Technologies like virtual reality, blockchain, and advanced AI are still emerging in the education sector and hold promising potential for further enhancing learning experiences. Additionally, long-term studies that track the impact of digital integration on academic performance and career readiness would provide valuable insights into the sustained benefits of these investments.

In last opinion, this study illustrates that while digital technologies hold transformative potential for higher education, their effective integration requires addressing both institutional challenges and ensuring equitable access. By investing in digital infrastructure, faculty training, and supportive policies, higher education institutions can create more engaging, inclusive, and effective learning environments. This digital shift not only enhances academic outcomes but also positions institutions to produce graduates who are well-prepared to thrive in a digital economy. The journey toward a fully digitalized educational system is ongoing, and continued research will be essential to adapting and optimizing digital strategies for future generations of learners.

Conclusion: This study highlights the significant role that digital technologies can play in enhancing the effectiveness of higher education, providing insights into how these tools can transform traditional educational practices to meet the demands of a digital world. Digital tools such as Learning Management Systems (LMS), data analytics, and AI-powered platforms have been shown to increase student engagement, support personalized learning, and facilitate data-driven decision-making for administrators and educators. These technologies enable institutions to offer more interactive, flexible, and accessible learning experiences, aligning educational outcomes with the competencies required in modern industries.

The findings indicate that successful integration of digital technologies goes beyond mere access to tools; it also requires a supportive institutional culture, adequate faculty training, and a strong commitment to overcoming barriers such as funding limitations, resistance to change, and digital inequity. Faculty and staff play a crucial role in the adoption of these technologies, as their willingness to embrace digital resources can significantly impact student outcomes. Thus, investing in faculty development programs and creating an environment that values digital transformation are essential steps in maximizing the potential of these tools.

A major takeaway from this research is the importance of addressing digital equity to ensure that all students benefit from digital advancements, regardless of their socio-economic backgrounds. As education becomes increasingly digitalized, institutions must consider ways to provide internet access, devices, and low-bandwidth options to students who may otherwise face barriers to participation. Ensuring equitable access to technology is essential for achieving a truly inclusive learning environment that supports every student's academic journey.

The broader implications of this study point to a future where digital literacy and technological skills are embedded within the academic experience, preparing students not only to excel in their studies but also to succeed in a tech-driven workforce. The ability to work with digital tools, analyze data, and adapt to new technologies will be essential skills for graduates in virtually all career paths. By embracing digital transformation, higher education institutions can bridge the gap between education and employment, producing graduates who are ready for the evolving demands of the global economy.

Looking ahead, further research is necessary to explore emerging technologies like virtual reality, augmented reality, blockchain, and advanced artificial intelligence in the context of higher education. These technologies hold promise for even more immersive and efficient learning environments, but they also require careful study to understand their pedagogical effectiveness and ethical implications. Additionally, long-term studies on the impact of digital technologies on student retention, graduation rates, and career outcomes will provide valuable insights into the lasting benefits of digital education.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

In conclusion, the integration of digital technologies in higher education is a powerful strategy for enhancing educational effectiveness, promoting inclusivity, and preparing students for a competitive, digital future. Institutions that invest in this transformation and address associated challenges will be well-positioned to lead in a rapidly evolving educational landscape. By adopting thoughtful, evidence-based approaches to digital integration, higher education institutions can create more engaging, personalized, and accessible learning environments that benefit students, faculty, and society as a whole.

References.

1. Anderson, T., & Dron, J. (2011). Three generations of distance education pedagogy. **International Review of Research in Open and Distributed Learning**, 12(3), 80-97.
2. Bond, M., Marín, V. I., Dolch, C., Bedenlier, S., & Zawacki-Richter, O. (2018). Digital transformation in German higher education: Student and teacher perceptions and usage of digital media. *International Journal of Educational Technology in Higher Education*, 15(1), 48.
3. Selwyn, N. (2020). Digital disruption in education: What is it, and what might it mean? *Learning, Media and Technology*, 45(1), 1-10.
4. Fawns, T., Aitken, G., & Jones, D. (2019). Online learning as embodied, socially meaningful experience. *British Journal of Educational Technology*, 50(3), 1023-1038.
5. Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. **The Internet and Higher Education**, 7(2), 95-105.
6. Mimirinis, M. (2019). Qualitative differences in academics' conceptions of e-assessment. *Assessment & Evaluation in Higher Education*, 44(2), 233-248.
7. Siemens, G., & Gašević, D. (2012). Learning and knowledge analytics. *Educational Technology & Society*, 15(3), 1-2.
8. Veletsianos, G., & Moe, R. (2017). The rise of educational technology as a sociocultural and ideological phenomenon. *Educational Technology*, 57(2), 42-47.

The Role of Euphemisms in Political Discourse

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Abstract

This study examines the strategic use of euphemisms in political discourse, focusing on how language is employed to soften, obscure, or frame contentious policies and events. Euphemisms, often seen in discussions of military actions, economic policies, and social issues, influence public perception and shape political agendas by reducing the emotional or moral impact of certain terms. This paper analyzes the functions, effects, and ethical implications of euphemisms in political language, using case studies and examples from modern political discourse. Findings suggest that while euphemisms can aid in diplomacy and reduce public distress, they often contribute to a lack of transparency and trust in political institutions.

Key words: Euphemisms, political discourse, framing, public perception, manipulation, language and power, critical discourse analysis (CDA), transparency, ethics in language, public trust, military language, economic language, doublespeak, agenda setting, cognitive framing.

Introduction

In political communication, language is a powerful tool used to frame, influence, and often protect the public from the full impact of certain actions or policies. “Euphemisms”—milder or indirect expressions that replace words with harsher or more unsettling connotations—are frequently used in political discourse to shape public perception and soften controversial topics. Whether describing war, economic policies, or social issues, euphemisms can ease public concern but may also obscure the truth. This article will explore the role of euphemisms in political discourse, their impact on public perception, and the ethical questions they raise.

Literature Review

The use of euphemisms in political language has been a subject of considerable academic interest, with scholars examining how euphemistic language shapes public perception, manipulates opinion, and reframes controversial issues. This review covers key studies and theories that provide a foundation for understanding the role and impact of euphemisms in political discourse.

George Lakoff’s (2004) concept of “framing” has become pivotal in understanding the strategic use of euphemisms in politics. Lakoff explains that the words used in political discourse activate frames, or mental structures, that shape how people interpret events and policies. For example, the term “tax relief” implies that taxes are an affliction rather than a civic duty, leading the public to view tax cuts as inherently positive. This framing, facilitated by euphemistic language, can influence public attitudes and steer opinions in favor of certain policies. Lakoff’s work highlights how euphemisms are not just about softening language, but about actively shaping perceptions to align with political goals.

Norman Fairclough’s (1989) work on critical discourse analysis (CDA) has been influential in exploring the ethical dimensions of political language. In *Language and Power*, Fairclough argues that euphemisms in political discourse are part of a broader strategy of power exertion, where language is used to maintain social order and suppress dissent. He posits that euphemistic

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

language can prevent the public from understanding the full impact of political actions, effectively stripping citizens of the ability to make informed judgments. Fairclough's analysis raises ethical concerns about transparency and accountability, suggesting that euphemistic language can be a form of manipulation that undermines democratic processes.

Research has also shown that the use of euphemisms can impact public trust in political institutions. McGowan (2011) examined public reactions to terms like "enhanced interrogation techniques" in the context of the War on Terror, showing how euphemisms can erode trust when citizens recognize them as manipulative or misleading. Euphemisms, when perceived as tools of deception, can create cynicism and skepticism among the public, ultimately weakening trust in government institutions. McGowan's work adds an important dimension to the discussion by exploring the long-term consequences of euphemistic language on public trust and democratic engagement.

The literature on euphemisms in political discourse underscores the dual role they play: they are tools for managing public reaction and maintaining political stability, but they also raise ethical concerns about manipulation and transparency. Scholars like Lakoff and Fairclough highlight how euphemisms can shape public perception and align opinions with political agendas, while researchers such as McGowan point to the potential for euphemisms to erode public trust. Together, these studies provide a comprehensive foundation for understanding how euphemisms influence political discourse, raising important questions about the balance between strategic communication and ethical transparency.

Materials and Methods

Materials

News articles, political speeches, and government documents were analyzed to identify instances of euphemisms in political discourse. This included speeches from prominent politicians and press releases from various government agencies, focusing on language related to military, economic, and social policies. Books, articles, and essays on political language, discourse analysis, and linguistics were used to provide theoretical and analytical support. Key texts included works by Lutz (1987), Lakoff (2004), and Fairclough (1989), which examine the role of language in political framing and public perception.

Methods

Qualitative content analysis was conducted to identify euphemistic terms and phrases in political texts. Content was coded for themes, specifically targeting language that reframes controversial topics in softer or more positive terms.

Specific examples of euphemisms were studied in-depth, such as terms like "collateral damage," "tax relief," and "enhanced interrogation techniques." The analysis focused on the implications of each euphemism, the intent behind its use, and its effects on public perception.

Discourse analysis was employed to interpret the broader impact of euphemistic language on public understanding and social narratives. This method helped in examining how euphemisms align with political agendas and frame issues to influence public opinion.

Discussion

The use of euphemisms in political discourse serves multiple functions and has significant implications for public perception, as well as for ethical considerations in politics.

Euphemisms in political language allow officials to address sensitive topics while reducing the potential for public backlash or distress. For example, military terms such as "collateral

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

damage” and “peacekeeping operations” are strategically used to reduce the emotional impact of violence and war on the public. These terms sanitize the discussion of war, making it easier for the public to accept military interventions without fully confronting the human cost (Lutz, 1987). Economic terms such as “negative growth” instead of “recession” or “austerity measures” instead of “budget cuts” similarly soften the reality of economic hardships (Lakoff, 2004).

Euphemisms shape public perception by framing political actions in a way that aligns with certain agendas. For example, the term “tax relief” frames taxes as a burden, which implies that any reduction in taxes is a relief to taxpayers (Lakoff, 2004). This kind of language influences public support for policies by presenting them in a positive light. Euphemisms also have the power to redirect public attention, downplaying or masking controversial aspects of policies, such as the use of “enhanced interrogation techniques” to avoid the term “torture” (McGowan, 2011).

While euphemisms can serve a diplomatic function, their use raises ethical concerns. Euphemisms can obscure truth, making it difficult for the public to fully understand the impact of certain policies. For instance, when the U.S. government used “extraordinary rendition” to describe forced transfer of detainees, the term softened public perception of a practice that many view as ethically and legally questionable (McGowan, 2011). Over time, the overuse of euphemisms in politics may lead to a general erosion of trust, as citizens become skeptical of the language used by politicians. If euphemisms are perceived as tools for deception, this skepticism can lead to reduced confidence in political institutions and processes (Fairclough, 1989).

Results

The analysis revealed that euphemisms in political discourse serve several functions, including mitigating negative reactions, framing agendas, and deflecting blame. Key findings include:

1. **Mitigating Reactions:** Euphemisms reduce the emotional impact of harsh realities, as seen in military language. Terms like “collateral damage” lessen the perceived severity of civilian casualties.
2. **Framing Agendas:** Euphemisms align with political agendas by framing issues positively. For example, “tax relief” frames tax cuts as inherently beneficial, increasing public support for these policies.
3. **Obscuring Accountability:** Euphemisms allow for the deflection of blame and responsibility, as seen in terms like “enhanced interrogation techniques,” which obscure the negative connotations associated with torture.
4. **Erosion of Trust:** The use of euphemisms in political language can contribute to reduced public trust. When euphemistic language is perceived as manipulative, it can lead to public skepticism and cynicism toward political leaders and institutions.

The study suggests that while euphemisms serve functional purposes in political language, their frequent use may lead to ethical concerns about transparency and accountability. This analysis highlights the need for media literacy and public awareness to ensure that euphemistic language is critically examined rather than passively accepted.

Conclusion

Euphemisms play a powerful role in political discourse, as they can shape public perception, minimize backlash, and obscure the true nature of policies. While they serve certain diplomatic purposes, euphemisms can also hinder transparency and reduce public trust. Recognizing the potential for euphemisms to distort reality, it becomes essential for the public to engage critically

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

with political language and remain vigilant in assessing the true meaning behind carefully chosen words.

References

- Ahrens, K. (2009). Politics, Gender, and Conceptual Metaphors. Palgrave Macmillan.
- Bolinger, D. (1980). Language: The Loaded Weapon: The Use and Abuse of Language Today. Longman.
- Edelman, M. (1977). Political Language: Words That Succeed and Policies That Fail. Academic Press.
- Fairclough, N. (1989). Language and Power. Longman.
- Lakoff, G. (2004). Don't Think of an Elephant! Know Your Values and Frame the Debate. Chelsea Green.
- Lutz, W. (1987). Doublespeak: From Revenue Enhancement to Terminal Living—How Government, Business, Advertisers, and Others Use Language to Deceive You. Harper & Row.
- McGowan, M. K. (2011). Political Realities: Essays in Government and Politics.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

THEORY AND PRACTICE OF DEVELOPMENT OF MEANS OF PRODUCTION

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Abstract: Despite of manufacturing sphere, production costs directly and indirectly form socio-economic relationships between parties involved in process, which is considered as an economic phenomenon. Meanwhile, in the process, human capital also plays significant role in further development of society wellbeing.

Key words: Ownership form, production cost, manufacturing process, economic thoughts, market economy.

The process of economic and social development in a social society and the development of natural and economic phenomena in it, both external and internal, represent complex not only economic, but also social relations.

Economic and social changes occurring in production entities as society and production processes develop are the main economic category of how production factors theoretically and practically constitute it as production costs.

Human capital, being its main factor in the organization of the production process, is the main production factor that ensures the economic and social development of society, and has important economic and social significance in the formation and development of human society, regardless of the forms of ownership of production costs.

Production costs have their own historical development. These production costs arose as a result of the development of the production process in the era of economic society, and its socio-economic development began to develop as the process of production of goods developed.

The cost price of production is formed depending on the directions of the organization of the production process. Production costs are an economic phenomenon. When organizing the production process at manufacturing enterprises and ranking its efficiency before using it in production, its legal aspects should be considered. Seeing that the organization of the production process in a specific direction of production costs is associated with certain standard costs, it is necessary to consider its legal side.

These costs are expressed as transaction costs. Production costs associated with the organization of the production process are commodity and are expressed as production costs in the comparative case in the production process. The reason why the subject of production considers production costs in the comparative case. In essence, production costs are transaction costs.

But production costs for an enterprise mean the creation of the necessary economic conditions for organizing production. The cost price of a product is also a commodity, and without studying it from the structural, social and economic sides it is impossible to draw the corresponding conclusion that these are the costs of organizing its production. A pressing problem for production entities is the need for an economically sound study of the production costs of the production nature of an enterprise. Therefore, we consider it necessary to study the theoretically and methodologically sound scientific and theoretical conclusions of economists, industry economists on the production costs that ensure the organization of the production process.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

It cannot be denied that the cost of production has its theoretical and practical significance in the organization of the production process in the science of economic theory. Production costs were also used in the ancient production process. In particular, for the first time in his research work, K.Fonte¹ expressed his opinion on whether farming is a useful or harmful production process, pointing out the need to obtain surplus products in the process of organizing and running a farm.

K.Fonte expressed the opinion that "if the money leaves the farm entirely in the form of production costs, if the production process does not satisfy demand, if the input does not ensure the fulfillment of costs, then it is not a reasonable place. If it fulfills the input costs, there will be a shortage². "In his scientific works on production costs, Aristotle investigated the economic nature of exchange, value and monetary economic indicators. He indicated to what extent the goods of exchange should be equal, and that the exchange should compensate for the losses incurred by the trading staff. He believed that without equality of goods, their exchange cannot be compensated by the seller.

In ancient times, attention was paid to the indicators of expenses and incomes and the need to orient farms to incomes and expenses was indicated. In his scientific reasoning, K.Fonte mentioned land use or its damage, and its efficiency would be superfluous in production. He believed that if money from the farm goes to full expenses, then in this case, instead of surplus, there will be a deficit³. He believed that in certain relationships there can be no inequality in goods, that society cannot exist without compensation for damage from constant exchange⁴. The scientific views of K.Fonte, one of the physiocratic scientists, on the organization and development of production costs are important. K.Fonte linked production costs with capital costs, seeing these costs in the expenditure of capital on the means of production and labor.

Those who believed that obtaining an additional net product in the production process compared to production costs occurs only in agricultural production. Physiocrats considered the by-product obtained in agricultural production to be a "net product". However, in industrial production, a "net product" is not created, and the value of a product is determined by production costs. K.Fonte also focused on reducing the cost of producing goods with free trade in raw materials⁵.

The theory of labor value was considered in the scientific works of A. Smith and D. Ricardo⁶, representatives of the political economy of the capitalist class. Adam Smith believed that labor creates value. He believed that the process of exchanging goods depends on the level of labor spent on the production of goods. A. Smith was the first to show that labor is the source of the value of goods.

A. Smith was the first to introduce the concept of absolute production costs into economic theory⁷.

At the same time, A. Smith noted that in a foreign country there are goods whose prices are cheaper compared to goods in other countries, since the costs of their production are low. Therefore, it is necessary to purchase goods whose cost in other countries is relatively low. A. Smith, "if any foreign country has the opportunity to produce its own industrial goods at lower prices than our own industrial

¹ K. Fonte. Socratic works - St. Petersburg JSC "Komplekt" 1993. P. 317

² History of economic thought . M. ed. Moscow Univ. 1961. 58

³ Canet F. Selected economic works. M. sotse 1960. P. 387.421.431.

⁴ A. Smith. research with nature and the cause of the wealth of peoples. M. Soc. 1963 p. 333

⁵ Ricardo D. Works T.3-M.: Hospitals 1955 p.111

⁶ Smith A. Research on the nature and causes of wealth nirodate M.: Soc 1962 P.333

⁷ K. Marx. Theory of surplus value. - Marx K. and Engels F. Works T.26.Part. Politizdat 1964 P. 77.78

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

goods, to buy a certain. part of the offered products from them, in which direction we have priority in the production of the offered industrial products⁸.

D. Ricardo, a representative of class economics, is the author of the comparison of production costs and believes that the relative costs of production of two goods are approximately equal to the labor expended on them, and the labor expended on the production of each good corresponds to the labor expended from beginning to end⁹.

Representatives of class capitalism understood production costs as the costs of social production spent on producing a unit of product. They determined the cost of production taking into account the cost of production. As a result of the emergence of the Marxist theory of production costs, two different approaches to production costs in the economy emerged, namely, labor theory and market theory.

Marxist theory as the final theory of the theories of production costs of A. Smith and D. Ricardo, the theory of K. Marx can be accepted as the final theory, generalizing the theories of production costs of A. Smith and D. Ricardo. K. Marx saw production costs in objective production costs. He considers production costs independently of the subject of production and compares them with the received income, based on the fact that each subject of production tries to compare production costs in the production of goods.

Based on Marxist theory, when analyzing production costs in the production process, he saw two sides of production costs, materialized them and showed them as social costs. Materialized production costs are, first of all, a factor of production, independent of production relations. On the other hand, production costs represent production relations, their characteristics, the socio-economic system, the state of the market economy, forms of production based on various forms of ownership, and the forms of products released in them represent a social product as a result of society's activity. American economist Samuelson writes in his scientific works that "Marxism has too much value to be left alone"¹⁰. In K. Marx's theory, one can see the following directions.

First of all, production costs in motion - if production costs have the form of value, they represent the materialized means of production spent on its production, i.e. the main means of production and human labor spent on its production.

Human labor is used in the production of means of production and raw materials necessary for the production of production costs, which are necessary for the organization of any production process. K. Marx considered the costs of capitalist production as the cost of capital in the process of capitalist production. He believed that a commodity with capitalist production costs represents a part of the value of the commodity that covers production costs and the cost of purchasing labor. Based on K. Marx's coverage of production costs as an economic category, he showed that it is necessary to determine the size of all production costs and rebuild the normal production process based on the presentation of the enterprise's production costs in monetary form¹¹. "The production costs proposed by K. Marx are an orderly theory," says A.M. Fabrichiev¹².

⁸ K. Marx. Theory of Surplus Value. - Marx K. and Engels F. Works T.26. Part 3-m. Politizdat 1962 P. 503

⁹ Fabrichnov A.M. Problems of production costs in the economic teachings of K. Markk - Voronezh 1987

¹⁰ Marshal A. Principles of economic science. M: Progress – University, 1993. P. 401,403,404,405.

¹¹ Chamberlin E. Theory of monopolistic competition-M.: Publishing house in.lit 1959.p.190

¹² Shestiko A. Subject and Methodological Features of the New Institutional Economic Theory. //Problems of Economics, 2003. No. 1. P. 25.33

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

The production costs of economists A. Marshall, J. Clark, V. Pareto and other scientists studied. Their production costs can be seen in scientific works devoted to modern scientific developments about their economic essence in the production process. The production costs of these economists represent a non-class view, studying mainly the production costs from a non-class point of view of the process of material production, which is the main object of the production process, and studying their economic analysis. Relationship with commodity prices.

The production costs of the returned production enterprises analyze the organization and management of the organizational and economic production on the basis of these enterprises. The demand for production costs is studied depending on the size of the production organization at production enterprises. When analyzing production costs as a whole, in our opinion, it is necessary to give an economic analysis of production costs in a non-class form, comparing these production costs with constant variable costs, and total production costs - with the income received from the products manufactured in production.

It is necessary to conduct an economic analysis of the cost of production based on economic and accounting reports.

A. Marshall in his scientific works relied on the marginal study of production costs, that is, on the basis of studying the level of costs of a manufacturing enterprise, based on the law of determining the size of the organization of production costs of the enterprise. The enterprise, depending on the increase in the size of the production process, increases production costs or reduces the size of the manufacturing enterprise, justified by the fact that this will lead to a decrease in costs and that production costs will not be high compared to the volume of production.

According to A. Marshall¹³, in the long run, fixed production costs turn into variable costs. It is believed that variable costs exceed market prices, which forces the company to leave the market.

T. Veblen¹⁴, E. Chamberlin, among economists representing the institutionalism movement, showed the need to limit the prices of products and limit production costs and sales costs. E. Chamberlin¹⁵ believes that the difference between supply and demand is fundamental to the theory of value and that the costs of production increase the demand for a public good and increase its supply.

Economist A. Shestiko considers transnational production costs as "transnational theories" of production costs in the development of economic theory. When studying and assessing production costs, it is necessary to pay attention to the following:

- expresses the fact that the development of production costs is an objective and subjective factor as a factor of production;

As an objective factor, production costs are related to productive forces and lead to economic changes in the production sector of the enterprise and economic development. Therefore, it is necessary to constantly analyze production costs from an organizational and economic point of view. This, in turn, leads to its development as an innovative factor of production costs, its theoretical and practical improvement in economic and production activities;

- there are different views on the cost of production;

¹³ McCoonel K., Brew S.L. Economics. T.2-M. Republic. 1993.P.45

¹⁴ Boder V. Methodological problems of formation of cost-control mechanism // Economy of Soviet Ukraine . - 1990. No. 11 P. 43.

¹⁵Schumpeter J. Theory of economic development. - M.: Progress 1982. P.160-170

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

In economic scientific research, especially in the conditions of a market economy, production costs are associated with deficit production. In our opinion, production costs should be considered not in deficit, but in the production of products necessary for human material life.

If we look at production costs from a scientific point of view, they are objectively related to the production process. In the production process based on the laws of modern market economy, each entrepreneur tries to satisfy the demand of the consumer market, based on the production of some consumer goods for the consumer market and having production costs in order to make a profit.

It also expresses the socio-psychological characteristics of economic activity. In the production process, it is necessary to take into account the socio-psychological characteristics of the subjects of production that are in the production process.

When organizing the production process at enterprises, it is necessary to pay attention to the organization of the psychological, social, economic and political position of the team, which is associated with ensuring that human capital effectively performs its work, while taking into account the socio-psychological characteristics of the production process.

The socio-psychological and economic conditions associated with the organization of the production process of the enterprise are represented by the requirements for the organization of the production process (Figure 1).

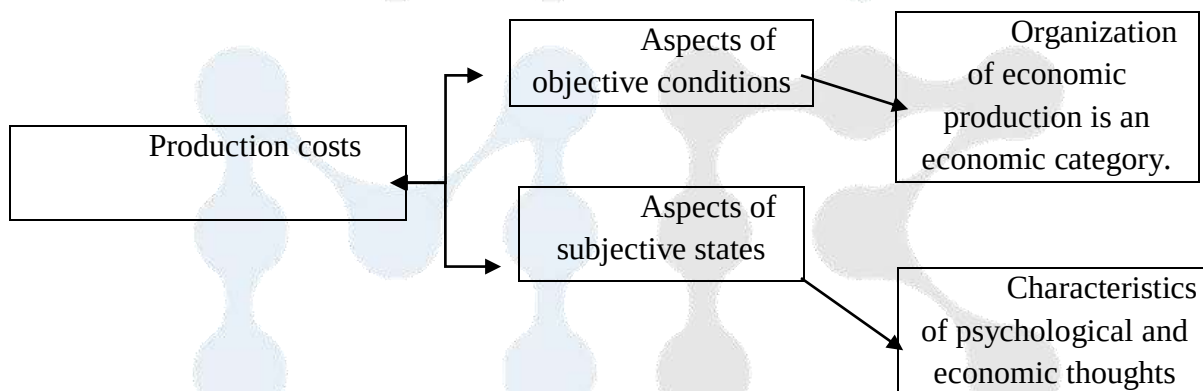


Figure 1. Production costs

The efficient use of these production costs associated with the production process depends on its theoretical and practical organization. The production costs we discussed above are among the main economic categories of this economic theory. A positive solution to the question of their efficient use means that its subject and object are economic categories, and it is necessary to see the economic relations between the subject and object of socio-economic relations in mutual dependence.

It is necessary to find an answer to the question: who can be the subject of production costs?

Ownership of production costs used to organize production, that is, in the absence of a production entity, production costs cannot be established.

The fact that the owners of the enterprise acquire production costs and are the organizers of production guarantees that they are the subject of property. Depending on the forms and levels of organization of production enterprises, production relations are established between the objects of production costs and the subjects organizing their use. Thus, the production costs that make up production as objects of production are those that have a general economic substantive characteristic, from which it is clear that they are associated with various production processes and economic

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

activities. These production costs can be seen in the organization of production of the enterprise, objective and subjective activities.

When organizing the production process, production costs can be considered initially in the organization of production relations. These production relations have the forms of independent production.

Depending on the direction of production, when organizing the production process, production costs will be an independent product of the production process as an economic category. Production costs, depending on the direction of production, have an independent subjective classification. Based on the calculation that the production process will be at the desired level based on the volume of production, depending on the direction of production, it is possible to organize the production economy of the enterprise and produce consumer products based on development.

At the same time, the subjective side of production costs is that production costs themselves are subjects of their use in the production process. The ratio between production costs of manufacturing enterprises depends on the level of use of production costs. The level of its connection with production costs depends on the level of motivation of the human factor. Increasing the motivation of human capital ensures the growth of labor productivity and its quality.

The subject of a manufacturing enterprise, as a rule, is neither a single person nor the owner of production costs. At the same time, according to the economist V. M. Bader, the subject of production costs will also be the head of the enterprise's production. Although we agree with this opinion, the head of the enterprise not only manages the material costs of production, but as a subject of organizing their effective use is considered as a subject of economic interdependence of human capital, labor engaged in production, with material costs of production. and human capital in economic production.

In the conditions of modern market economy it is necessary to regulate production costs on the basis of development of labor of members of the enterprise, based on social-labor relations, and labor of human capital, which are subjects of production. , and workers, organizing and managing their production activities, and between subjects of production enterprises it is necessary to regulate competition between suppliers and organizers of production, taking into account the competition between them. Providing production enterprises with production costs depends not only on the correct organization of the activities of production enterprises at the microeconomic level. Production costs are one of the main economic problems requiring a sustainable solution based on mutual agreement of economic problems. The subject of a production enterprise, as a rule, is not a single person, nor the owner of production costs. At the same time, according to the economist V. M. Bader, the subject of production costs will also be the head of the enterprise's production. Although we agree with this opinion, the head of the enterprise not only manages the material costs of production, but also as a subject of organizing their effective use is considered as a subject of economic interdependence of human capital, labor engaged in production, with the material costs of production. and human capital in economic production.

In the conditions of a modern market economy, it is necessary to regulate production costs based on the development of the labor of enterprise members, based on social and labor relations, and the labor of human capital, which are the subjects of production, and workers who organize and manage their production activities, and between the subjects of production enterprises it is necessary to regulate competition between suppliers and organizers of production, taking into account the competition between them.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Providing manufacturing enterprises with production costs depends not only on the correct organization of the activities of manufacturing enterprises at the microeconomic level. Production costs are one of the main economic problems that require a sustainable solution based on mutual agreement of economic problems.

In order to ensure stable and crisis-free development of the national economy at the micro- and macroeconomic level in our country, the state is the subject that provides the main production costs. The state, the subject that regulates the development of the national economy without an economic crisis, must be organized not only at the enterprise level, but also at the level of the market economy system.

In the conditions of current free economic competition, in the production process based on various forms of ownership, at the macro- and microeconomic level, the main problem of sustainable and effective development of the national economy at the state level is the organization of production associated with For the effective development of economic entities and the development of social relations, the material factor with production costs, it is necessary to organize the organization and work of production and service enterprises on the basis of continuous supply and demand, based on the production costs of the enterprise. and the state on the basis of its management.

There are different views on production costs in economic literature. In particular, economist J. Schumpeter believes that production costs in market conditions, depending on the quality of the main object of the enterprise, require the implementation of production relations between individual workers, between the work collective and between the state in various forms. In practice, the demand for production costs in manufacturing enterprises is regulated by the basic economic law of the market economy based on its own methods.

The method of regulating the demand for production costs of farms is regulated by each farm independently using its own method.

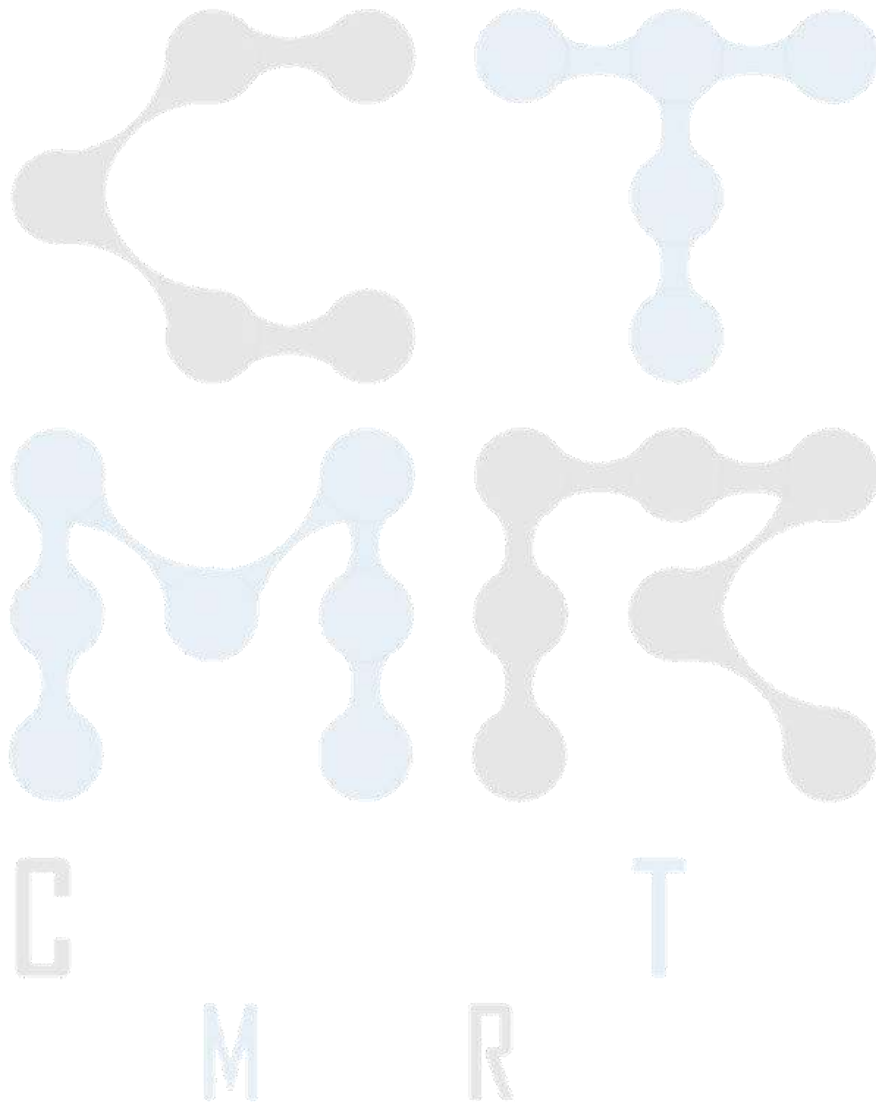
References:

- 1.Кенэ Фонте. Сокритические сочинения – Спб АО “Комплект” 1993. С. 317
- 2.История экономической мысли. М. изд. Моск. Ун-та.1961. 58
3. Кенэ Фонте. Избранные экономические произведения. М. соцэ 1960. С. 387.421.431.
- 4.А.Смит. Исследование о природе и причины богатства народов. М. Соц. 1963 с. 333
- 5.Рикардо Д. Сочинения Т.3-М.:Госпитиз 1955 с.111
- 6.Смит А. Исследование о природе и причины богатства народов М.: Соц 1962 С.333
- 7.К. Маркс. Теория прибавочной стоимости.- Маркс К. и Энгельс Ф. Соч Т.26.Ч. Политиздат 1964 С. 77.78
- 8.К.Маркс. Теория прибавочной стоимости.-Маркс К. и Энгельс Ф.Соч Т.26.Ч.3-м. Политиздат 1962 С. 503
- 9.Фабричинов А.М. Про блемы издержек производства в экономическом учении К.Маркс-Воронеж 1987
10. Маршал А. Принципы экономической науке. М: прогрес – универе, 1993.С. 401,403,404,405.
11. Чемберлин Э. Теория монополистической конкуренции-М.: Изд-во ин.лит 1959.с.190
12. Шестико А. Предметно – Методологическое особенности новой институциональной экономической теории. //Вопросы экономики, 2003. №1. С.25.33

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

13. Макконел К., Брю С.Л. Экономикс. Т.2-М. Республика. 1993.С.45
14. Бодер В. Методолоческие проблемы формирования противозатратного механизма // Экономика советской. Украины.-1990. №11 С.43.
15. Шумпетер Й. Теория экономического развития. -М.: Прогресс 1982. С.160-170



REGULATION OF PRODUCTION COSTS AT MANUFACTURING COMPANIES AS
ECONOMIC PERSPECTIVE.

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Abstract: The paper studies methods to improve company competitive capability through implementing state-of-the-art mechanisms of controlling, managing and organizing costs in manufacturing industry procedures.

Key words: manufacturing company, operating costs, quantity, manufacturing costs, expenses, manufacturing.

The strengthening of market economy relations in the world has led to the need for comprehensive development of production processes at industrial enterprises, improving the methodological foundations of its organization. In particular, the possibilities of achieving a relative competitive advantage over other competing enterprises are expanding by increasing the efficiency of regulating production costs at industrial enterprises, which increases the need to develop modern methods for implementing, managing, controlling and regulating production costs at industrial enterprises.

In the economic literature, many scientific views on the formation of production costs in industrial enterprises are formulated, while theories of this type express various scientifically based opinions on the directions of formation of production costs. In particular, the scientific views of such scientists as F. Kene¹, K. Marx², A. Smith³, D. Ricardo⁴, A. Turgot⁵, J. B. Say⁶, F. Engels⁷ on the formation of production costs in industrial enterprises are evaluated in the economic literature as classical. In this regard, in the structure of production costs, it is necessary to give priority to labor costs and other types of costs. At the same time, labor costs have a significant impact on the market price, i.e. the price of goods and services offered by the enterprise.

The priority of labor costs in the formation of production costs in industrial enterprises by the classical economic school is explained by the fact that during the formation of these scientific

¹ Кенэ Ф. Отдельные экономические продукты. М.: Соцэкгиз, 1960. - 551 с.

² Маркс К. Энгельс Ф. Избранные произведения: в 3 т. 2. М.: Политиздат, 1985. - 543 с.

³ Смит А. Исследование о природе и причинах богатства народов. М.: Соцэкгиз, 1961. - 198 с.

⁴ Рикардо Д. Сочинения. Начало политической экономики и налогового обложения. Т. 2. М.: Политиздат, 1955. - 360 с.

⁵ Тюрго А. Размышление о создании и распределении богатств: Ценности и деньги / пер. я доп. проф. А.Н. Миклешевский. Юрьев: изд.-во "К. Мзтисена" - 1905. - 100 с.

⁶ Сей Дж.Б. Трактат политической экономики / Ж.Б. Сей. - Москва; Изд.-во "К.Т. Солдатенков". 1896. - 400 с.

⁷ Энгельс Ф. Анти-Дюринг. Переворот в науке, произведенный господином Евгением Дюрингом. М.: Политиздат, 1973. - 483 с.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

views, production relations were based on relatively manual labor, i.e. the role of the human factor in the production process was high. Therefore, the developed scientific views on the organization of production costs at industrial enterprises in the conditions of modern economic relations are fundamentally different from the theories of the classical economic school. Nevertheless, it is considered scientifically and practically significant that some scientific views on the organization and formation of production costs in industrial enterprises by representatives of the classical economic school have not lost their specificity for modern production practice.

One of the achievements of classical approaches to the formation of production costs in industrial enterprises is the development of the "proceedings of the theory of value". According to him, the cost of a product - is the total labor cost spent on it⁸. This scientific vision, developed by D. Ricardo, was considered as the "law of value" in the conditions of capitalist production. This scientific point of view can serve as a basis for the fact that in modern production relations today, the presence of characteristics characteristic of the practice of setting the cost of production, that is, calculating all types of costs spent on its production, has not yet lost its significance.

Also, according to the "Say's Law", developed by J.B. Say, who is considered a representative of the classical economic school - when forming production costs in industrial enterprises, it is necessary to ensure the most effective ratio between labor, capital and the value for which the factors of production are calculated. And to ensure such a balance, it is necessary that complete freedom is formed in the national economy of the country⁹. In the modern system of economic relations, this scientific theory has not yet lost its relevance both in scientific and practical terms, due to the fact that when forming production costs from its various compositions, relevant considerations were expressed to improve production costs at industrial enterprises by choosing the most optimal option and using it in practice. "Say's law" is also called as "Market law" or "Sales theory" in some economic studies devoted to the organization and formation of production costs in industrial enterprises.

In scientific studies conducted by representatives of the neoclassical school of economics, who had scientific views on the formation and improvement of production costs in industrial enterprises, such as A. Marshall¹⁰, L. Walras¹¹ and P. Samuelson¹², the factors of production and formation of the market price of goods in a competitive market were studied. According to their scientific views, when studying production costs at industrial enterprises, the relationships between "last", and "normative values" were analyzed, including "normative profitability", "normative productivity", "normative revenues" and "normative costs". In the conclusions formulated in the course

⁸Рикардо Д. Сочинения. Начало политической экономики и налогового обложения. Т. 2 М.: Политиздат, 1955. - 360 с.

⁹Сей Ж.Б. Трактат политической экономики / Ж.Б. Сэй. - Москва; Изд.-во "К.Т. Солдатенков». 1896. - 400 с.

¹⁰Маршалл А.: Чистая теория внешней торговли; и чистая теория домашних ценностей / Альфред Маршалл [Чистая теория домашних ценностей]. Лондон: Лондонская школа экономики и политических наук: 2-е издание, 1935. – 602 стр.

¹¹Вальрас Л. Элементарная чистая политическая экономия - М.: Изограф, 2000. - 448 с.

¹²Самуэльсон П. Цены факторов производства и товаров в состоянии общественного равенства // Вехи экономической мысли, Т. 6. Международная экономика – М.: ТЭИС, 2006. – С. 391-409

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

of the study, it is noted that the established "normative values" should differ at different enterprises, depending on the possibility of conducting economic activity. It was also mentioned that "normative quantities" play an important role in shaping the market price of goods and services.

According to the analysis, in comparison with the classical school of economics, it is clear that the priority of microeconomic approaches in research conducted by representatives of the neoclassical school of economics is close to the scientific views developed by them on the practice of forming and improving production costs in industrial enterprises today. Also, the "normative values" developed by representatives of the neoclassical school of economics and used in the research process are still widely used in the practice of most industrial enterprises today.

In the modern system of economic relations, production costs of industrial enterprises are estimated as an object of such branches as economic theory, enterprise economics, technology of organization and management of production processes, back-end accounting, personnel management, product quality management, technical and economic and financial analysis of enterprise activities, financial accounting and management accounting¹³. This circumstance indicates that today issues related to the organization of production costs and increasing its efficiency in industrial enterprises are one of the priority areas of various branches of science in the system of economic relations.

Based on the results of research conducted by representatives of classical and neoclassical economic schools, which played an important role in the formation of scientific theoretical foundations of market economic relations, it can be understood that the economic categories of production costs and production costs are interrelated concepts. This indicates the need to distinguish between the common and distinctive features of these two economic categories.

In research carried out by our economist A.Sh. Shodmonov, we can see that the concepts of production cost and production cost differ from each other. He believes that "production costs are all types of monetary expenses that an enterprise spends on acquiring economic resources for the purpose of producing products. The enterprise begins its activity with the purchase of material resources from the market, that is, equipment, machine tools, means of transport and communication for the production of products, raw materials, fuel, various materials, and labor from the labor market. Production costs can include such expenses as the costs of raw materials, basic and auxiliary materials, fuel and energy, depreciation of fixed capital, payroll and social insurance contributions, and interest payments. And the monetary value of all costs incurred by an industrial enterprise for the production of products is the cost of production"¹⁴. Based on this scientific view, it will be possible to conclude that production costs have a direct impact on the formation of production costs.

According to M. Boltaboeva, "the cost of production is a monetary expression of the total current costs of an enterprise for the production of products, its sale, performance of works or provision of services. In commodity production, the most important elements of prime cost - raw materials, basic materials, costs for electric power resources, mainly additional wages, social insurance contributions are made up of depreciation and other expenses. While the main product elements mentioned above

¹³Сараев А.Л. Организационные системы промышленных предприятий. Вестник СамГУ. № 1 (92). 2012.-с. 77-90

¹⁴ Shodmonov Sh. Ishlab chiqarish harajatlari [elektron manba]. URL: <https://qomus.info/encyclopedia/cat-t/ishlab-chiqarish-xarajatlari-uz/>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

represent production costs”¹⁵. Even from this scientific point of view, we will be able to see similar features of the description of economic terms such as the cost of production and production costs given by Sh. Shodmonov.

Economist M. Kovalchuk, clarified such concepts as "costs", "expenses", "costs" and "prime cost" related to production costs at industrial enterprises. According to this, the term "costs" is a broader concept than the terms "expenses", "costs" and "prime cost", and it is also concluded that any costs will be used to maintain production activities and develop them in the future¹⁶.

D..S.Toshnazarova believes that "production costs are a monetary expression of the value of all resources spent on achieving the intended goals (production of products, purchase of goods, provision of services, performance of works, implementation of projects). This term has many meanings, and different types of costs are used in different situations. For example, manufacturing enterprises incur numerous costs for producing and selling products to customers. These may include material costs, payroll costs, depreciation of machinery and equipment, repair costs, food and medical expenses for staff, electricity costs, food storage, advertising, delivery to customers, managers' salaries, telephone and Internet costs, and other expenses. The type and amount of costs will depend on the specifics of the organization's activities, its size, and other factors”¹⁷.

According to the analysis, in the process of studying production costs in the economic literature, scientists-economists have implemented various approaches, explaining this circumstance by the fact that the object of research, the purpose of the subject are different. In particular, in the modern economic literature, we can see that fixed and variable costs are mutually differentiated in descriptions, which gives the term "costs", based on the "Theory of value". In accordance with it, fixed production costs include such costs as payment obligations of the enterprise, taxes, depreciation deductions, rent, security service expenses, and salaries of management personnel. On the other hand, variable costs consist of the costs of raw materials, materials, fuel, transportation services, workers' wages, etc.¹⁸

In practical analysis, production costs at any enterprise are reflected in the accounting statements. For this reason, we believe that accounting concepts should also pay attention to the definition given in relation to the economic term "production costs". According to this, "production costs are expressed in a decrease in equity in the reporting period in the form of a decrease in assets or an increase in the volume of financial liabilities that are not related to the distribution of contributions

¹⁵ Boltaboyeva M. Tannarx [elektron manba]. URL: <https://qomus.info/encyclopedia/cat-t/tannarx-uz/>

¹⁶ Ковальчук М.Т. Учет затрат на производство и калькирование себестоимости продукции на предприятиях нефтегазодобывающей промышленности. Автореф. дисс. ни так. летать Шаг. с.е.н. Москва 2004 – 28 с.

¹⁷ Toshnazarova D.S. Harajatlar va tannarx tushunchasi, ularning mazmuni va tavsifi. “Iqtisodiyot va innovatsion texnologiyalar” ilmiy elektron jurnali № 3, may-iyun, 2021 y. 31-41 betlar URL: https://iqtisodiyot.tsue.uz/sites/default/files/maqolalar/4_Toshnazarova.pdf

¹⁸ Shodmonov Sh. Ishlab chiqarish harajatlari [elektron manba]. URL: <https://qomus.info/encyclopedia/cat-t/ishlab-chiqarish-xarajatlari-uz/>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

of the enterprise in favor of the rights holders of equity claims"¹⁹." This description is a generally accepted rule in the field of Accounting discipline for the production costs of any enterprise.

In the foreign scientific literature, a distinction is made between permanent (ordinary) and non-dependent (unexpected, unusual) types of production costs of industrial enterprises (see Fig.1.1). According to it, the fixed production costs of an enterprise are the costs that arise as a result of the relationship between operational, financial and innovative scientific research that occurs in the course of the company's economic activity²⁰.

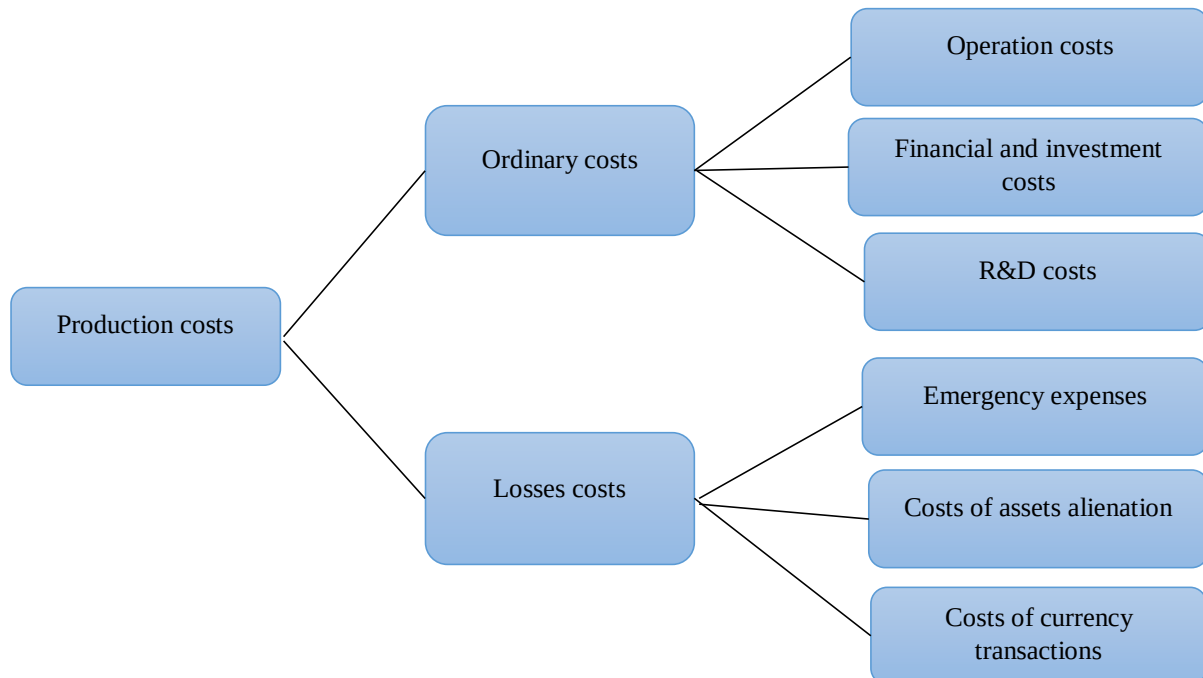


Figure 1.1. Description of production costs in industrial enterprises²¹

A significant part of the company's production costs is accounted for by operating activities, while operating expenses include costs related to the cost of products sold, sales costs, administrative management and other types of operating activities of the enterprise. Based on the operational pathways of the enterprise, it will be possible to distinguish between production-related and non-production-related types in terms of the ratio of these types of costs to the production process (see Figure 1.2).

According to the US cost analysis, "production costs" consist of the cost of materials, including the costs associated with converting these materials into finished products. This requires that all production costs are accounted for in the cost of finished products in accordance with the requirements

¹⁹ Toshnazarova D.S. Harajatlar va tannarx tushunchasi, ularning mazmuni va tavsifi. "Iqtisodiyot va innovatsion texnologiyalar" ilmiy elektron jurnali № 3, may-iyun, 2021 y. 31-41 betlar URL: https://iqtisodiyot.tsue.uz/sites/default/files/maqolalar/4_Toshnazarova.pdf

²⁰Dileep G. Dhavale. Product Costing for Decision Making in Certain Variable-Proportion Technologies. // Journal of Management Accounting Research (2007). 19 (1). – pp. 51-70. URL: <https://publications.aaahq.org/jmar/article-abstract/19/1/51/777/Product-Costing-for-Decision-Making-in-Certain?redirectedFrom-fulltext>

²¹ Created by Author.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

of GAAP (Generally Accepted Accounting Principles). According to it, there are such types of production costs as direct materials, Direct labor, and Manufacturing overhead²².

Based on the above, we can conclude that in accordance with international GAAP requirements, production costs are production stocks in the production process of products (works, services), as well as direct labor and overhead production costs spent on their processing, and that as a result of rational addition of these costs, the cost of finished products arises.

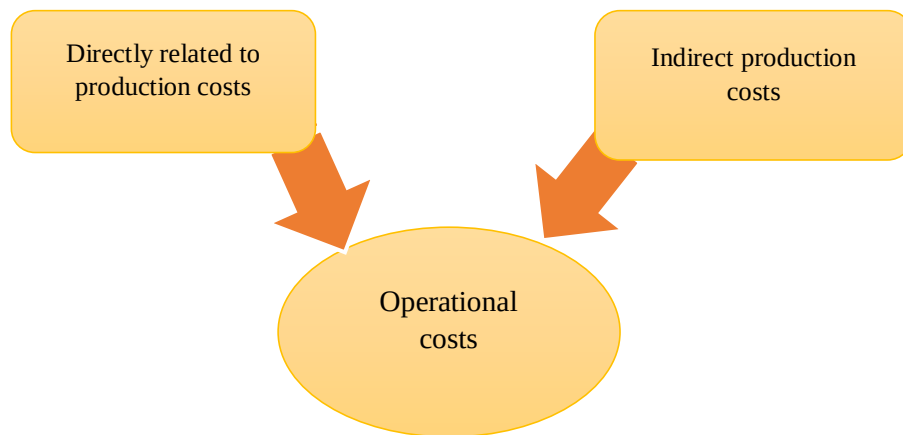


Figure 1.2. Production costs associated with the company's operating activities²³

In general terms, production costs are formed as a result of the realization of the cost of production. From this we can conclude that finding the cost of production in the cost of finished products is carried out in the form of the cost of finished products.

Depending on the method of assigning production costs to cost objects: direct and indirect production are divided into costs.

Direct costs - are costs that, by their economic nature, can be directly attributed to a specific cost object. For example, in the automotive industry, direct costs are the cost of the body, engine and other spare parts of the car, as well as the cost of paying for the labor of production workers engaged in the production of this type of car. These costs can be directly attributed to the cost of production, depending on which car was used up in production. Some literatures also describe the correct costs.

Indirect costs are those costs that, due to their economic nature, cannot be directly attributed to a specific cost object, first accumulated (accumulated), and then distributed according to certain criteria based on the cost of production. For example, the cost of paying a quality control inspector for automobile production cannot be attributed to the cost of a single car, since the work of this employee is considered dependent on quality control of several types of cars. Therefore, it is

²² Product Costing Calculation: What is Product Costing? [Web Resource], URL: <https://www.masterclass.com/articles/product-costing>

²³ Created by Author.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

advisable to distribute his salary in proportion to the working hours spent on quality control of each type of car.

In the research conducted by A.N. Makhmudov, it is scientifically proved that in the practice of our country, 12% of total indirect expenses can be attributed to the list of direct expenses (see Table 1.1). Studies have shown that at domestic industrial enterprises, the level of material consumption of products is partially combined with the predominance of mechanized processes. Thus, as a basis for the distribution of indirect costs, it is advisable to choose an indicator in which the main production combines the main material costs of workers and labor costs, which can be used in the distribution of total costs for prime cost and distribution of orders for finished production. The necessary information can be obtained from the data presented in the table, based on updated calculations²⁴.

Table 1.1

Manifestation of indirect types of production costs in the form of direct costs in the practice of Uzbekistan²⁵

Name of costs	Accounting basics
Consumption of electricity, gas, fuel, water and compressed air and other types of energy for starting machine tools, sewing machines, presses and other production mechanisms.	Cost centers, product names (orders, business processes), equipment units (fixed asset codes) realize the accumulated resource costs using electronic measurement tools and remote data acquisition
Package completion costs: costs for installing sewing and weaving machines, covering and spare parts	Number of processed products, parts and semi-finished products of their own production according to the list product types
Costs of moving goods within the enterprise	Remote online data acquisition for measuring the performance of electronic equipment for products (orders, business processes) and responsibility centers
Material costs not related to production (overspending of basic materials, semi-finished products, products, purchased products, fuel and electricity; loss of material resources)	Identification of materials, semi-finished products, purchased products, fuel and electricity based on documents drawn up in the process of operational control over the use of resources.
Costs of correcting products that are not	List of items of rejected goods (orders)

²⁴ Maxmudov A.N. Sanoat korxonalarida harajatlarini maxsulot tannarxiga taqsimlash metodologiyasini takomillashtirish istiqbollari. "Iqtisodiyot va innovatsion texnologiyalar" ilmiy elektron jurnali. № 3, may-iyun, 2022 y. 23-30 betlar. URL: https://iqtisodiyot.tsue.uz/sites/default/files/maqolalar/4_Makhmudov.pdf

²⁵ Вышеуказанный источник.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

suitable for use	
Costs of packaging and transportation of finished products to the place of storage	List of names of finished products (orders)

In the economic literature formulated by industrial enterprises on the organization, formation and regulation of production costs, based on the analysis of scientific ideas, it is concluded that production costs can arise not only in the formation of production costs, but also due to the results of economic activity of the enterprise that do not depend on it. This condition means that the part of production costs that leads to the cost of production is the basis for forming the cost of finished products.

List of reference:

1. Кенэ Ф. Избранные экономические произведения. М.: Соцэкгиз, 1960. - 551 с.
2. Маркс К. Энгельс Ф. Избранные произведения: в 3 Т. 2. М.: Политиздат, 1985. - 543 с.
3. Смит А. Исследование о природе и причинах богатства народов. М.: Соцэкгиз. 1961. - 198 с.
4. Рикардо Д. Сочинения. Начало политической экономики и налогового обложения. Т. 2. М.: Политиздат. 1955. - 360 с.
5. Тюрго А. Размышление о создании и распределении богатств: Ценности и деньги / пер. и доп. проф. А.Н. Миклешевского. Юрьевъ: изд.-во «К. Мзтисена» - 1905. - 100 с.
6. Сей Ж.Б. Трактат политической экономии / Ж.Б. Сей. - Москва; Изд.-во «К.Т. Солдатенков». 1896. - 400 с.
7. Энгельс Ф. Анти-Дюринг. Переворот в науке, произведённый господином Евгением Дюрингом. М.: Политиздат, 1973. - 483 с.
8. Marshall A: The pure theory of foreign trade; and the pure theory of domestic values / By Alfred Marshall [The pure theory of domestic values]. London: The London School of Economics and Political Science: 2nd Edition, 1935. – 602 pp.
9. Вальрас Л. Элементы чистой политической экономии – М.: Изограф, 2000. – 448 с.
10. Самуэльсон П. Цены факторов производства и товаров в состоянии общественного равновесия // Вухи экономической мысли, Т. 6. Международная экономика – М.: ТЕИС, 2006. – с. 391-409
11. Сараев А.Л. Организация системы управления издержками промышленных предприятий. Вестник СамГУ. № 1 (92). 2012.-с. 77-90
12. Shodmonov Sh. Ishlab chiqarish harajatlari [elektron manba]. URL: <https://qomus.info/encyclopedia/cat-t/ishlab-chiqarish-xarajatlari-uz/>
13. Boltaboyeva M. Tannarx [elektron manba]. URL: <https://qomus.info/encyclopedia/cat-t/tannarx-uz/>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

14. Ковальчук М.Т. Учет затрат производства и калькулирование себестоимости продукции на предприятиях нефтегазодобывающей промышленности. Автореф. дисс. на соис. учен. степ. к.э.н. Москва 2004 – 28 с.
15. Toshnazarova D.S. Harajatlar va tannarx tushunchasi, ularning mazmuni va tavsifi. “Iqtisodiyot va innovatsion texnologiyalar” ilmiy elektron jurnali № 3, may-iyun, 2021 y. 31-41 betlar URL: https://iqtisodiyot.tsue.uz/sites/default/files/maqolalar/4_Toshnazarova.pdf
16. Dileep G. Dhavale. Product Costing for Decision Making in Certain Variable-Proportion Technologies. // Journal of Management Accounting Research (2007). 19 (1). – pp. 51-70. URL: <https://publications.aaahq.org/jmar/article-abstract/19/1/51/777/Product-Costing-for-Decision-Making-in-Certain?redirectedFrom-fulltext>
17. Product Costing Calculation: What is Product Costing? [Web Resource], URL: <https://www.masterclass.com/articles/product-costing>
18. Maxmudov A.N. Sanoat korxonalarida harajatlarini maxsulot tannarxiga taqsimlash metodologiyasini takomillashtirish istiqbollari. “Iqtisodiyot va innovatsion texnologiyalar” ilmiy elektron jurnali. № 3, may-iyun, 2022 y. 23-30 betlar. URL: https://iqtisodiyot.tsue.uz/sites/default/files/maqolalar/4_Makhmudov.pdf

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

THE IMPORTANCE OF PUNCTUALITY AND HARD WORK IN STUDENTS' LIVES

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Abstract: *In today's fast-paced and competitive world, the values of punctuality and hard work have become more crucial than ever, especially for students. This article explores the significance of punctuality and hard work in the lives of students, emphasizing their impact on academic success and personal growth. Punctuality fosters responsibility and enhances time management skills, leading to improved academic performance and reduced stress. In parallel, hard work cultivates resilience and a growth mindset, equipping students to tackle challenges and seize learning opportunities. Research demonstrates a strong correlation between these traits and overall student achievement.*

Keywords: Punctuality, hard work, academic success, time management, resilience, growth mindset, student development, personal growth, educational outcomes.

ВАЖНОСТЬ ПУНКТУАЛЬНОСТИ И ТРУДОЛЮБИЯ В ЖИЗНИ СТУДЕНТОВ

Аннотация: *В современном быстро меняющемся и конкурентном мире ценности пунктуальности и трудолюбия стали более важными, чем когда-либо, особенно для студентов. В этой статье исследуется значение пунктуальности и трудолюбия в жизни студентов, подчеркивая их влияние на академические успехи и личностный рост. Пунктуальность повышает ответственность и улучшает навыки управления временем, что приводит к улучшению успеваемости и снижению стресса. Параллельно упорный труд развивает устойчивость и мышление роста, давая учащимся возможность решать проблемы и использовать возможности обучения. Исследования демонстрируют сильную корреляцию между этими характеристиками и общими достижениями учащихся.*

Ключевые слова: Пунктуальность, трудолюбие, академические успехи, тайм-менеджмент, устойчивость, установка на рост, развитие учащихся, личностный рост, образовательные результаты.

TALABALAR HAYOTIDA PUNKTUALLIK VA MEHNATSEVARLIKNING AHAMIYATI

Annotatsiya: *Bugungi shiddatli va raqobatbardosh dunyoda punktuallik va mehnatsevarlik qadriyatlarini, ayniqsa, talabalar uchun har qachongidan ham muhimroq bo'lib qoldi. Ushbu maqola talabalar hayotidagi aniqlik va mehnatsevarlikning ahamiyatini o'rganib, ularning akademik muvaffaqiyat va shaxsiy o'sishga ta'sirini ta'kidlaydi. Vaqtinchalik mas'uliyatni kuchaytiradi va*

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

vaqtni boshqarish ko'nikmalarini oshiradi, bu esa akademik samaradorlikni oshirishga va stressni kamaytirishga olib keladi. Shu bilan birga, mashaqqatli mehnat chidamlilik va o'sish tafakkurini rivojlantiradi, talabalarni qiyinchiliklarga dosh berishga va o'rganish imkoniyatlaridan foydalanishga yordam beradi. Tadqiqotlar shuni ko'rsatadiki, bu xususiyatlar va talabalarning umumiy yutuqlari o'rtasida kuchli bog'liqlik bor.

Kalit so'zlar: *O'z vaqtida bo'lishlik, mehnatsevarlik, akademik muvaffaqiyat, vaqtni boshqarish, chidamlilik, o'sish tafakkuri, talabalar rivojlanishi, shaxsiy o'sish, ta'lim natijalari*

Introduction.

Punctuality: A Key to Success

Punctuality, or the habit of being on time, reflects a student's commitment and responsibility. Arriving on time for classes, assignments, and exams demonstrates respect for the time of teachers and peers. It helps students develop discipline and organizational skills, essential traits for managing the increasing demands of academic life.

Importance of Punctuality

1. Time Management: Punctuality helps students learn effective time management. Meeting deadlines for assignments and being on time for classes fosters discipline;

2. Respect and Responsibility: Arriving on time shows respect for teachers and classmates. It demonstrates a sense of responsibility and commitment to one's education;

3. Positive Habits: Developing the habit of punctuality can carry over into professional life. Employers often seek individuals who value time and can manage it well;

4. Enhanced Learning: Being punctual ensures that students do not miss out on important information. Arriving late can lead to gaps in understanding and hinder overall academic performance [1:P.75].

Hard Work: The Foundation of Achievement

Hard work is another fundamental trait that significantly impacts a student's journey. Hard work instills a sense of achievement and boosts self-esteem, as students see their efforts leading to tangible results. Moreover, the value of hard work extends beyond academics. It prepares students for the workforce, where dedication and perseverance are essential for success. Learning to work hard can instill a growth mindset, encouraging students to embrace challenges and learn from failures.

Hard work involves dedication and the willingness to put in effort towards achieving goals. Studies have shown that students with a strong work ethic often outperform their peers, regardless of their innate abilities [2:1087]. This commitment to hard work is closely associated with the concept of "grit", which emphasizes perseverance and passion for long-term goals.

Hard work is directly linked to better academic performance. Diligent studying and consistent effort in completing assignments lead to higher grades and a deeper understanding of the material [3:P.30].

Furthermore, hard work cultivates a growth mindset. Carol Dweck's research emphasizes that students who believe their abilities can be developed through dedication and hard work are more likely to embrace challenges and persist in the face of setbacks [4:P.7]. This mindset is essential for lifelong learning and adaptability in an ever-changing world.

Balancing Punctuality and Hard Work

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

The combination of punctuality and hard work creates a powerful foundation for students. When students prioritize being on time and dedicate themselves to their tasks, they create a cycle of success. They are more likely to meet deadlines, perform well on assessments, and contribute positively to group projects.

Goleman discusses how attention and focus relate to productivity, highlighting the importance of being punctual and dedicated to one's work [5:P.190]. Additionally, these traits promote a sense of accountability. Students learn to take responsibility for their actions and time management, skills that are invaluable in both academic and professional settings.

Conclusion.

Punctuality and hard work are essential qualities that significantly impact students' academic success and personal growth. Punctuality instills a sense of responsibility and respect for others' time, creating a disciplined environment that enhances learning. Arriving on time to classes and meetings ensures that students do not miss valuable information and fosters better participation in discussions and activities.

On the other hand, hard work is the driving force behind achievement. It involves dedication, perseverance, and a commitment to putting in the effort required to excel academically. Students who embrace hard work develop crucial skills such as critical thinking, problem-solving, and resilience. These skills not only contribute to academic success but also prepare students for future challenges in their careers.

References:

1. Stephen R. Covey. *The 7 Habits of Highly Effective People*. Free Press, 1989.-P.172.
2. A. Duckworth., Ch. Peterson., M.D. Matthews., & D. Kelly, *Grit: Perseverance and passion for long-term goals*. *Journal of Personality and Social Psychology*, 2007.-P.1087–1101.
3. A. Duckworth, *Grit: The Power of Passion and Perseverance*. Scribner, 2016.P.1761
4. Carol S. Dweck . *Mindset: The New Psychology of Success*. Random House.2006.P.283
5. D. Goleman. *Focus: The Hidden Driver of Excellence*. HarperCollins, 2013. P.250.

DIAGNOSIS OF HYPERTENSION DISEASE IN CHILDREN

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Abstract: Hypertension, or high blood pressure, in children was previously considered a rare condition, but with obesity and lifestyle changes among children and adolescents, the problem is becoming more widespread. This article highlights the important aspects of diagnosing hypertension in children.

Keywords: hypertension, diagnosis, obesity and lifestyle, family history and genetic predisposition Causes of hypertension in children Primary (essential) hypertension: It is more common in adolescence and its main causes include obesity, low physical activity, improper There are things like diet and genetics.

Introduction:

Hypertension, or high blood pressure, in children was previously considered a rare condition, but with obesity and lifestyle changes among children and adolescents, the problem is becoming more common. This article highlights the important aspects of diagnosing hypertension in children. Causes of hypertension in children Primary (essential) hypertension: This is more common during adolescence and its main causes include obesity, low physical activity, poor diet, heredity. Secondary hypertension: This type is rare and mainly associated with serious causes such as kidney disease, endocrine system disorders, cardiovascular disease or tumor. Hypertension Risk Factors Obesity: Increasing body weight increases the risk of developing hypertension in children. Family history and genetic predisposition: A family history of hypertension or cardiovascular disease increases the risk of developing hypertension in a child. Low physical activity: Lack of physical activity is also an important factor that increases the risk of hypertension. Eating habits: Eating high amounts of salt, tending to fatty and high-calorie foods contribute to the development of hypertension. Psychological stress: Stress at school, unrest at home or others can cause high blood pressure in children. Blood pressure measurement method in children. Cuff selection: For children, smaller cuffs should be used. An adult-sized cuff may give inaccurate results. Correct measurement: The child should be at rest and the hand should be at the level of the heart during the measurement. Precautions during measurement: To get the correct result, it is important to measure blood pressure several times, rechecking at different times of the day. Criteria for determining hypertension Normal blood pressure: A child's blood pressure is considered normal if it is below the 90th percentile according to tables specially designed for age, sex, and height. Borderline blood pressure: Blood pressure in the 90-95th percentile is considered high. Hypertension: If a child's blood pressure rises above the 95th percentile, it can be confirmed as hypertension. Several measurements are required for accuracy. Laboratory tests Blood tests: Important in determining the cause of hypertension, they measure electrolytes, glucose, lipid profile and hormone levels. Urinalysis: Monitoring changes in urine is important to check for kidney disease. Kidney function test: Kidney disease can be one of the causes of hypertension, so it is necessary to check the kidney function. Visual diagnostic methods Ultrasound examination: Helps to determine the state of the kidneys and heart. Through this method, it is possible to determine the state of blood vessels and anomalies of the kidney. Cardiac examination (ECG and

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY**VOLUME-4, ISSUE-11**

ECHO): Performed to assess heart function, detect heart attacks and other complications caused by hypertension. Radiological examinations: In some cases, examinations such as MRI and CT are used for more extensive diagnosis. Differential diagnosis When hypertension is detected, it is important to determine whether it is primary or secondary. In this case, the following diagnostic approaches are important: Identifying the main diseases: Identifying whether there are diseases of the kidney or endocrine system. Cardiovascular tests: These tests can help detect other conditions that can cause hypertension. Hormone levels and severity: It is important to evaluate endocrine system changes that may increase blood pressure. Treatment based on lifestyle changes. Proper nutrition: A diet rich in vegetables and fruits is recommended to reduce salt. Physical activity: Moderate physical activity is recommended at least 3-5 days a week. Stress management: Taking steps to reduce stress in children, including increasing play and relaxation time, is beneficial. Drug treatment If lifestyle changes are ineffective and the risk of hypertension is high, safe antihypertensive drugs for children may be recommended. But these drugs should be used only under the supervision of a doctor. Long-term follow-up and prevention Regular follow-up is important to control hypertension in children and prevent adverse consequences. In this case, it is necessary not to change the blood pressure, necessary examinations and medical supervision. This is important for healthy and sustainable development. Early detection and treatment of hypertension in children can prevent cardiovascular diseases, kidney problems and other complications that may occur in the future. Therefore, it is important to maintain the general health of children by choosing the right methods of diagnosis and treatment. The clinic of hypertension in children, that is, the symptoms of the disease, can sometimes be more different than in adults and sometimes unclear. or hidden. The reason for this is that the symptoms of high blood pressure are less common in children or the symptoms are similar to other diseases. The following symptoms are more common in children's hypertension clinics: Headache: One of the symptoms of hypertension in children is headache, which is often worse in the evening or after activity. This symptom is also observed in adults and is one of the first signs of hypertension. Dizziness and nausea: These symptoms are especially common in adolescents and can be a complication of hypertension. Nausea and dizziness occur as a result of rapid changes or increases in blood pressure. Fatigue and decreased physical activity: Children may experience general fatigue as a result of increased blood pressure. They may have difficulty performing their usual physical activities or tire easily. . Impaired vision: Children with high blood pressure may experience vision problems, such as black dots or blurriness in front of the eyes. It occurs due to the effect of blood pressure on the eye vessels. Shortness of breath and heart rate changes: High blood pressure in children can cause shortness of breath or a fast heart rate. These symptoms indicate the effect of high pressure on the cardiovascular system, and as a result of hypertension, the load on the heart increases. Sleep disorders: Children with hypertension may also have symptoms such as difficulty falling asleep or frequent awakenings. Such sleep disorders are also one of the current symptoms of hypertension. Since hypertension in children is often hidden and without obvious symptoms, it is important to detect them in time and undergo a medical examination if the above-mentioned clinical signs are present. At the same time, other diseases and factors that cause hypertension in children should be taken into account, since hypertension can often be accompanied by other health problems. Secondary hypertension: This type is rare and is mostly associated with serious causes such as kidney disease, endocrine system disorders, cardiovascular disease, or tumors. Hypertension Risk Factors and Obesity: Increasing body weight increases the risk of developing

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY**VOLUME-4, ISSUE-11**

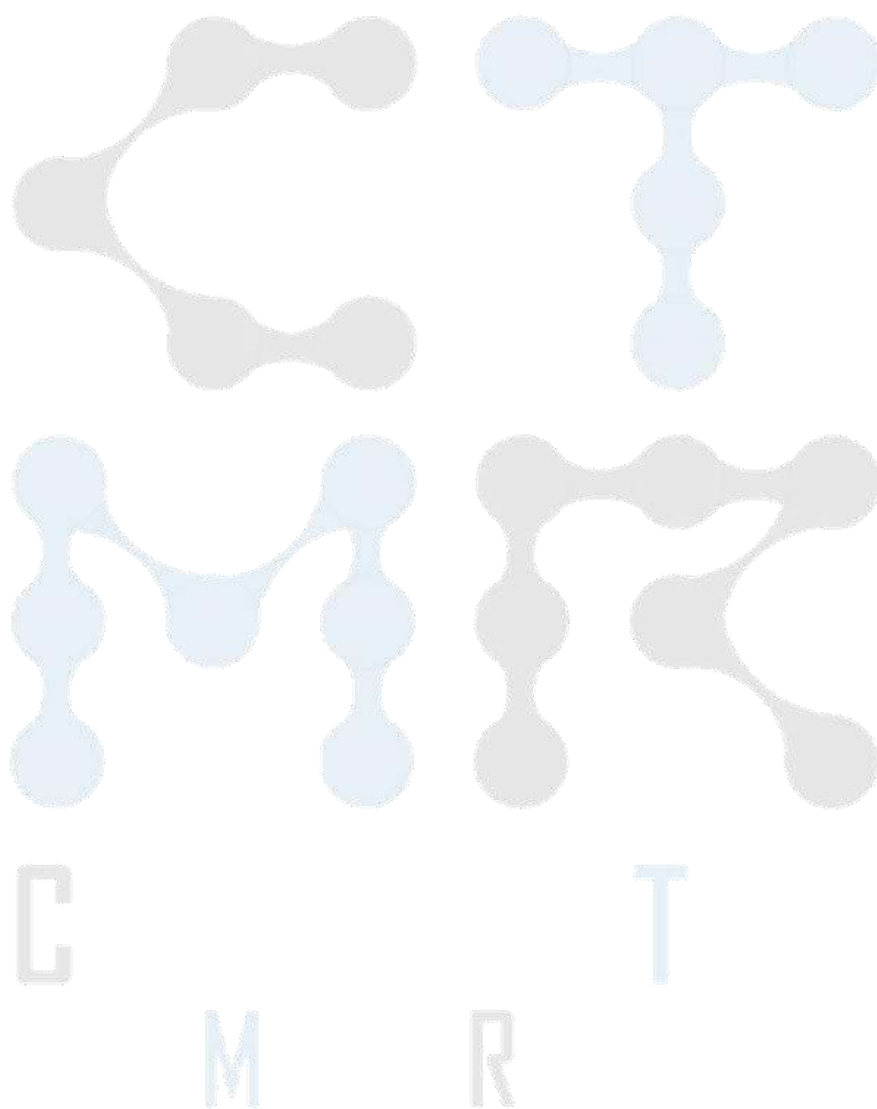
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Conclusion: Early detection and treatment of hypertension in children can prevent cardiovascular diseases, kidney problems and other complications that may occur in the future. Therefore, it is important to maintain the general health of children by choosing the right ways of diagnosis and treatment.

References:

L.M. Garifulina va M.J. Ashurova – Pediatriya amaliyotida hamshiralik ishi (2022). G.H. Iskanova – Poliklinik pediatriya (2016) X.Q. Maxmudov va boshqalar – Pediatriya asoslari (2019). M.R. Tursunov – Yosh bolalarda infeksiyon kasalliklar (2018). B. Axmedov – Bolalardagi o'smalar va ularning profilaktikasi (2017).



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STUDY OF CULTURAL AND MORPHOLOGICAL PROPERTIES OF SYMBIOTIC DIAZOTROPHIC BACTERIA FROM DIFFERENT GEOGRAPHICAL REGIONS OF CENTRAL ASIA

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Introduction

As it is known, in soil live alive organisms of different size and various origin. They improve physical, chemical and biological properties of soil, form its fertility, play the important role in increase of efficiency of bring fertilizers (especially mineral). One of them are the nodule bacteria, which are considered as most important for agricultural practice of microorganisms.

The nodule bacteria are one of most important for agricultural practice of microorganisms. As it is known, these bacteria's form on roots of bean plants nodules and, being in nodules, actively fix atmospheric nitrogen and transfer it to plant - owner. Because of symbiotic nitrogen fixation many bean cultures are not only satisfied completely with the needs for nitrogen, but also accumulate significant quantities of nitrogen in soil (Dorosinskiy, 1970; Mishustin, Shilnikova 1973; German Spaynk etc., 2002).

The joint activity of bean plants and nodule bacteria represent the most effective way of biological linkage of free nitrogen of an atmosphere, therefore there is an enrichment of soil by biological nitrogen and plants by elements of a nitric feed.

One of the major receptions of increase of productivity of bean cultures is inoculation - the presowing processing its seeds by active strains of nodule bacteria. The application of a bacterial preparation containing nodule bacteria, under sowings of bean cultures considerably raises their crop and content of a protein in plants, increases fertility of soil, and also essentially reduces the quantity of mineral nitric fertilizers, bring in the soil, which are rather expensive and causing significant pollution of an environment (Heichel, 1978; Allen, Allen, 1981; Niseman, Hatman, Smith, 1985; Kojemyakov, 1997).

Being of one of the basic parts of ecologization of agricultural manufacture, the biological nitrogen allows to receive high and stable crops, providing thus reproduction of soil fertility (Kojemyakov, 1997; Heichel, 1978; Niseman, Hartman, Smith, 1985).

Therefore, problem of biological fixing of atmospheric nitrogen by bean cultures in symbiosis with nodule bacteria becomes one of major in the theory and practice of world agriculture. The successful decision of it provides substantial growth of resources of vegetative protein, increase of fertility soil and protection of environment from pollution.

Proceeding from above-mentioned, the purpose of our work was allocation and study of nodule bacteria - microsymbionts of mungbean (*Rhaseolus aureus* Roxb.), definition of the taxonomic status used bacterial isolates within the limits of family Rhizobiaceae and to create a collection of highly active and industrial - valuable cultures of bacteria.

Materials and methods of researches

The basic object of our researches were the nodule bacteria with unknown taxonomic position situation being microsymbionts of mungbean (*Phaseolus aureus* (Roxb.) allocated from different geographical regions of Central Asia. Besides in work are used typical strains of nodule of bacteria,

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

which were received from a National collection of nodules of bacteria at the Research Institute of Agricultural Microbiology (St-Petersburg). The strains with a known regular situation were used as control.

The rhizobia strains were isolated from nodules of bean plants, evolved in field conditions. Separated from roots and washed out by water the nodules superficially were sterilized by spirit, washed out, crushed in small quantity of sterile water and sifted out on cups with nutritious environment N 79 (Allen, 1959; Vincent, Hymphrey, 1970). The bacterial isolates were cleared by 3-multiple consecutive clonation. Cleanliness of cultures was supervised by micro copying. Described cultural and morphological properties were described (kind of Linked out colonies, form of ceels, mobility, size). Bicked out allocated cultures were tested for formation of nodules in sterile conditions in test-tubes and in jars with agarized mineral environment or with vermiculite (Genetic methods of selection of nodule bacteria, 1984). Repetition of experiences was 6-multiple. The results of inoculation were taken into account after 1,5 months. The cultures formed active pink nodules, had been used for the further work.

Study of cultural and morphological properties of nodule bacteria were carried out according to recommendations, accepted in microbiology and methodical recommendations (Kelvin, 1968; Lindstrom et al., 1983; The methodical instructions, 1985).

For the analysis of a spectrum of bacteriophages fyfis action of in test-tubes with 4 ml of 0,7% water agar was added a suspension tested on sensitivity to phages of strain (up to a final titer 10^{-10} xl/ml). Contents of test-tubes was mixed and poured out in cups Petri with mannitol agar. After hardening the top layer of agar on its surface ("lawn") the drops of phagolizates with titer not less than 10^6 PFU (platelet forming unit) / ml were rendered. As the stock(bar) = tthe control was used a cup with a lawn of display (sensitive) strain. The cups were maintained in thermostat within 3 day, then marked the presence of a zone of bacterial lysis in places of drawing of phagolizates (Lindstrom at al., 1983).

Results of researches and their discussion.

Local strains of nodule bacteria were isolated from nodules of bean plants, grown in natural field conditions in different geographical regions of Central Asia and Uzbekistan. The primary microscopic research of nodule bacteria strains has shown, that their morphology. namely form and mobility of cells, is typical for rhizobia.

All allocated strains of nodule bacteria of Lucerne, mungbean are- gram-negative mobile Bacilla. These microorganisms, as well as typical nodule bacteria on mannitol agar formed colonies transparent, homogeneous or granular, glossy, on colour slightly colored, white, colourless or cream colour, in round, shape with equal edges, convex, cone- shaped, spherical or not spherical, with small or moderate quantity of slime (table 1).

The measurement of acidity of a cultural liquid of two days cultures of rhizobia has shown a variation of pH from 4,4 up to 6,6. The strains did not dilute gelatin. At recycling by them of carbohydrates the gasification was not observed.

The size of colony of investigated strains made from 1,0 mm up to 2,5 mm, local strains were differed by larger size of colony from 2,0 mm and more. On growth rate the local strains of mungbean (M2, M4, M6, M7, M8, M 11, M18, M20, M22 etc.) were differed from typical strains, as separate colonies occurred for 2-3 day, in other variants for 4-5 day (table 1). To this sign these strains were similar to typical quickly growing strains of nodule bacteria of mungbean CIAM 2620.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

For growth and development of the majority of nodule bacteria the optimum temperature is 27°-28°C. Ability to grow at 37°C- is a specific property of some microorganisms, that is used as one of the tests at their identification. At study of local strains, it was revealed, that they are capable to grow at temperature 37°C and higher concentration of NaCl, than appropriate typical strains (table 1.). The growth of colonies of the rhizobia strains at concentration of NaCl in environment equal to 1,5-2,0%, was also marked and in works of other authors (Botsford, 1983; Pavlova, 1993; Safronova, 1994).

The strains of nodule bacteria of mungbean alkalized the litmus milk and did not hydrolyzed casein, only some local strains showed weak action on curtailing of milk. It is necessary to note, that some local strains of nodule bacteria of mungbean, as well as quickly growing typical strains of mungbean CIAM2620, differed from others typical strains by intensity of growth on beef-extract broth, this growth was accompanied by formation of a film sigh or ring and formation of a deposit. To this sigh they differed from strains CIAM1901, which on beef-extract agar does not grow.

Table 1.

Cultural and morphological attributes of the investigated strains of nodule bacteria

№	Strain	Rate of growth (in days)	Size quantity (mm)	Morphology of colonies				Grow that on				
				Colour	transparency	profile	mucosity	28° C	37° C	1,00 % NaCl	1,50 % NaCl	2,00 % NaCl
1	CIAM 2620	2-3	2,0-3,0	White	+	Convex	+	+	+-	+	-	+
2	CIAM 1901	6-7	1,5-2,0	White	+	Convex	+	+	+	-	-	+
3	M2	2-3	2,5-3,0	Cream	+	Cone	-	+	+	+	+	+/-
4	M4	2-3	4,0-4,5	White	+	Not sph.	-	+	+	+	+	+/-
5	M6	2-3	3,5-4,0	Cream	+	Not sph.	-	+	+	+	+	+/-
6	M7	2-3	3,0-3,5	White	+	Sph.	-	+	+	+	+	+/-
7	M8	2-3	2,5-3,0	White	+	Cone	+/-	+	+	+	+	+/-
8	M11	2-3	2,0-3,5	White	+	Convex	+	+	+	+	+	+/-
9	M18	2-3	3,0-4,0	Cream	+	Not sph.	-	+	+	+	+	+/-
10	M20	2-3	1,5-3,5	White	+	Sph.	+	+	+	+	+	+/-
11	M22	2-3	2,0-3,0	White	+	Convex	+	+	+	+	+	+/-

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

12	M27	4-5	2,0-3,0	White	+	Sph.	-	+	+	+	+	+/-
13	M28	4-5	2,0-3,0	White	+	Cone	-	+	+	+	+	+/-
14	M103	5-6	1,5-2,0	White		Convex	+	+	+	+	+	-
15	M105	2-3	3,0-3,5	Cream	+	Sph.	+/-	+	+	+	+	-
16	M113	2-3	3,0-4,0	White	+	Convex	+/-	+	+	+	+	+
17	M114	2-3	3,0-4,0	Cream	+	Sph.	+	+	+	+	+	-
18	M117	6-7	1,0-1,2	White	+	Convex	+	+	+	+	+/-	-
19	M120	6-7	1,0-1,2	White	+	Convex	+	+	+	-	-	-
20	M121	6-7	1,2-1,5	White	+	Convex	+	+	+	-	-	-

The note: Mukousity: “-” – low; “+/-” – moderate; “+” - high. A profile of colonies: Sph. – spherical; Not sph. -not spherical; Cone -cone-shaped. Growth: “+” - presence of growth; “-” - absence of growth; “+/-” -growth weak.

The microorganisms are characterized by unequal ability to use various carbohydrates. For practical purposes, at identification of rhizobia, it is possible to be limited by two, three carbohydrates, and first of all by glucose and saccharose. The majority of the authors marks, that rhizobia acidify or alkalize the environments at growth on xylose, glucose etc. collection (Methodical instructions, 1985; Pavlova, 1993; Safronova, 1994). In our work wider collection set of carbohydrates was used. The ability of strains to utilize carbohydrates was different. On change of colour of bromothymol blue we judged about acidification or alkalization of environment. So, the reaction at the majority of local strains was similar with typical strains.

As the dehydrogenase activity is one of major biochemical parameters of efficiency of nodule bacteria, it is recommended for indication of activity of dehydrogenase of bacteria to enter into nutritious environment triphenyltetrazolium chloride (TTCI) in concentration of 0,01% or 0,005%. In this case the colonies of active cultures are coloured in red colour at the expense of TTCI restoration in triphenyl formazan. In our experiments all investigated strains on environment containing various concentration of TTCI, grew as red or dark - brown colonies with white deposit of slime.

It is known, that the microorganisms, developing on a surface of a potato slice, form of deposits, characteristic of for each kind. At growth of investigated strains on a potato jamb we observed formation of slime or rhizoid growth, characteristic of rhizobia.

In laboratory of biological nitrogen of Research Institute of Agricultural Microbiology the sensitivity of typical strain CCBAU 2609 R. huakuii (Chen et al., 1991) and typical strain NZP 2213 R. loti (Jarvis et al., 1982) to phage of nodule bacteria of lotus was investigated, lysined the strains R. loti and is shown, that phage of rhizobia are modispecific in lytic action. The similar opinion is stated also by other authors and, in particular, they mark, that phagotypification can be used as one

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

of the methods for identification of nodule bacteria and definition of their relationship with known kinds of rhizobia (Lindstrom et al., 1983; Novikova with co-author, 1987).

In this connection, with the help of three phage of *R. foti* (182, 183 186), one phage of *R. leguminosarum* (132), one phage of *R. meliloti* (136), received from a collection of the Research Institute of Agricultural Microbiology (Russia) and one phage of *R. galegae* (1/OW) from a collection of Dr. Lindstrom (Finland), was investigated sensitivity of local strains of nodule bacteria to phage of rhizobia of various kinds. The carried out researches have shown, that local strains were sensitive only to those bacteriophage, which concern to the appropriate kind of nodule bacteria.

Conclusions

Thus investigated local strains of nodule bacteria of mungbean on cultural and morphological properties are identical to the appropriate kinds of typical strains. However, to signs some important signs (for example, on growth rate, thermosensitivity, ability to coagulation at growth on litmus milk) some local strains of rhizobia of mungbean differed from typical strains. To have clear performance about taxonomic rule of strains, their further study by method of molecular hybridization of DNA-DNA now is required according to the modern taxonomic requirements, and the final identification up to a type should be carried out on the basis of application of the data about a structure of DNA.

References

- Dorosinsky L.M. Nodule bacteria and nitragin. -L: Kolos. 1970. 191p.
- Kelvin A/ Environment for revealing pathogenic strains // In book: Manual for study of bacterial diseases of plants. M.: Kolos. 1968. P.260-261.
- Kojemyakov A.P. Productivity of nitrogen fixation in agroecosis. // Mikrobiol. Kiev. 1997. V. 50. №4. P. 22-28.
- Methodical recommendations: Genetic methods of selection of nodule bacteria. Under lead. Simarova B.V. // L. RIAM. 1984. -37 p.
- Methodical instructions of identification of non-spore bacteria, dominant in rhizosphere of plants. Edited by Voznyakovsky Y.M., Popova J.P. // L. RIAM. 1985.-48 p.
- Mishustin E.N., Shilnikova V.K. Nodule bacteria and inoculation process. M.: Scienc. 1973. -288 p.
- Novikov N.I., Bajenova O.B., Simarov B.V. Phage sensibility of binds of *Rhizobium* and mutants of nodule bacteria of lucerne, differing from cultural and symbiotic properties. // Agricultural biology. 1987. N2. P.35-39.
- Pavkova E.A. Taxonomy and symbiotic properties of nodule bacteria of astragalus, crazyweed, hedysarum, licerice, coronilla and rest-harrow: Autoreferat of diss. science. St. Petersburg. 1993. -17 p. of cand. of biol.
- Safronova V.N. Complex characteristics and selection of nodule bacteria of astragal *Rhizobium galegae*.: Autoreferat of diss.... of cand. of biol, science. St. Petersburg. 1994. -18 p.
- Allen O.N. Experiments in soil bacteriology. 3-d edition. Minneapolis, Burgess Publ. Co, 1959, P. 52-59,
- Allen O.N. Allen E.K. The Leguminosae: a source book of characteristics, uses and nodulation. Univ. Wisconsin Press, Madison, Wisc., 1981,800 p.
- Botsford J.L. Effect of saline and alkaline conditions on growth of peanut (*Arachis hypogaea*) rhizobia. // Microbios Lett. 1983. V. 24. № 94. P. 75-80.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Chen W.X., Li G.S., Wang E.T., Yuan H.L., Li J.L. *Rhizobium huakuii* sp.nov. isolated from the root nodules of *Astragalus sinicus*. // *Int. J. Syst. Bacteriol.* 1991. V. 41. N 2. P. 275-280.

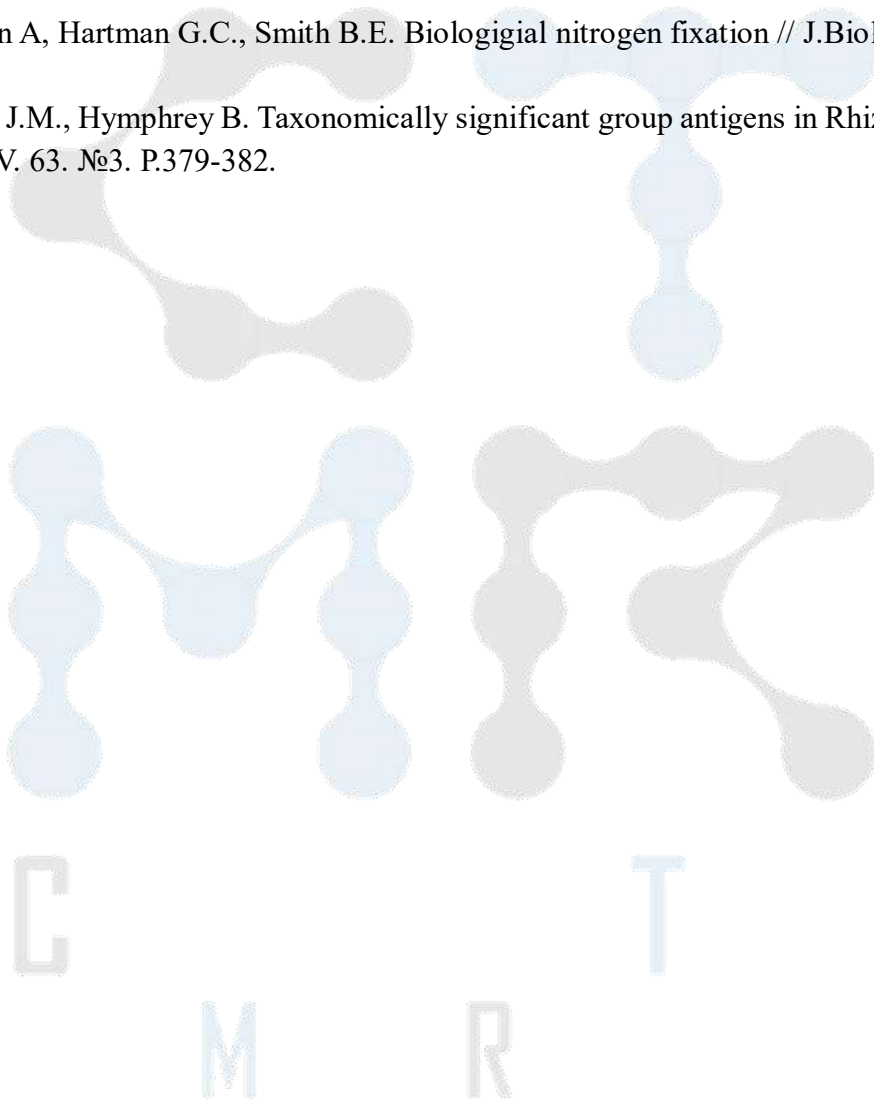
Heichel G.H. Stabilizing agricultural energy needs: role of forages, rotations and nitrogen fixation // *J. Soil and Water Conserv.* 1978. 33. №6. 279-282.

Jarvis B.D., Pankhurst C.E., Patel J.J. *Rhizobium loti*, a new species of legume root nodule bacteria. // *Int. J. Syst. Bacteriol.* 1982. V.32. №3. P. 378-380.

Lindstrom K., Jarvis B.D.W., Lindstrom P.R., Pater J.J. DNA homology, phage-typing, and cross-nodulation studies of rhizobia infecting *Galega* species. // *J. Gen. Microbiol.* 1983. V.29, №7. P.781-789.

Niseman A., Hartman G.C., Smith B.E. Biological nitrogen fixation // *J. Biol. Educ.* 1985.19. №1. P.24-30.

Vincent J.M., Hymphrey B. Taxonomically significant group antigens in *Rhizobium*. // *J. Gen. Microb.* 1970. V. 63. №3. P.379-382.



THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

RESEARCH INTO THE CHANGE IN TENSION OF WARP YARNS (GROUND AND LOOP) ON WEAVING MACHINES DURING THE PRODUCTION OF TERRY FABRICS

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Abstract: *This study explores the dynamic tension behavior of warp yarns (ground and loop) during terry fabric production on weaving machines. A new high-sensitivity device was developed to measure thread tension with digital precision. Experimental analysis focused on terry fabrics with different weaving rapports using ITEMA R-9500 weaving machines. Results revealed significant tension fluctuations, with unevenness rates of 16.35% for a rapport of 3 and 29.5% for a rapport of 4. The study highlights the relationship between shaft rotation oscillations and tension variations, providing valuable insights for optimizing thread selection and weaving processes.*

Keywords: *terry fabrics, warp yarn tension, weaving machines, thread unevenness, textile engineering.*

Introduction.

From the practice of the technological process of weaving, it is known that the threads used as warps must have a certain threading tension, the value of which depends on the range of manufactured products, types and designs of weaving machines. And its value fluctuates during the shedding process.

In turn, the threads used in weaving have numerous types with a wide range of physical and mechanical characteristics.

The choice of the optimal option for matching the quality indicators of threads with a specific range of woven products and types of weaving machines is of great importance in the technical and economic indicators of industry enterprises.

The authors chose the technological process of producing terry fabrics as the object of this study, which differs from other assortments by the presence of two types of bases (ground and loop) and weaving machines of a special design.

The formation diagram of terry fabrics is shown in Fig. 1.

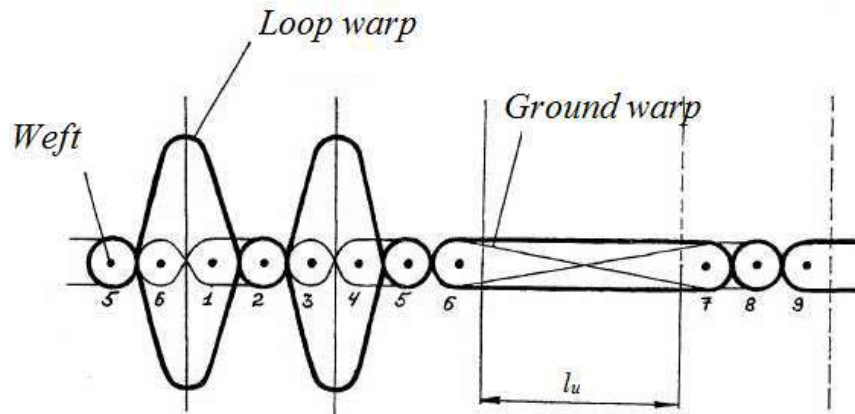


Fig. 1. The formation diagram of terry fabrics.

As can be seen from the diagram (Fig. 1), the insertion of the weft threads into the formed shed is inserted in groups of several threads (the number of threads depends on the selected rapport) and they must be nailed to the edge of the fabric cyclically, after a certain time depending on the distance (l_u) between the groups, called "undercut" and its value is set depending on the height of the loop of the terry fabrics.

A group of weft threads located at a distance (l_u) from the edge of the fabric, the simultaneous beating along the width of the fabric to the edge is carried out in two ways:

- a) A special device installed at the reed mechanism, allowing the swinging movement of the reed to be carried out with a normal and increased amplitude. (these are weaving machines - Zultser Ruti model C6100, models SX-910, 736, etc.)
- b) Special mechanisms implementing cyclic movements of the main warp along its length with an amplitude equal to (l_n) and an amplitude equal to the fabric working. (these are weaving machines of the firm "ITEMA" model R-9500, Silver DT, etc.)

The formation of a loop of terry fabrics occurs at the moment of beating a group of weft threads to the edge of the fabric, the so-called "hard" beating, and naturally, the warp threads, especially the ground thread, are under sharply changing and increased tension, due to the grip and mutual sliding of several weft threads on the ground thread, the amount of which depends on the fabric rapport. In practice and for research purposes, devices for measuring the tension of warps of various types and designs are used and their classification is given in the work [2].

Methods.

Based on the analysis of existing types of devices, the authors of this work developed and manufactured a prototype of a new device (Fig. 2).

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11



Fig. 2. Device for measuring the tension of warps.

The new device is highly sensitive, has 3 rotating thread guides, an electronic circuit aggregated with a personal computer providing information in digital form, and it can measure both a single and a group of threads in the operating mode of the machine.

To ensure the accuracy of the obtained thread tension values, the device readings were calibrated. For this purpose, a set of weights (class 4 according to GOST-7328) was used and the data obtained are given in Table 1.

Table 1.

A set of weights used and the obtained data

Standard weight, in gr.	Instrument readings in grams.			
	Max. values in gr.	Min. values in gr.	Average value of 10 measurements in grams.	Adjustment coefficient K
2,0	8,0	7,9	7,95	3,97
5,0	20,4	20,1	20,25	4,05
10,0	41,0	41,0	41,0	4,1
20,0	83,0	82,0	82,5	4,12
50,0	207,0	206,0	206,5	4,13
100,0	416,0	415,0	415,5	4,15
200,0	831,0	829,0	830,0	4,15
500,0	2082,0	2080,0	2081	4,16
Average value				4,1

From the data obtained in Table 1, it can be understood that this device is more sensitive, i.e. the coefficient of increase in digital data is 4.1 times higher than the actual value and this coefficient will be used when decoding the measurement results, i.e. the actual value of the thread tension is less than the data obtained in the computer.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

To test the performance of this device, we measured the tension of the ground warp when producing a terry towel with a weft rapport equal to three, on a R-9500 weaving machine from ITEMA (Italy) in the weaving production of NAM TOWELS LLC (Namangan).

The summary data on the measurement of the tension of the ground warp of terry fabric are given in Table 2.

Table 2.

The summary data on the measurement of the tension of the ground warp of terry fabric

No	Time of measurements (hour, minutes, sec)	Computer data of tensions in cN	Coefficient K	Actual tension value in cN
1	14.56.35,436	1031,98	4.1	251,6
2	14.56.35,668	913,63	4.1	222,8
3	14.56.35,893	932,17	4.1	227,3
4	14.56.36,081	1033,68	4.1	252
5	14.56.36,301	925,37	4.1	225,6
6	14.56.36,499	913,44	4.1	222,7
7	14.56.36,733	1047,14	4.1	255,3
8	14.56.36,926	919,18	4.1	224,1
9	14.56.37,165	927,0	4.1	226
10	14.56.37,348	1045,34	4.1	254,9
11	14.56.37,566	930,90	4.1	227
12	14.56.37,799	916,13	4.1	223,4
13	14.56.38,015	1053,21	4.1	256,8
14	14.56.38,199	917,64	4.1	223,8
15	14.56.38,433	935,80	4.1	228,2

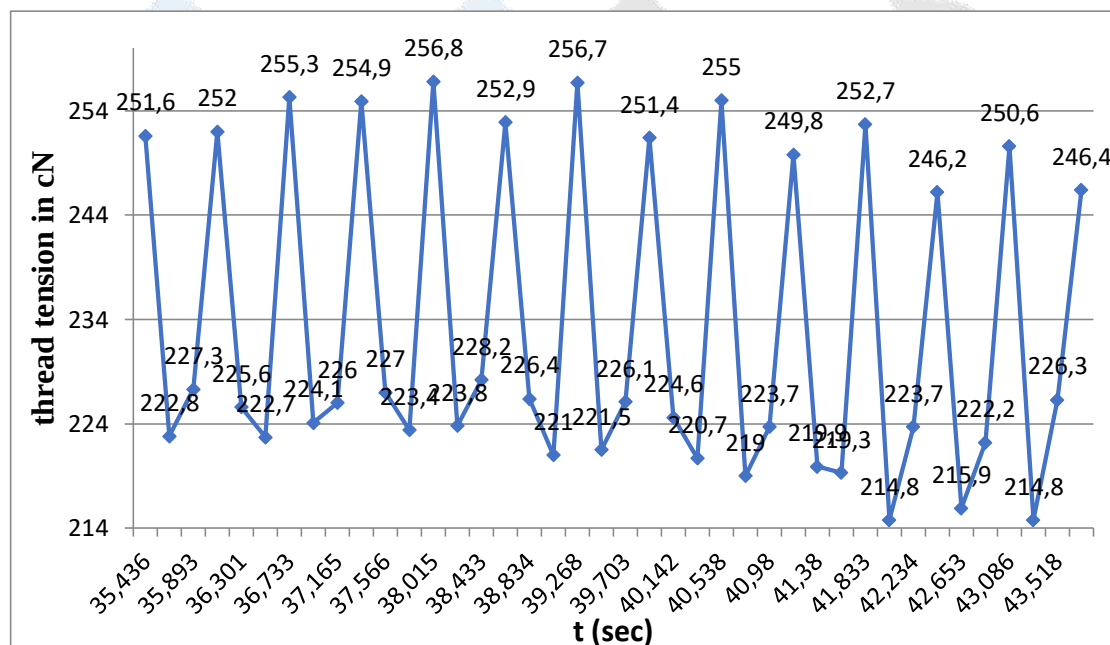


Fig. 3. The diagram of the tension of the ground warp of terry fabric.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Table 2 shows parts of the digital data measurements obtained in the computer with subsequent recalculation taking into account the coefficient K, and Fig. 3 shows a graph of the change in the tension of the root warp in cN based on the data from Table 2, in time with an accuracy of one-thousandth of a second.

Analysis of the obtained data shows that the maximum value of tension is achieved during the "hard" beating and it occurs after every third beating of the weft thread. It is evident from the graph that two indicators (N₃₈-214.8 cN, N₄₄-214.6 cN) have the lowest tension values, this means that the tension of the root threads during shedding when 2 weft threads are inserted forms the background of terry fabrics. (shown in Fig. 1 in the form of weaving)

From the obtained data it is evident that the percentage of fluctuations in the tension of the ground warp is:

$$F_{g.w} = \frac{F_{g.w}^{\max} - F_{g.w}^{\min}}{F_{g.w}^{\min}} * 100 = \frac{256,8 - 214,8}{214,8} * 100 = 19,35\% \quad (1)$$

In agreement with the management of the enterprise, the authors conducted an in-depth study of the tension of the threads of both the ground and loop warps on a new type of weave with a rapport on the weft 4 (Fig. 4), with the increased strength of loop fastening in the production of terry fabrics for sewing bath towels and robes.

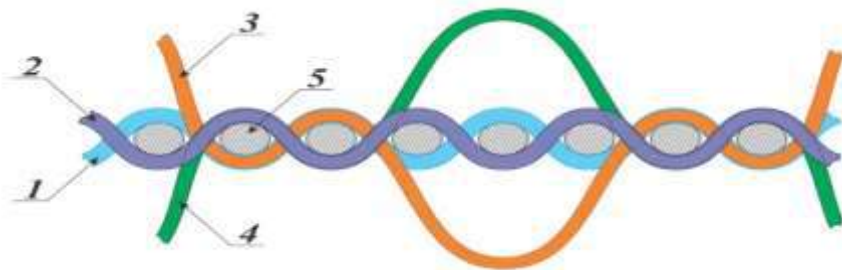


Fig. 4. Cross-section along the weft, according to the proposed new type of weaving of loop fabrics: where 1, 2 is the ground thread; 3 is the weft thread; 4, 5 are the loop threads.

Results and discussion.

The obtained results of measuring the ground warp tensions are given in Table 3.

Table 3

Results of measuring the ground warp tensions

№	Time of measurements taken (hour, minutes, sec)	Computer data tension in cN	Coefficient K	Actual tension value in cN	The surf time of one weft in sec. t	Number of revolutions of the main shaft of the machine in rpm
1	11.28.49,967	1113.54	4.1	271.59	0.204	295.5
2	11.28.50,170	1073.37	4.1	261.7	0.203	295.5
3	11.28.50,373	787.55	4.1	192.0	0.201	298.5
4	11.28.50,574	817.2	4.1	199.3	0.240	250.0
5	11,28,50,814	1090.17	4.1	265.8	0.205	292.6
6	11.28.51,019	1102.63	4.1	268.9	0.202	297.0
7	11.28.51,221	840.34	4.1	204.9	0.205	292.6

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

8	11.28.51,426	848.24	4.1	206.8	0.237	253.1
9	11.28.51,663	1057.88	4.1	258	0.203	295.5
10	11.28.51,866	1068.11	4.1	260.5	0.202	297.0
11	11.28.52,068	802.84	4.1	195.8	0.201	298.5
12	11.28.52,269	851.35	4.1	207.6	0.238	252.1
13	11.28.52,507	1019.7	4.1	248.7	0.204	294.1
14	11.28.52,711	1067.76	4.1	260.4	0.203	295.5
15	11.28.52,914	804.86	4.1	196.2	0.205	292.6

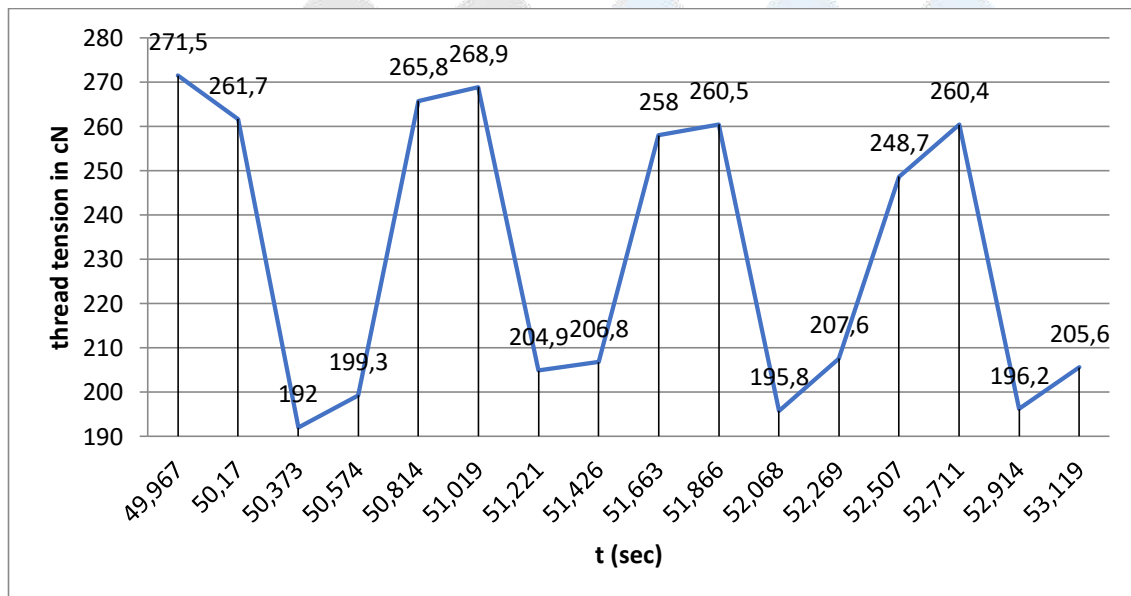


Fig. 5. The diagram of the results of measuring the ground warp tensions.

Based on the data from Table 3, Fig. 5 shows a graph of the change in the tension of the ground warp and its degree of oscillation is:

$$F_{g.w} = \frac{271,5 - 191,0}{271,5} * 100 = 29,5\% \quad (2)$$

Using the data from Table 3, we can determine the surf time of one weft.

For example: from 11 hours, 28 minutes, and 50.170 seconds, we subtract 11 hours, 28 minutes, and 49.967 seconds to get 0.203 seconds, i.e. the surf time of one weft.

The actual number of revolutions of the main shaft can be determined by the following formula:

$$R_{m.sh.} = \frac{60}{t} \text{ rpm} \quad (3)$$

Where t – surf time of one weft per second.

The digital data of changes in the values of the time of beating of one weft and the corresponding number of revolutions of the main shaft are given in Table 3 and its graphic representation is shown in Fig. 6. In this figure, the abscissa axis shows the time of beating of one weft in seconds and the ordinate axis shows the number of revolutions of the main shaft of the weaving machine in minutes calculated by formula (1).

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

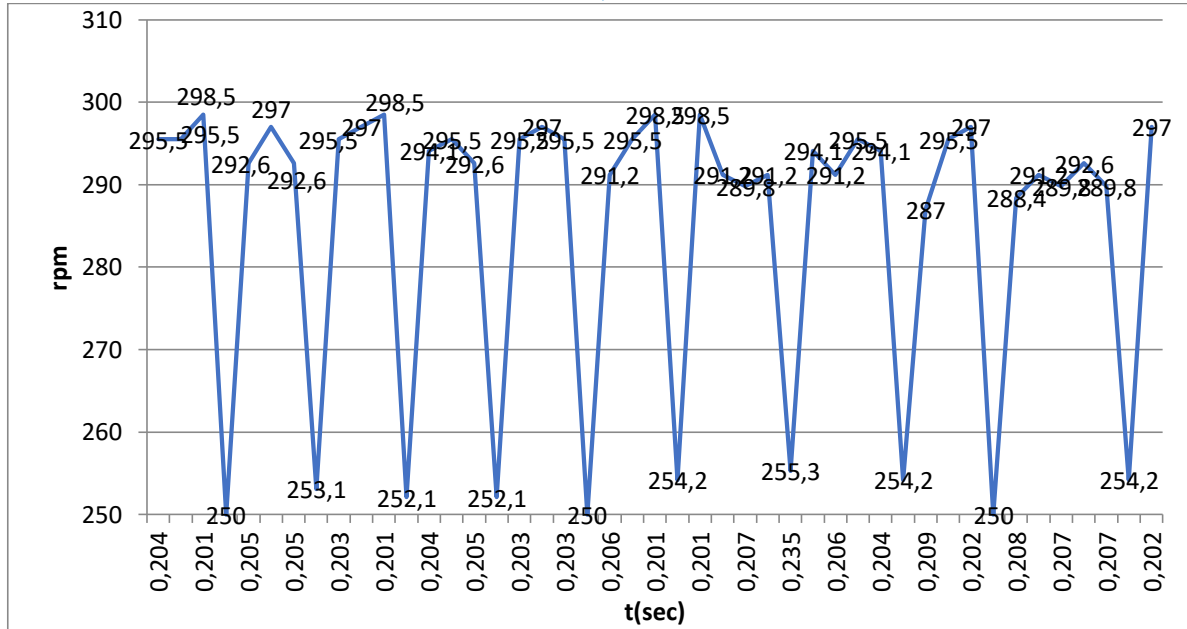


Fig. 6. The changes in the values of the time of beating of one weft and the corresponding number of revolutions of the main shaft.

The magnitude of the degree of unevenness of rotation of the main shaft of the machine, determined by the well-known formula, is equal to:

$$M = \frac{R_{max} + R_{min}}{R_{max}} * 100 = \frac{298,5 - 250,0}{295,5} = 16,2\% \quad (4)$$

Comparing the graphs in Fig. 5 and 6, it can be noted that the smallest number of revolutions of the main shaft corresponds to the largest value of tension of the ground warp with a rigid beat of the weft.

According to the above-described method, the tension of the loop warp was measured and its graphic representation is given in Fig. 7.

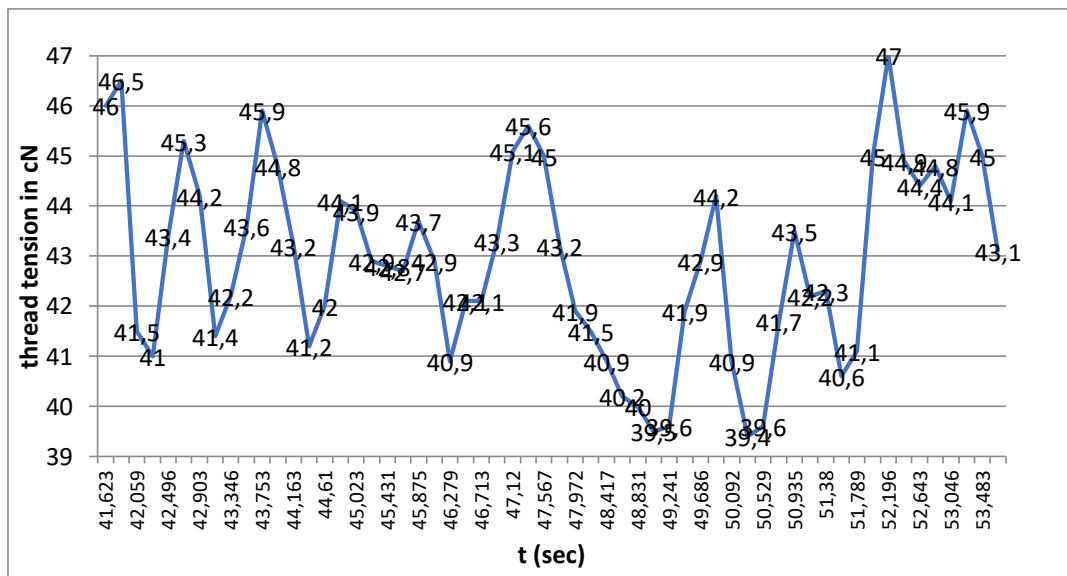


Fig. 7. The tension of the loop warp.

According to the obtained data, the degree of tension fluctuations is equal to:

$$F_{l.w} = \frac{47-39,4}{47} * 100 = 16,1\% \quad (5)$$

Conclusion.

1. The created device with high sensitivity for measuring the tension of threads during the process of fabric formation has demonstrated its efficiency in operating machines.
2. Data on the tension of the ground and loop warps were obtained during the production of terry fabrics of two different weaves.
3. The unevenness of tensions with a fabric rapport of 3 was 16.35%, and with a rapport of 4 it was 29.5%.
4. Based on the data obtained, it was possible to determine the actual rotation value of the main shaft of the R9500 model ("ITEMA") and its unevenness was within 16.2%.
5. The dependence of the oscillation rotation of the main shaft on the magnitude of the tension of the main base of terry fabrics was determined.
6. Obtaining data on the tension of terry fabric warps will allow specialists to select the optimal types of threads.

REFERENCES

1. V.A. Gordeev, P.V. Volkov. "Weaving". "Gizlegprom". Moscow. 1958.
2. A.M.Akramov, P.D.Lastochkin. "Determination of thread tension on a weaving machine". "CARJIS" Vol 2. 2022 year.
3. E.D. Efremov, O.A. Akhunbabaev. "Increase in tension due to surf". News of higher education institutions. "Technology of the textile industry". 1985. No. 5

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

THE ROLE OF INFORMATION TECHNOLOGY IN LEARNING FOREIGN LANGUAGES

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Abstract. The article is devoted to the use of information technologies in teaching foreign languages. In comparison with the traditional methods used in previous studies, it is described that learning using information technologies has a number of advantages, and their use in early childhood increased the features of thinking and perception of the younger generation who grew up in the environment of modern digital means.

Keywords. information technologies, computer programs, gadgets, internet, multimedia

Currently, knowledge of one of the foreign languages allows the younger generation to join the world culture of a modern person, communicate with friends, relatives and colleagues living in foreign countries, as well as study at higher educational institutions of foreign countries, participate in various competitions and grants, learn news from magazines published in foreign languages in their specialty.

We live in the age of information technology, when a modern teenager is a productive and active user of social networks, mobile applications, computer programs and gadgets.

If we talk about the educational sphere, a modern teacher uses computer technologies, of course, in order to create an opportunity to convey lessons from the subject he teaches in an interesting, easy and understandable way to the audience, to increase the professional competence of the teacher and to expand the range of subjects taught.

Computer technologies provide an opportunity for the development of society, in particular, for the younger generation to acquire modern knowledge, regularly receive information from world news, have additional information on the subject from the Internet, without relying solely on textbooks when completing assigned tasks. Currently, computer technologies penetrate into all spheres of human activity and form a global information space. Knowledge of languages and computer technologies is one of the important factors in the level of education of any modern specialist.

Nowadays, the rapid development of information technology leads to the emergence of new ways of using the Internet. All over the world, there is a dynamic and rapid construction of an information society, which creates the best conditions for personal growth of a person. The main reason for this process is the strong development of information technology.

In the 21st century, the educational process is increasingly developing the organization of training using information technology.

Professor E. S. Polat says about this: "New pedagogical technologies... firstly, it is unthinkable without the widespread use of new information technologies, computer technologies", since they "fully reveal the pedagogical, didactic functions of these methods, allowing them to realize their inherent potential"

As in all spheres of society, the use of information technology in the medical field, in particular, the use of multimedia technologies, is becoming an integral part of the professional activity of a teacher every day.

The use of information technology plays an important role in the process of teaching foreign languages, especially to students of medical universities. Today, the use of various multimedia

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

technologies makes the process of learning foreign languages interesting and accessible to the student, allowing him to adequately understand the subject being transmitted.

The use of computer technology helps to remove the psychological barrier of the student, which is the way of using a foreign language as a means of communication. One of the manifestations of this barrier is the fear of making a mistake. When students use a computer, they do not feel discomfort, they receive instructions on how to cope with the mistakes they make.

Systematic work with computer tasks forms students' sustainable skills for independent completion, which leads to a reduction in the time allotted by the teacher to complete assigned tasks and allows you to increase the time needed to complete creative work. But at the same time, the integration of students into the use of information technology in the educational process places great demands not only on the student, but also on the teacher.

Careful use of information technology by students of higher educational institutions creates a lot of conveniences for them in mastering specialized subjects, as well as foreign languages. In particular, the ability of students to use information technology, especially the Internet, allows them to receive additional information on the topic specified in their specialties, find solutions to problems, easily understand textbooks, journals and scientific articles published abroad. At the same time, independent learning will help them prepare presentations on topics.

One of the most important reserves for increasing the effectiveness of training at a university is the optimization of independent work of students. Therefore, in the context of computerization of education and due to the fact that academic hours for studying a foreign language in medical institutions are limited, students can fill in the gaps in their knowledge of a foreign language only via the Internet.

Students will be able to find solutions to the problems they encounter using the Internet, learn to move freely in the field of a foreign language, solve emerging problems, which in turn will create an opportunity to increase their creativity.

One of the most important factors is the teacher's preparation for classes, the distribution of materials by topic - cards, tables, tests; visual materials, information technology in the preparation of presentations. Preparing presentations and including them in the educational process is a new didactic tool. Presentations are aimed at developing students' interest in science, motivation, interactivity, increasing their creative potential.

Based on my personal activities, I can say that I use multimedia presentations that include great opportunities for developing the mental and creative abilities of students who teach, in each of my classes. When I explained the topic to students in a simple way, that is, on the board, I looked at the shock that their activity in the training would slow down, or rather, when I explained the topic in a prepared presentation, their interests, activity would increase several times. They will have the opportunity to demonstrate organizational skills, hidden talents. Develops interests in language, imagination, creative thinking and independence.

In conclusion, it can be said that the use of various means of information technology in foreign language lessons helps to increase students' interest in the subject and the effective formulation of all types of speech activity, as well as the formation of sustainable skills of independent work.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

References:

1. Kruchinina G. A. Information and communication technologies in the activities of a teacher / G. A. Kruchinina // [Electronic resource] / Access mode: <http://pravmis1.ru/>
2. New pedagogical and information technologies in the education system / edited by E. S. Polat. - M.: Academy, 2002. - 224 p. P. 14. Zimina M. V., Lyulyaeva N. A. Use of information and communication technologies in teaching foreign languages // Modern problems of science and education. - 2017 - No. 4.;
3. Allamurodov Yigitali Abduqodirovich. (2022). WAYS OF MATERIALS DEVELOPMENT FOR AGRARIAN STUDENTS. *European International Journal of Multidisciplinary Research and Management Studies*, 2(05), 195–199. <https://doi.org/10.55640/eijmrms-02-05-37>
4. Katayev Salaxiddin Valiquil o'g'li. (2023). INTERNATIONAL RECOGNITION OF YOUTH POLICY OF NEW UZBEKISTAN. *International Journal of Formal Education*, 2(6), 228–233. <http://journals.academiczone.net/index.php/ijfe/article/view/990>
5. Katayev Salaxiddin Valiquil o'g'li. [Creating Presentation Programms for Teachers](#). Gospodarka i Innowacje. 19, 17-20. 2022
6. Katayev Salaxiddin Valiquil o'g'li. (2023). THE ROLE OF A PROFESSIONAL FOREIGN LANGUAGE FOR WORKERS IN THE AGRICULTURAL SECTOR. *Miasto Przyszłości*, 36, 286–288.
7. Katayev S.V [The Role Of Foreign Languages In Agriculture](#). Science and innovation 1 (B7), 638-640. 2022
8. Valiquil o'g'li, Katayev Salaxiddin. "THE IMPORTANCE OF USING NEW PEDAGOGICAL TECHNOLOGIES IN ORGANIZING ENGLISH LESSONS." *МЕДИЦИНА, ПЕДАГОГІКА І ТЕХНОЛОГІЯ: ТЕОРІЯ І ПРАКТИКА* 1.2 (2023):
9. Valiquil o'g'li, K. S. (2023, October). ISSUES OF FORMING THE THINKING OF YOUTH IN THE PROCESS OF MODERNIZATION OF SOCIETY. In " *Conference on Universal Science Research 2023*" (Vol. 1, No. 10, pp. 32-35)
10. S. Katayev (2022). THE ROLE OF FOREIGN LANGUAGES IN AGRICULTURE. Science and innovation, 1 (B7), 638-640. doi: 10.5281/zenodo.7261506

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

NEW PEDAGOGICAL TECHNOLOGIES IN TEACHING FOREIGN LANGUAGES

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Abstract. This article describes the problem of finding new techniques and ways to increase motivation for learning foreign languages. One of these forms is new pedagogical technologies, the implementation of which contributes to effective language learning. The article defines the concepts of "Pedagogical Technology" and "Smart Education", which are capable of providing a high level of education corresponding to the tasks and opportunities of today's world, will allow young people to adapt to a rapidly changing, unstable environment, will ensure the transition from book content to active content using a single common repository of educational materials with an analytical search system; an example of working with the site "die deutsche Welle" is given.

Key words: new information technologies, pedagogical technology, independent work, language social networks.

In recent years, pedagogical education has undergone major changes that cover almost all aspects of the educational process. The issue of using modern pedagogical technologies in teaching foreign languages is increasingly being raised. New methods and forms of teaching appear, which, in turn, represent not only various technologies of means of exchange and transmission of information, with the help of which the educational process is carried out, but also one large system of teaching methods aimed at developing students' communicative knowledge and improving their speech skills. The main task of a foreign language is to teach practical mastery of a foreign language, to form basic knowledge, that is, the ability to carry out foreign and international communication with native speakers. The search for new pedagogical technologies is associated with a lack of motivation among students to study a foreign language. Very often, positive motivation is absent, since when studying a foreign language, students face some difficulties and do not learn the material due to their psychological characteristics. Experience shows that the use of various, modern, fresh sources and means provokes interest in students, increases their motivation to study.

Pedagogical technology is a set of techniques, an area of pedagogical knowledge that reflects the characteristics of the deep processes of pedagogical activity, the features of their interaction, the management of which ensures the necessary effectiveness of the educational process [1].

The use of modern pedagogical technologies in the process of teaching foreign languages allows for the reproduction of educational situations, helps to complement traditional teaching methods, promotes the formation of fundamental skills of foreign language communication from the awareness of the possibility of expressing thoughts in another language to the independent solution of communication problems, increases the desire and interest of students in learning, makes them look at the subjects being studied in a new way, thus revealing their creative and intellectual capabilities and talents.

At present, the concept of "SMART" is the main purpose of the development of educational systems. The main source of knowledge is electronic, educational Internet content, technological operations are providing feedback for teachers and students, and the exchange of knowledge between them.

Smart education is a concept that involves a comprehensive modernization of all educational processes, as well as the methods and technologies used in these processes [2]. SMART education is capable of providing a high level of education that meets the challenges and opportunities of today's world, will allow young people to adapt to a rapidly changing, unstable environment, and will ensure

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

the transition from book content to active content using a single common repository of educational materials with an analytical search system. The quality of educational materials in the repository should be constantly monitored through the introduction of various materials and work in a single bundle with educational process management systems.

Considering current, innovative technologies, it is necessary to dwell in more detail on the topic of using Internet resources in teaching a foreign language. The possibilities of using online resources are enormous.

With the help of web resources, you can accomplish the following tasks:

- include online materials in the lesson content;
- conduct independent searches for information by students as part of working on a project;
- organize and develop reading skills and abilities using online materials of any complexity;
- improve listening skills based on audio texts from the online resources network;
- expand vocabulary with vocabulary and abbreviations of a modern foreign language;
- study the culture of a particular language [3].

At the moment, there are a large number of websites dedicated to independent study of foreign languages. On such websites, you can find ready-made lessons from foreign language teachers, exercises, audio recordings, grammar explanations that are incomprehensible to the student.

For example, M. G. Alekseeva, a teacher of German at the I. Yakovlev Chelyabinsk State Pedagogical University, actively uses the website "die deutsche Welle" in her work with students. As a rule, this website is very useful for independent work. It is a free German course that is suitable for both beginners and advanced users. The website offers a large selection of audio texts and videos of varying difficulty levels. School teachers of German can also use this material in their lessons. The advantage of the website is that it is simple and easy to use, which is why it is one of the best platforms for learning the language. To interest the listener, it offers famous talk shows, music videos, funny videos with hidden meanings, news, fascinating dialogues, etc. Using the exercises that are also available on this website, you can test your knowledge of German grammar and vocabulary and identify your weaknesses.

I would like to give an example of working with audio texts from the website "die deutsche Welle", which we visit quite often to complete various tasks in German. The recording of many texts lasts only 2 minutes, which helps the listener not get tired during this time, their attention does not wander and their interest does not disappear. One of the topics is called "Viele Köche verderben den Brei". This is a German proverb, which is translated into Russian as "Too many cooks spoil the child". At the beginning of the recording, the author describes the meaning of the proverb in several sentences. For example, he says: "Everyone always tries to keep me happy. Denn wenn most people with unterschiedlichen meinungen und methoden zusammen etwas machen wollen, kann das zu Schwierigkeiten führen". At first, the work is carried out individually. Everyone listens independently. As experience shows, various difficulties arise during collective listening. After this, the author begins the story. While listening, students make notes. The recording can be listened to 2-3 times. During the first listening, it is necessary to pay attention to the speed of the speaker's speech, his intonation, and try to understand the general meaning of the text. During the second listening, write down: "Who? Where? When? What did he do?" If the text turned out to be difficult or the speaker's speech is very fast, it is recommended to listen three times. After this, the teacher asks questions like - "richtig oder falsch" to find out how well the students understood the text. Then work is done in pairs. Students must retell the text to their interlocutor, ask and answer questions about the content. Thus, the ability to work in pairs is formed, which contributes to the development of dialogical speech.

But this site also has long audio recordings from 11 to 19 minutes, which are best listened to outside of class time, for example, at home. Working outside of class time develops the skill of

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

independent work. For example, on the topic "Lernen an der Universität" the text lasts 9 minutes and the speaker's speech in this audio text is very fast. But the topic is very useful and has practical value for schoolchildren and students, because the speaker gives advice on studying: "How to prepare for exams?", "How to use an electronic library?", "Where to look for material?" etc.

Since students usually do this work at home, they can listen to the texts many times until they understand and extract the necessary information. Usually, everyone gets an individual task to check their understanding after listening. The tasks can be of the following type: prepare specific questions, correct and incorrect statements, print out a text with mistakes or a text with gaps, so the student must listen to the audio text carefully and write down every word so as not to miss the important ones. The advantage of working with "die deutsche Welle" is that the teacher can alternate audio texts from easy to difficult. For example, during the week they listen to easy and fairly short texts lasting 1-2 minutes, and before the weekend they give a recording of the average level so that the student has enough time to listen to the long material and write down the most important points in order to discuss them with the teacher in class after the weekend.

30 years ago, it was impossible to imagine that you could listen to a native speaker in real time, but today, thanks to new innovative technologies, we are given this opportunity, which makes learning a foreign language much easier and much more interesting.

Thus, at present it is impossible to imagine the educational process without the use of innovative pedagogical technologies. Such technologies are firmly established in the modern education system. Today, a foreign language teacher has a lot of opportunities that help to conduct their classes more interestingly and informatively. These opportunities contribute to more active students. Compared with the traditional teaching method, new implementations in training inevitably change the role of the teacher. Its task is to increase the independent work of students, support in the development of personality. Such training allows to increase motivation for learning, significantly increases interest in learning, and also gives good results in the formation of communication skills compared to the traditional method.

LITERATURE

1. Nazarova N. B., Mokhova O. L. New information technologies in teaching foreign languages // Modern problems of science and education. 2016. No. 3.
2. Application of SMART technologies in the educational process "Education without borders". MBOU "Secondary School No. 1". 2015. 20 p. [Electronic resource]. Access mode: <https://infourok.ru/primenenie-smarttehnologii-v-obrazovatelnom-processe-mobu-soshobrazovanie-bez-granic-540134.html>
3. X. Kuchkinov (2023). MODERN METHODS AND RECOMMENDATIONS IN TEACHING ENGLISH. Science and innovation, 2 (B2), 155-158. doi: 10.5281/zenodo.7630101
4. Kh. Kuchkinov (2022). MODERN METHODS OF STUDYING ENGLISH GRAMMAR. Science and innovation, 1 (B7), 561-564. doi: 10.5281/zenodo.7255635
5. Xudaybergan, K. (2023). METHODS OF LANGUAGE TEACHING TO AGRICULTURAL STUDENTS. *Ustozlar uchun*, 17(2), 136-139.
6. Valiqul o'g'li, Katayev Salaxiddin. "THE IMPORTANCE OF USING NEW PEDAGOGICAL TECHNOLOGIES IN ORGANIZING ENGLISH LESSONS." *МЕДИЦИНА, ПЕДАГОГИКА И ТЕХНОЛОГИЯ: ТЕОРИЯ И ПРАКТИКА* 1.2 (2023):

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

7. Valiquil o'g'li, K. S. (2023, October). ISSUES OF FORMING THE THINKING OF YOUTH IN THE PROCESS OF MODERNIZATION OF SOCIETY. In " *Conference on Universal Science Research 2023*" (Vol. 1, No. 10, pp. 32-35)

8. Katayev Salaxiddin Valiquil o'g'li. (2023). NEW INNOVATIVE TECHNOLOGIES IN TEACHING FOREIGN LANGUAGES. *Multidisciplinary Journal of Science and Technology*, 3(3), 30–36.

9. Katayev Salaxiddin Valiquil o'g'li IMPORTANCE OF IELTS AMONG YOUNG PEOPLE. (2024). *Multidisciplinary Journal of Science and Technology*, 4(4), 345=347.

10. Bobur Normamatovich Mengliyev. ***Problems of formation of pedagogical competence of physical education teachers.*** 4-25-2022.

11. Bobur Normamatovich Mengliyev. Trener-o'qituvchilar pedagogik kompetentligi va mahoratini shakllanishiga ta'sir etuvchi omillarning nazariy asoslari. June, 2023 y

12. Allamurodov Yigitali Abduqodirovich. (2022). WAYS OF MATERIALS DEVELOPMENT FOR AGRARIAN STUDENTS. *European International Journal of Multidisciplinary Research and Management Studies*, 2(05), 195–199.
<https://doi.org/10.55640/eijmrms-02-05-37>



THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

ADVANTAGES OF SPORT IN EDUCATION

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Abstract: this article discusses the features of the development of sports education and their impact on education. A cross and comparative analysis of the influence of the choice of the direction of development of the study of sports disciplines was carried out. Recommendations on the introduction of technologies in education are given.

Keywords: analysis, method, research, sport.

Sports training and academic education are interrelated. Both are two sides of the same coin. Sports in education is an integral part of the curriculum. It helps to shape a person's personality and contributes to his/her holistic development. In a way, this subject is a demonstration of all the disciplines that a person has studied at school. Each sport is based on mathematics and physics.

While many subjects are taught in the classroom, sports and physical education provide students with the opportunity to exercise outdoors and learn a wide range of skills. Sports have many educational benefits, and not just physical ones. This blog will look at how athletics can positively impact students' academic success as well as their health and lifestyle.

It is worth noting the benefits of playing sports for the younger generation:

Improved health. Outdoor sports are great for kids and can help with your physical fitness. Regular exercise can help strengthen your heart, bones, and lungs. It also helps prevent chronic diseases. Sports can help treat diabetes, lose weight, improve circulation, and reduce stress. Combining mental and physical development allows you to strengthen and tone your bones and muscles through sports.

Through sports, students learn the importance of living a healthy lifestyle. Sports can help prevent obesity and promote healthy eating. Sports encourage young people to eat more vegetables and fruits. They are less likely than their peers to be obese and more likely to grow up to be active adults.

Prevention of both communicable and non-communicable diseases is possible through physical activity and sports. Thus, sports are a cost-effective strategy for improving the health of the population as a whole in both developed and developing countries. Prevention of both communicable and non-communicable diseases is possible through physical activity and sports. Thus, sports are a cost-effective strategy for improving the health of the population as a whole in both developed and developing countries.

Confidence Booster: Sports are not just about winning. Rather, they are about achieving goals and working as a team. Friendly competition is what most sports strive for. Physical education teachers should use the natural competitiveness and joy of sports to help students have fun and learn to play calmly and gain confidence.

Encouraging words from a coach or a winning goal from his team can boost a child's confidence. As a character trait, children should have high self-esteem. Sports can instill a spirit of perseverance and carry it over into an academic career.

Leadership Skills: Every team needs a leader, whether they are playing with a national team or a small group of friends. Students are given the opportunity to become leaders as they grow up. This helps them become confident and able to make decisive and well-balanced decisions. These skills can

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

be improved through sports, which require that decisions be made and frequently communicated to other team members for the common good.

When hiring new employees, companies look for people who can work in a team. As they advance in their careers, their leadership experience will be more important.

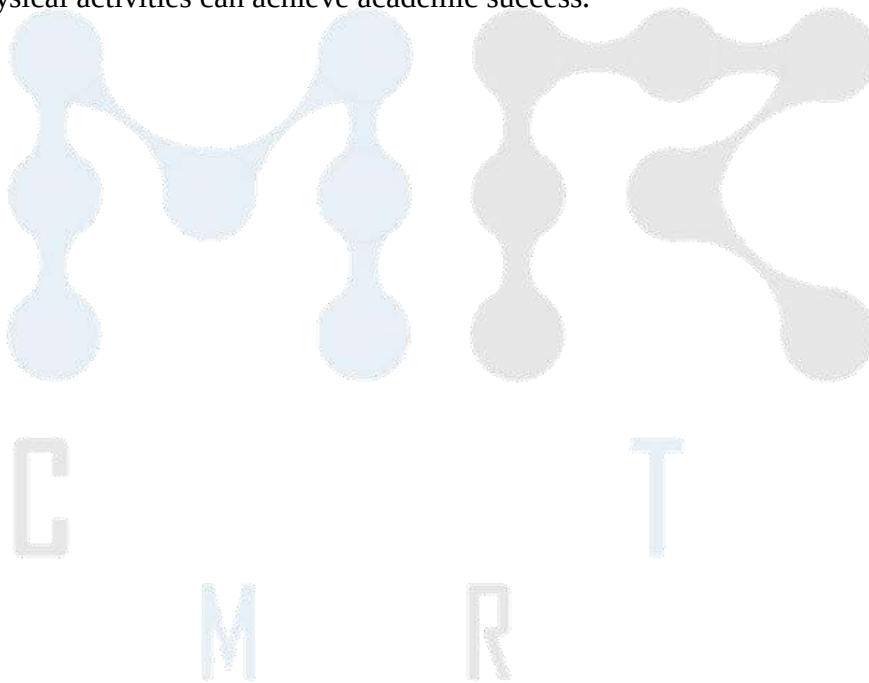
Teamwork. Effective teams are made up of people who can work well together. Physical education is often children's first introduction to teamwork.

Many teams believe that the whole team is more important than each individual. Your child will be able to participate in teamwork and see for themselves the importance of success.

Discipline. The underrated aspect of sport is the failure aspect. You have to be disciplined and persistent to succeed in life. Track and field is one way to do this. The fundamental nature of sport, with clearly defined losers and winners, leads to natural highs. This is something that young athletes must be prepared for later in life.

Sports are a great way to show that hard work pays off. To succeed in any endeavor, you will need persistence and an uncompromising attitude. Through sports, your child will see the importance of persistence in achieving their goals.

Academic success. Sports activities teach discipline that can be useful in all areas of life. Through sports, students learn tactical, mental, and physical preparation. Students can focus better and have a clearer vision. These qualities are necessary for academic success. Students who participate in sports and physical activities can achieve academic success.



THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

LIST OF REFERENCES:

1. Begidova T. P. Theory and organization of adaptive physical education. M.: Yurait, 2019. 192 p.
2. Bishaeva A. A., Malkov A. A. Physical education. Textbook. M.: KnoRus, 2020. 312 p.
3. Bobur Normamatovich Mengliyev. *Problems of formation of pedagogical competence of physical education teachers*. 4-25-2022.
4. Bobur Normamatovich Mengliyev. Trener-o'qituvchilar pedagogik kompetentligi va mahoratini shakllanishiga ta'sir etuvchi omillarning nazariy asoslari. June, 2023 y
5. Katayev Salaxiddin Valiquil o'g'li IMPORTANCE OF IELTS AMONG YOUNG PEOPLE. (2024). *Multidisciplinary Journal of Science and Technology*, 4(4), 345=347.
<https://mjstjournal.com/index.php/mjst/article/view/1290>
6. Katayev Salaxiddin Valiquil o'g'li. (2023). THE ROLE OF A PROFESSIONAL FOREIGN LANGUAGE FOR WORKERS IN THE AGRICULTURAL SECTOR. *Miasto Przyszłości*, 36, 286–288. <http://miastoprzyszlosci.com.pl/index.php/mp/article/view/1525>
7. Katayev Salaxiddin Valiquil o'g'li. (2023). NEW INNOVATIVE TECHNOLOGIES IN TEACHING FOREIGN LANGUAGES. *Multidisciplinary Journal of Science and Technology*, 3(3), 30–36. <https://mjstjournal.com/index.php/mjst/article/view/147>
8. Valiquil o'g'li, Katayev Salaxiddin. "THE IMPORTANCE OF USING NEW PEDAGOGICAL TECHNOLOGIES IN ORGANIZING ENGLISH LESSONS." *МЕДИЦИНА, ПЕДАГОГИКА И ТЕХНОЛОГИЯ: ТЕОРИЯ И ПРАКТИКА* 1.2 (2023): 11-16.
<https://universalpublishings.com/~niverta1/index.php/mpttp/article/view/2189>
9. X. Kuchkinov (2023). MODERN METHODS AND RECOMMENDATIONS IN TEACHING ENGLISH. *Science and innovation*, 2 (B2), 155-158. doi: 10.5281/zenodo.7630101
10. Kh. Kuchkinov (2022). MODERN METHODS OF STUDYING ENGLISH GRAMMAR. *Science and innovation*, 1 (B7), 561-564.
doi: 10.5281/zenodo.7255635
11. Xudaybergan, K. (2023). METHODS OF LANGUAGE TEACHING TO AGRICULTURAL STUDENTS. *Ustozlar uchun*, 17(2), 136-139.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

ROLE OF FOREIGN LANGUAGES IN THE STUDY OF COMPUTER TECHNOLOGY AND SOFTWARE

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Abstract. In order to be competitive in the labor market, it is necessary to become a good programmer, skillfully wielding programming languages, able to think unusually, to be abstract. The article describes the role of foreign languages in the enrichment of knowledge in the specialty. Such opportunities provide international grants, international conferences. We came to the conclusion that the programmers who own the best foreign language “developed by the reaction of communicating with the operating system and programs in the process of interactive dialogue, they will solve the problem of debugging and editing software, to quickly find mistakes and learn not yet translated documentation, it is easier to read the code”.

Keywords: IT-specialist, foreign languages, programming, programmer, code, international grants

The colossal and qualitative changes taking place in our modern life, in particular computerization, dictate the need to become familiar with them, otherwise society will regress. It is no secret that any software makes our lives easier, and only a good programmer who is proficient in programming languages can create such a product. Whether it is a tester, developer, system administrator or other representative of the IT sphere, you need to deal with special symbols, work in artificial language systems. Moreover, the IT sphere is one of those spheres that requires constant work and filling gaps in knowledge, as new requirements, updates of some programs, operating systems appear, which give better results. Moreover, a representative of this specialization must constantly keep in mind the syntax of the programming language, algorithms, various rules. We believe that a high-class programmer should be able to think outside the box, abstract, study and be fluent in English. Creativity is also not the last indicator of quality.

According to E.A. Klimov, for a representative of the profession “Man – Sign System” such qualities as accuracy, emotional stability, perseverance, systematicity, the ability to follow numerous rules, to work with concentration in conditions of external interference, to control the course and correctness of mental actions are important [1].

Thus, it is worth noting that the main working environment of the "Human - Sign System" people is the environment of processing information presented in the form of signs. That is, such a person can work not only with a programming language, but also with natural languages (English, German, Russian), and he actively works with them. Hence the need to study foreign languages for programmers.

Let's consider the specifics of IT specialties.

Let's imagine any software. How is it implemented? Initially, the project is briefly described, what the user wants to see in it, then comes the step-by-step pseudocode. Usually, the pseudocode consists of standard words, through which the developer would understand what and how to do step by step in the program. But, the next stage, the programming stage, consists entirely of working with artificial languages, programming languages, the syntax of which is made up of words in English.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Furthermore, when creating programs, a large number of conventional designations are used: for naming variables, classes, functions, when setting any conditions or cycles [4]. The keywords of any programming language are English. A programmer, knowing English, can, by logic or having forgotten part of the code, relying on knowledge of a foreign language, write down the forgotten fragment. For example, when working with a programming language, it is necessary to set the variable type (integer, float, boolean, etc., which in translation from English respectively mean integer, floating and logical). Or, let's say, when an unfamiliar fragment of code is given

```
prozessor P = new prozessor();
P[0] = new prozessor("Aser", 4, 3.5);
P[1] = new prozessor("Lenovo", 6, 2.5);
P[2] = new prozessor("Fujizu", 4, 2.1);
for (int i = 0; i < 3; i++)
```

The code contains keywords: new, for, int. If the programmer speaks English, but is still a beginner in his field, he can easily understand that new (new) is the creation of a class instance, for (for) is a cycle, int (integer- integer) variable type.

When a programmer reads foreign documentation, the IT specialist must be able to extract useful information from the text, find keywords, and mentally summarize it. Unfortunately, there are few domestic worthwhile IT products, and in order to keep up with the times, the IT specialist must constantly work with foreign software or IT devices.

After interviewing students majoring in Computer Science and Engineering, as well as programmers with whom we managed to communicate during our internship, about whether they encounter the problem of having to turn to English-language forums in search of an answer when coding or to Internet sources in other technical areas, for example, electrical engineering, they answered that they definitely do. In such cases, Google Translate is popular for translations, but, unfortunately, this translator does not give completely correct results. This suggests that future IT specialists do not have a sufficient level of knowledge of English to work with such Internet sources.

It will also be difficult for a programmer to add some "zest" to his computer application or to distinguish himself in some way if he does not know English. Let's say you need to go to an interview or talk about yourself at an event. It would be appropriate to prepare an excellent presentation for this event, but instead of Power Point in this case, you can use Prezi.com, with which you can create original dynamic and colorful presentations. But the site itself is in English.

To become competitive in the labor market, you should enrich your knowledge in your specialty at foreign universities. Studying foreign languages provides all the opportunities for this. For example, the website of the German Academic Exchange Service DAAD presents a wide variety of scholarship programs for second- and third-year bachelors, or study in a master's program at any university in Germany, educational practice at German universities and at enterprises with the support of IAESTE (International Association for the Exchange of Technical Experience). Scholarship programs are also offered by the Austrian Academic Exchange Service OAAD, various funds of European countries, the USA, and also countries of the East. You can become a participant in the "Exchange Student" program if there are partnership agreements between universities and the "Erasmus" program, which is a European exchange program. The above list includes the international university for future IT specialists "Innopolis", where classes are conducted only in English. Therefore, one of the authors of the article, student Kalimullina Rezeda, began to deepen her knowledge of English from her first year, as well as study German. At the moment, her goal is to study, see and compare work with computer

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

technologies in Russia and abroad. And she succeeded in this, having won a DAAD grant under the "Summer University Courses in Germany" program, thanks to which she underwent language training at the Berlin Technical University. At the university, she got acquainted with the computer science department, where the teachers also gave a lot of information about 3D laboratories, products obtained in these laboratories, as well as the necessary software (AutoCad and some other graphic software). This excursion was interesting in the sense that in our Russian universities 3D technologies are not yet so developed, only in words, even, one can say, completely new. During excursions to many Berlin industrial enterprises, in order to get acquainted with the equipment and the course of work, she saw that Siemens controllers are used in production, which are very popular not only in Germany, but also in other countries of the world. As it became known, these controllers were installed in the companies BMW and BESSY (from German "Berlin Society of the Electronic Storage Ring for Synchronous Radiation"), the operation and functionality of which are also based on programming languages. At the Berlin Technical Museum, she received information about the first and subsequent Z generation computers and their evolution, about the first information carriers, documentation on Boolean algebra, about data on encryption and decryption of information, received knowledge about the Enigma cipher, etc., and all the information was in German. This confirms the need for in-depth study of a second foreign language. In most cases, the choice falls on German, since almost every engineer is familiar with the success of one or another German company or firm (in mechanical engineering, well-known firms are BMW, Volkswagen, Opel, Mercedes, Audi, Porsche), and branches of some German firms are also opening in Russia (for example, ZF Friedrichshafen AG, one of the leading concerns-suppliers of the global automobile industry in Germany, in 1999 founded ZF Transmission LLC - a 100% subsidiary of ZF Friedrichshafen AG for service and sales, later renamed to ZF Russia LLC, in Moscow and St. Petersburg. In 2005, ZF and KAMAZ created a joint venture ZF KAMA (ZF 51% and KAMAZ 49%) in Naberezhnye Chelny).

Knowledge of foreign languages also opens the door to participation in various international conferences, which, in turn, are a huge step in the field of science. Studying in the above-mentioned programs in an international environment gives the opportunity to meet students of similar specialties and exchange experience in the field of IT, which is necessary in the era of computerization. Obtaining a diploma that meets international standards guarantees a well-paid and prestigious job, since programmers who have a better command of a foreign language "have a developed reaction to communicating with the operating system and programs in the process of interactive dialogue, they solve problems of debugging and editing software products faster, find errors faster and master documentation that has not yet been translated, it is easier for them to read code." This means that such programmers have a higher probability of completing the assigned task on time, saving time and effort, since they do not have to dig into dictionaries or reference books. The choice of names for variables, classes and functions, tables and database fields play an important role in the successful development of a project, since the productivity of programmers directly depends on the ease of reading the code.

Thus, knowledge of foreign languages is "one of the components of the professional competence of a programmer"

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

References:

1. Bakanova M.V. On the need to study English by students - future programmers // News of the Perm State Pedagogical University named after V.G. Belinsky. -2011. - No. 24. P. 540-543.
2. Klimov E.A. Psychology of professional self-determination. - M: Academy, 2004. P. 160-168
3. Katayev Salaxiddin Valiquil o'g'li. (2023). INTERNATIONAL RECOGNITION OF YOUTH POLICY OF NEW UZBEKISTAN. *International Journal of Formal Education*, 2(6), 228–233. <http://journals.academiczone.net/index.php/ijfe/article/view/990>
4. Katayev Salaxiddin Valiquil o'g'li. Creating Presentation Programms for Teachers. Gospodarka i Innowacje. 19, 17-20. 2022
5. Katayev Salaxiddin Valiquil o'g'li. (2023). THE ROLE OF A PROFESSIONAL FOREIGN LANGUAGE FOR WORKERS IN THE AGRICULTURAL SECTOR. *Miasto Przyszłości*, 36, 286–288.
6. Katayev S.V The Role Of Foreign Languages In Agriculture. Science and innovation 1 (B7), 638-640. 2022
7. Valiquil o'g'li, Katayev Salaxiddin. "THE IMPORTANCE OF USING NEW PEDAGOGICAL TECHNOLOGIES IN ORGANIZING ENGLISH LESSONS." *МЕДИЦИНА, ПЕДАГОГИКА И ТЕХНОЛОГИЯ: ТЕОРИЯ И ПРАКТИКА* 1.2 (2023):
8. Valiquil o'g'li, K. S. (2023, October). ISSUES OF FORMING THE THINKING OF YOUTH IN THE PROCESS OF MODERNIZATION OF SOCIETY. In " *Conference on Universal Science Research 2023*" (Vol. 1, No. 10, pp. 32-35)
9. Katayev Salaxiddin Valiquil o'g'li. (2023). NEW INNOVATIVE TECHNOLOGIES IN TEACHING FOREIGN LANGUAGES. *Multidisciplinary Journal of Science and Technology*, 3(3), 30–36.
10. Katayev Salaxiddin Valiquil o'g'li IMPORTANCE OF IELTS AMONG YOUNG PEOPLE. (2024). *Multidisciplinary Journal of Science and Technology*, 4(4), 345=347.
11. Bobur Normamatovich Mengliyev .*Problems of formation of pedagogical competence of physical education teachers*. 4-25-2022.
12. Bobur Normamatovich Mengliyev. Trener-o'qituvchilar pedagogik kompetentligi va mahoratini shakllanishiga ta'sir etuvchi omillarning nazariy asoslari. June, 2023 y
13. Kh. Kuchkinov (2022). MODERN METHODS OF STUDYING ENGLISH GRAMMAR. Science and innovation, 1 (B7), 561-564.
doi: 10.5281/zenodo.7255635
14. S. Katayev (2022). THE ROLE OF FOREIGN LANGUAGES IN AGRICULTURE. Science and innovation, 1 (B7), 638-640. doi: 10.5281/zenodo.7261506

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

GENERAL RULES OF CRIMINAL TACTICS. PLANNING AND ORGANIZING THE INVESTIGATION

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Abstract

This article explores the general rules of criminalistic tactics, focusing on the planning and organization of criminal investigations. It addresses the importance of systematic approaches, effective decision-making, and the coordination of investigative activities. The article also delves into the key principles guiding criminalistic tactics and how they are implemented to optimize the investigation process. Through an analysis of relevant literature and established methodologies, the article outlines the best practices for organizing and planning investigations.

Keywords. Criminalistic tactics, investigation planning, investigation organization, crime scene management, criminal investigations, forensic science, legal procedures.

Аннотация

В этой статье рассматриваются общие правила криминалистической тактики, с упором на планирование и организацию уголовных расследований. В ней рассматривается важность системных подходов, эффективного принятия решений и координации следственной деятельности. В статье также рассматриваются ключевые принципы, лежащие в основе криминалистической тактики, и то, как они применяются для оптимизации процесса расследования. С помощью анализа соответствующей литературы и устоявшихся методологий в статье излагаются наилучшие практики организации и планирования расследований.

Ключевые слова. Криминалистическая тактика, планирование расследования, организация расследования, управление местом преступления, уголовные расследования, криминалистика, юридические процедуры.

INTRODUCTION

Criminal investigations are complex processes that require meticulous planning, strategic decision-making, and proper organization to ensure success. Criminalistic tactics refer to the set of scientifically developed methods used to detect, investigate, and solve crimes. These tactics form the foundation of how investigators approach cases, gather evidence, and analyze information. The planning and organization of investigations are critical components that determine the efficiency and effectiveness of the investigative process. This article examines the general rules of criminalistic tactics and the principles behind organizing and planning successful investigations.

LITERATURE ANALYSIS AND METHODOLOGY

The principles of criminalistic tactics have evolved alongside advancements in forensic science, policing, and legal frameworks. Early works, such as those by Hans Gross in the 19th century, laid the foundation for scientific methods in crime-solving. Gross emphasized the importance of systematic approaches, detailed observations, and precise documentation.

More recent literature focuses on integrating technology into investigative practices. Books such as **“Criminal Investigation”** by Swanson et al. highlight the application of forensic tools, including DNA analysis and digital forensics, in modern investigative tactics. Scholars like Innes (2003) have explored the role of investigative mindset and critical thinking in criminal investigations, reinforcing the need for well-planned, flexible strategies.

Additionally, studies on criminal investigation planning (Osterburg & Ward, 2010) stress the importance of preparation, resource allocation, and effective communication among law enforcement

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

teams. These works contribute to the development of an organized, structured framework for conducting criminal investigations.

The methodology used to plan and organize investigations involves several steps:

1. **Preliminary Planning:**
 - **Assessment of the Crime Scene:** A thorough evaluation of the crime scene to determine potential evidence and the scope of the investigation.
 - **Resource Allocation:** Determining which investigative personnel, forensic experts, and equipment are needed.
 - **Setting Objectives:** Establishing clear goals based on the nature of the crime (e.g., collecting forensic evidence, identifying suspects, or interviewing witnesses).
2. **Formulation of a Strategy:**
 - **Prioritization of Actions:** Determining the sequence of investigative steps (e.g., evidence collection before suspect interrogation).
 - **Evidence Collection and Preservation:** Applying proper forensic methods to secure physical, digital, and biological evidence.
 - **Coordination with Other Agencies:** Integrating resources from other agencies (e.g., forensic laboratories, intelligence units).
3. **Implementation of Tactics:**
 - **Interrogation Techniques:** Using proper questioning methods to obtain information from suspects and witnesses.
 - **Surveillance and Undercover Operations:** Applying surveillance methods or undercover operations to gather intelligence.
 - **Crime Scene Reconstruction:** Using forensic data and witness testimony to recreate the events leading to and following the crime.
4. **Monitoring and Adjusting the Investigation:**
 - **Progress Review:** Regularly assessing the investigation's progress to adjust strategies as new information becomes available.
 - **Documentation:** Maintaining comprehensive records of the investigation, including all evidence, interviews, and strategic decisions.
5. **Post-Investigation Review:**
 - **Case Evaluation:** Reviewing the entire investigation to identify strengths and weaknesses.
 - **Reporting:** Compiling the investigation's findings into a formal report that can be used for prosecution.

RESULTS

The analysis of criminalistic tactics, planning, and organization demonstrates the importance of structured, methodical approaches to solving crimes. Key findings include:

1. **Effective Use of Tactics:** The success of any investigation depends on applying the right criminalistic tactics at the appropriate stages. Proper use of interrogation techniques, surveillance, and forensic tools helps uncover critical information that can lead to case resolution.
2. **Thorough Planning:** Detailed preliminary planning is crucial in ensuring that investigators focus their efforts on the most relevant aspects of the case. Without proper planning, resources may be misallocated, and investigative efforts could be delayed or misguided.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

3. **Organization and Coordination:** Investigations involving multiple agencies or units must be well-organized to prevent miscommunication and duplication of effort. Effective coordination allows different groups (forensic experts, law enforcement officers, legal teams) to collaborate efficiently, speeding up the process of gathering and analyzing evidence.

4. **Flexibility and Adaptation:** Investigative strategies must be flexible to accommodate new information or changing circumstances. Rigid adherence to an initial plan can hinder the investigation if unexpected challenges arise.

Category	Description
Criminalistic Tactics	- Interrogation: Techniques for questioning suspects and witnesses. - Surveillance: Observing suspects or crime scenes covertly. - Forensic Analysis: Applying scientific methods to examine evidence.
Investigation Planning	- Preliminary Planning: Assessment of the crime scene, resource allocation, and objective setting. - Strategy Formulation: Prioritizing actions and evidence collection methods.
Investigation Organization	- Coordination: Effective collaboration between law enforcement, forensic experts, and legal teams. - Resource Management: Allocation of personnel, technology, and equipment.
Methodological Steps	- Crime Scene Evaluation: Thorough examination of the crime scene. - Evidence Collection: Securing and preserving all forms of evidence. - Documentation: Maintaining detailed records of investigative activities.
Challenges	- Unexpected Changes: Adjusting strategies to account for new information. - Miscommunication: Potential gaps in coordination between agencies.
Best Practices	- Structured Planning: Developing a clear roadmap for the investigation. - Flexible Strategies: Adapting to evolving scenarios. - Accurate Documentation: Recording all findings and decisions methodically.
Technological Integration	- Forensic Tools: DNA analysis, fingerprinting, digital forensics. - AI in Surveillance: Using facial recognition and advanced algorithms for tracking suspects.
Outcomes	- Efficient Case Resolution: Well-organized investigations lead to faster resolution. - Improved Accuracy: Proper use of tactics and planning increases the chances of uncovering critical evidence.

CONCLUSION

Criminalistic tactics, planning, and organization are fundamental to successful criminal investigations. These processes require a combination of scientific methods, strategic thinking, and effective coordination. By following general rules of criminalistic tactics, investigators can enhance their ability to solve cases efficiently. The integration of forensic tools, critical thinking, and proper

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

resource management ensures that investigations are conducted systematically and effectively, leading to the successful prosecution of offenders.

REFERENCES

1. Gross, H. (1893). *Criminal Investigation: A Practical Textbook for Magistrates, Police Officers, and Lawyers*. Stanford University Press.
2. Swanson, C. R., Chamelin, N. C., Territo, L., & Taylor, R. W. (2016). *Criminal Investigation*. McGraw-Hill Education.
3. Innes, M. (2003). *Investigating Murder: Detective Work and the Police Response to Criminal Homicide*. Oxford University Press.
4. Osterburg, J. W., & Ward, R. H. (2010). *Criminal Investigation: A Method for Reconstructing the Past*. LexisNexis.
5. Lee, H. C., Palmbach, T., & Miller, M. T. (2001). *Henry Lee's Crime Scene Handbook*. Academic Press.
6. FBI. (2022). *Crime Scene Investigation: A Guide for Law Enforcement*. Retrieved from <https://www.fbi.gov>
7. Stelfox, P. (2009). *Criminal Investigation: An Introduction to Principles and Practice*. Routledge.

**ПРАВОВОЙ И ПОЛИТИЧЕСКИЙ КОНТЕКСТ РЕАЛИЗАЦИИ ПРИНЦИПА
НАИЛУЧШЕГО ОБЕСПЕЧЕНИЯ ИНТЕРЕСОВ РЕБЕНКА В МЕЖДУНАРОДНОЙ
ПРАКТИКЕ**

Бекбутаева Л.Ш.

Советник по развитию программ по защиты детей
и государственно-правовой деятельности
в Ассоциации SOS Детские деревни Узбекистана

Аннотация:

В статье рассматривается принцип наилучшего обеспечения интересов ребенка как основополагающий элемент международного права в области защиты прав детей. Принцип, закрепленный в Конвенции о правах ребенка (1989), обязывает государства принимать решения, руководствуясь потребностями и правами детей. Однако в реальной практике существует ряд юридических и политических ограничений, которые препятствуют полноценной реализации этого принципа. В частности, недостаточная правовая база, дефицит ресурсов, политические и экономические кризисы, а также различия в правовых системах стран оказывают существенное влияние на эффективность применения принципа. Особое внимание уделено роли международных судов, таких как Международный суд ООН и Европейский суд по правам человека, в развитии правоприменительной практики. В статье также рассматриваются проблемы, связанные с несовершенством законодательства, международными конфликтами и ролью международного сотрудничества в преодолении этих барьеров.

Ключевые слова:

Принцип наилучшего обеспечения интересов ребенка, защита прав детей, международное право, Конвенция о правах ребенка, юридические и политические ограничения, судебная практика, международное сотрудничество, права детей, правовые системы.

Введение: Принцип наилучшего обеспечения интересов ребенка является одним из наиболее значимых и признанных принципов международного права в области защиты прав детей. Тем не менее, несмотря на широкое признание и важность данного принципа, его реальное применение в разных странах сталкивается с множеством юридических, политических и социальных барьеров. Эти ограничения варьируются в зависимости от особенностей национальных правовых систем, экономических условий, политической ситуации и культурных традиций. В статье будут рассмотрены основные проблемы, с которыми сталкиваются государства и международные организации при реализации принципа наилучшего обеспечения интересов ребенка, а также те юридические и политические ограничения, которые препятствуют его эффективному применению. Автор, в результате анализа, проведенного в рамках данной статьи, предложит рекомендации, направленные на усиление защиты прав детей и улучшение практики применения принципа наилучшего обеспечения интересов ребенка.

Основная часть. Принцип наилучшего обеспечения интересов ребенка является краеугольным камнем международного права в области защиты прав детей. Принцип был включен в Конвенцию о правах ребенка (1989), который гласит, что «во всех действиях в отношении детей, независимо от того, предпринимаются они государственными или частными учреждениями, занимающимися вопросами социального обеспечения, судами, административными или законодательными органами, первоочередное внимание уделяется

обеспечению наилучших интересов ребенка¹). Этот принцип закрепляет за детьми особую юридическую защиту, подчеркивая, что любые решения, касающиеся ребенка, должны учитывать его потребности и права. Многие исследователи считают, что интерес ребенка обусловлен его потребностями. Ю.Ф. Беспалов разделяет это мнение, определяя интерес как потребность ребенка в создании условий, которые способствуют его полноценному развитию, подготовке к самостоятельной жизни и обеспечению благополучия². Важно отметить, что «наилучшие интересы» не ограничиваются только благосостоянием ребенка в материальном смысле, но также касаются его психологического, эмоционального и социального развития.

Принцип эволюционировал в международной практике и был расширен рядом международных документов, таких как Европейская конвенция о правах человека и различные резолюции ООН. Принцип активно развивался в контексте судебных решений международных судов, таких как Международный суд ООН и Европейский суд по правам человека, которые применяли этот принцип при рассмотрении дел, касающихся прав детей.

Принцип наилучшего обеспечения интересов ребенка является важной частью системы прав человека. Его применение позволяет обеспечить детям широкий спектр прав: право на образование, медицинскую помощь, защиту от насилия, право на участие в общественной жизни³. Взаимосвязь этого принципа с другими правами детей является важным аспектом в теории прав человека. С концептуальной точки зрения, принцип наилучшего обеспечения интересов ребенка отражает идею о том, что дети обладают не только правами, но и особой потребностью в защите их интересов. Он тесно связан с правами детей на равенство и отсутствие дискриминации, а также с их правом на защиту от насилия и эксплуатации.

Данный принцип признан большинством государств мира, однако его применение различается в зависимости от юридических, культурных и политических особенностей каждой страны. В международной практике принцип активно используется в международных актах, таких как Конвенция о правах ребенка ООН, Европейская конвенция о правах человека и другие международные соглашения. Например, в Европейской конвенции о правах человека принцип наилучшего обеспечения интересов ребенка рассматривается как один из приоритетных в вопросах, касающихся прав детей.

В разных странах подходы к реализации принципа наилучшего обеспечения интересов ребенка могут значительно различаться. Например, в странах Европейского Союза принцип широко применяется в законодательстве, а решения судебных органов часто учитывают наилучшие интересы детей при принятии решений по вопросам опеки и защиты. В США и Австралии этот принцип также признан, но в контексте правовой системы и практики часто наблюдаются различия в его применении⁴.

В странах Азии, таких как Япония и Южная Корея, влияние традиционных ценностей и семейных норм также может влиять на трактовку этого принципа. В этих странах могут существовать особенности в решении вопросов опеки и прав детей, которые иногда противоречат международным стандартам. Более того, в большинстве государств семья

¹ Конвенция о правах ребенка (1989)

² Беспалов, Ю.Ф. Некоторые вопросы реализации семейных прав ребенка (теория и практика) / Ю.Ф. Беспалов. – Владимир : ВГПУ, 2001.с.12.

³ Неровная Н. Н. Обеспечение и защита прав ребенка на международном уровне // Вестник ЧелГУ. 2013. №27 (318). URL: <https://cyberleninka.ru/article/n/obespechenie-i-zaschita-prav-rebenka-na-mezhdunarodnom-urovne>

⁴ Старовойтова К. В. Принцип наилучшего обеспечения интересов ребенка и границы его признания зарубежными государствами // Гуманитарные, социально-экономические и общественные науки. 2017.№8

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

рассматривается как институт, который может самостоятельно разобраться со своими внутренними делами. Считается, что родственные связи способны предоставлять детям необходимую поддержку, и вмешательство государства в лице профессиональных служб не всегда расценивается в наилучших интересах ребенка. Сравнительный анализ этих стран показывает, как различные культурные, политические и социальные факторы могут оказывать влияние на применение принципа.

Одной из ключевых проблем, стоящих на пути реализации принципа наилучшего обеспечения интересов ребенка, являются различные юридические и политические ограничения, которые варьируются в зависимости от конкретных стран и регионов. В некоторых странах применение принципа наилучшего обеспечения интересов ребенка ограничивается отсутствием соответствующей правовой базы. Законодательство, охватывающее права детей, может быть либо устаревшим, либо не достаточно разработанным для адекватного реагирования на современные вызовы⁵. Например, в некоторых странах отсутствуют четкие законы, которые бы требовали обязательного учета интересов ребенка в процессе принятия решений, касающихся его опеки, образования или здравоохранения. В таких странах, несмотря на признание международных стандартов, на практике этот принцип может не быть должным образом внедрен в национальное законодательство. Кроме того, даже если правовая база существует, часто недостаточно ресурсов для эффективной защиты прав детей. Это может быть связано как с нехваткой финансовых средств для реализации программ по защите прав детей, так и с дефицитом квалифицированных специалистов — социальных работников, психологов, юристов, судей, которые могли бы эффективно защищать интересы ребенка в судах и других инстанциях.

Политические и экономические кризисы, такие как войны, политическая нестабильность, коррупция или экономические спады, часто становятся серьезными препятствиями для внедрения принципа наилучшего обеспечения интересов ребенка. В таких условиях вопросы защиты прав детей могут отойти на второй план, уступая место более насущным политическим и экономическим проблемам. Государства, переживающие кризисные ситуации, могут ограничивать финансовые ресурсы для программ, направленных на защиту прав детей, или же вовсе игнорировать обязательства, вытекающие из международных конвенций по правам ребенка, если эти обязательства оказываются несовместимыми с текущей политической ситуацией.

Важным аспектом является также различие в правовых системах стран. Хотя международное сообщество, например, в лице ООН, активно продвигает принцип наилучшего обеспечения интересов ребенка, государства могут иметь разные подходы к его применению в контексте своих юридических традиций. Например, в странах с общим правом (например, Великобритания или США) могут существовать практики, которые отличаются от практик стран с континентальной правовой системой (например, Франция или Германия), что затрудняет гармонизацию законодательства в области прав детей. Кроме того, не все государства готовы или способны адаптировать свои национальные законодательства в соответствии с международными стандартами, включая Конвенцию ООН о правах ребенка. Это может быть связано с культурными, религиозными или социальными различиями, а также с

⁵ Кабанов В. Л. "Проблематика реализации принципа наилучших интересов ребенка в Африке на примере дела "дети нубийского происхождения в Кении"" Правовое государство: теория и практика, по. 3 (41), 2015.

политической волей руководства страны. В некоторых странах принципы, заложенные в международных документах, могут быть восприниматься как чуждые или неприменимые в национальном контексте.

Международные споры и конфликты, такие как дипломатические разногласия или военные конфликты, также могут оказывать влияние на признание интересов ребенка на международной арене. В условиях международных конфликтов часто возникает проблема защиты прав детей, например, в ситуациях, когда дети становятся жертвами насилия, эксплуатации, или в случае международных похищений детей, когда один из родителей пытается перевезти ребенка в другую страну против воли другого родителя. Примером таких ситуаций могут служить дела, касающиеся международных похищений детей, где суды, руководствуясь принципом наилучшего обеспечения интересов ребенка, принимают решения, ориентированные на его безопасность и благосостояние. В таких случаях крайне важно, чтобы государства сотрудничали в рамках международных соглашений, таких как Гаагская конвенция о гражданских аспектах международного похищения детей, для защиты прав детей и предотвращения их эксплуатации. Для преодоления барьеров, связанных с юридическими и политическими ограничениями, необходимо усиливать международное сотрудничество и обмен опытом между странами⁶. Это включает в себя как усиление взаимодействия между государствами, так и сотрудничество с международными организациями, правозащитными группами и экспертами в области прав детей.

Заключение. Принцип наилучшего обеспечения интересов ребенка является фундаментом современной системы защиты прав детей, обеспечивая детям особую юридическую защиту и гарантии, направленные на учет их потребностей в принятии всех решений, касающихся их жизни. Однако, несмотря на признание этого принципа большинством государств, его практическое применение сталкивается с множеством юридических и политических ограничений. К ним относятся несовершенство законодательства, недостаток ресурсов, политическая нестабильность и различия в правовых системах. Важно подчеркнуть, что для успешной реализации принципа необходимы комплексные усилия на международном уровне: укрепление правовой базы, усиление международного сотрудничества. Устранение барьеров, отмеченных в работе позволит создать более эффективную систему защиты прав детей и обеспечить их безопасность и благосостояние в соответствии с международными стандартами.

⁶ Federica V. The best interest of the child as put into practice worldwide 2023 [Humanium](#)

Список использованной литературы

1. Alston M. B. International Children's Rights.
2. Doek J. E. The Rights of Children in International Context.
3. Federica V. The best interest of the child as put into practice worldwide 2023 Humanium <https://www.humanium.org/en/the-best-interest-of-the-child-as-put-into-practice-worldwide/>
4. Бенашвили Л. Ю. Защита прав ребенка в международном праве.
5. Кабанов В. Л. Проблематика реализации принципа наилучших интересов ребенка в Африке на примере дела "дети нубийского происхождения в Кении. Правовое государство: теория и практика, по. 3 (41), 2015, pp. 159-164.
6. Конвенция о правах ребенка (1989).
7. Неровная Н. Н. Обеспечение и защита прав ребенка на международном уровне // Вестник ЧелГУ. 2013. №27 (318). URL: <https://cyberleninka.ru/article/n/obespechenie-i-zaschita-prav-rebenka-na-mezhdunarodnom-urovne>
8. Старовойтова К. В. Принцип наилучшего обеспечения интересов ребенка и границы его признания зарубежными государствами // Гуманитарные, социально-экономические и общественные науки. 2017. №8-9.

Formation of foreign language teaching in Uzbekistan and its damaging factors

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Annotation: The article discusses the current developments in the establishment of foreign language teaching in Uzbekistan, as well as the training of special personnel in these languages.

Keywords: foreign language, personnel, education, foreign, Soviet, school, Russian, English, German, French, student, pupil.

Introduction. During the years of independence, the education system of our country was radically reformed. This process is clearly visible in all areas related to the field of education. The main goal of Uzbekistan in education was to train specialists who would meet the needs of international students in the socio-economic, political and cultural spheres. If until the 20th century, attention was paid to the study of Eastern languages and Russian, then from the 50s of the 20th century, the study of European languages was introduced. The resolutions of the Council of Ministers of the former USSR “On improving the teaching of foreign languages at school” and “On training teachers of foreign languages” in 1947 led to a certain revival of the teaching of foreign languages in Uzbekistan. The reason for the adoption of these resolutions was that until the second half of the 20th century, foreign languages were not taught in many schools in our country. In some schools where foreign languages were taught, only German was taught. In order to improve the teaching of foreign languages in the republic, work has been carried out in several directions.

- 1) Expanding and improving teacher training,
- 2) Establishing foreign language teaching in schools where foreign languages are not taught,
- 3) Targeted distribution of Western European languages being studied,
- 4) Providing educational institutions with educational literature,
- 5) Strengthening control over improving the quality of teaching,

Main part. The main problem facing the republic's public education system was the issue of establishing the teaching of foreign languages in all schools and the correct distribution of teaching of other Western European languages. The solution to this problem required providing schools and higher education institutions with foreign language specialists. Therefore, in January 1948, the second resolution of the former Soviet government “On the organization of training foreign language teachers” was adopted. The resolution indicated that the foreign language faculties of the Tashkent Pedagogical Institute and the Tashkent Evening Pedagogical Institute were not properly organized to train foreign language teachers from local youth.

To eliminate these shortcomings, the Tashkent Institute of Foreign Languages was established in 1948. In 1949, a correspondence department began operating at the institute, and in 1960, an evening department. In the first academic year, the Tashkent Institute of Foreign Languages was filled with applicants who could not enter other higher education institutions. Since these students did not have sufficient knowledge of foreign languages, a large number of them dropped out of the institute in the first year of study.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

The establishment of the Tashkent Institute of Foreign Languages could not fully solve the problem of foreign language teachers in rural areas. In this regard, in 1950, the Council of Ministers of the Uzbek SSR adopted a resolution on organizing the training of foreign language teachers at the philological faculties of universities starting from the 1951-1952 academic year. In addition, 30 places were additionally allocated for Uzbek students from foreign language higher educational institutions of the Ukrainian SSR.

As we noted above, the Tashkent Institute of Foreign Languages admitted 117 students in the first direction in 1951, 154 in 1952, and 222 in 1953. In general, the number of personnel in foreign languages was to increase threefold over the five-year period. The number of students studying in the foreign language direction continued to grow in subsequent years. In the 1956-1957 academic year, 620 students studied English and 483 students studied German in the full-time departments of all higher educational institutions in the Republic. In the 1958-1959 academic year, 601 students studied English and 512 students studied German in the full-time department of the Tashkent Institute of Foreign Languages.

Unfortunately, in those years, representatives of the local ethnic group were not sufficiently involved in studying foreign languages. This was due to the difficulties faced by young people graduating from rural schools in entering higher education, as the lack of foreign language teachers in rural areas prevented them from completing their foreign language courses. Of the 370 students admitted to the Tashkent Institute of Foreign Languages in 1948, 12 (0.3%) were Uzbeks. A few years later, the number of representatives of the local ethnic group increased. In the 1956-1957 academic year, 545 out of 1,163 students (46%), in the 1961-1962 academic year, 997 out of 1,377 students (72%), and in the 1970-1971 academic year, 2,267 out of 2,672 students (84%) were Uzbek students. Thus, the problem of training foreign language teachers from among representatives of the local ethnic group was solved by the beginning of the 1970s.

Conclusion. In the second direction (establishing foreign language teaching in schools where foreign languages were not taught), in January 1941 the Council of People's Commissars of the Uzbek SSR adopted a resolution on improving the teaching of foreign languages in schools. According to it, the task was set to achieve the teaching of foreign languages in all schools starting from the 5th grade in the 1941/42 academic year, and in all rural schools by 1944. Pupils and students who received unsatisfactory grades in foreign languages were prohibited from being transferred to the next grade or course. However, the outbreak of war slowed down the implementation of this resolution. The expansion of foreign language teaching was also carried out by increasing the share of foreign language subjects in the curriculum of all schools, for example, in the 1946-1947 academic year, 395 hours were allocated for foreign languages, and starting from the 1947-1948 academic year, 462 hours were allocated. By 1959, according to the Ministry of Education of the Uzbek SSR, foreign languages were taught in 37% of schools in the republic. Starting from the 1961-1962 academic year, in classes with more than 25 students, it was established that foreign language lessons should be taught in two groups. Modern tasks were set for students, including the development of speaking, listening comprehension, reading and writing skills.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

List of used literature

1 From the history of the development of teaching foreign languages in Uzbekistan (as an example in the period of soviet government)

BB Tursunov ISJ Theoretical & Applied Science 1 (69), 63-66

2 ЎЗБЕКИСТОНДА ТАЪЛИМ ТАРАҚҚИЁТИ ВА ХОРИЖИЙ ТИЛЛАРНИ ЎРГАНИШДА НОДАВЛАТ ТАЪЛИМ МАРКАЗЛАРИ ТАЖРИБАСИ

Б Турсунов ВЗГЛЯД В ПРОШЛОЕ SI-2

3 ЎЗБЕКИСТОНДА ХОРИЖИЙ ТИЛЛАРНИ ЎҚИТИШНИНГ ШАКЛЛАНИШИ ВА УНИНГ ТАРИХИЙ БОСҚИЧЛАРИ: Турсунов Бехзодбек Андижон кишлоқ хўжалиги ва агротехнологиялар институти гуманитар фанлар ...

Б Турсунов Образование и инновационные исследования международный научно-методический журнал

4 COMMENCEMENT OF THE FOREING LANGUAGE TRAINING IN EDUCATIONAL ESTABLISHMENTS OF UZBEKISTAN

ББ ТУРСУНОВ Иностранные языки в Узбекистане, 58-66

5 O'zbekistonda innovatsion faoliyatida fan va ta'limning rivojlanishi

BN Tursunov, B Tursonov, G Valixonova, M Nozima, K Nasibjon, Science Promotion 1 (1), 106-117

6 EXPERIENCE OF FOREIGN COUNTRIES IN TEACHING FOREIGN LANGUAGES IN UZBEKISTAN

BB Tursunov УЧЕННЫЙ XXI ВЕКА, 77

TECHNOLOGY FOR PREPARING SAMPLES FOR STUDYING
ELECTROPHYSICAL AND OPTICAL PROPERTIES OF DOPED AND UNDOPED
BAMBOO STALMS

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Abstract. *The fundamental parameters of natural semiconductor fibers, the dependence of electrical conductivity on temperature, and the photoconductivity of doped semiconductor bamboo fibers have been studied. The temperature dependences of the current-voltage characteristics and the electrical conductivity of bamboo doped and undoped with iodine were studied to create new elements of electronic equipment.*

Key words: *Bamboo doped with iodine, photoconductivity, electrical conductivity spectrum, temperature.*

Introduction

Today, the demand for new semiconductor compounds and materials is growing in the world. At the same time, the great demand for natural semiconductor materials particularly requires extensive research into the physical processes of such natural semiconductors, such as bamboo fibers. One of the most important tasks in this direction is to carry out the following targeted scientific research: determining the fundamental parameters of natural semiconductor fibers; demonstrate the laws of the dependence of electrical conductivity on temperature; determination of photoconductivity spectra of undoped and doped semiconductor bamboo fibers; creation of new elements of electronic equipment based on them. A broad study of the mechanisms of physical processes occurring in various natural semiconductor fibers is one of the urgent scientific tasks in this direction [1].

As you know, bamboo fibers are a naturally environmentally friendly material with antibacterial and deodorizing properties. It absorbs moisture perfectly. Fabrics made from bamboo fibers retain their shape without allowing external mechanical influence - deformation [2].

Experiment

The samples for the experiment were natural bamboo stems, which were prepared using the technology described in [3]. For the process of alloying with iodine, bamboo stems were first cut into small pieces using a hacksaw, successively processed in distilled water and placed in a glass tube with a diameter of $D = 1 \div 5$ mm, then the cut side was immersed in a 5% alcohol iodine solution.

After soaking, the samples were kept at a temperature of $60 \div 80$ °C for $15 \div 300$ minutes, then dried in a chamber for 5 hours in the presence of moisture-absorbing silica gel. To obtain ohmic contacts, we used prepared electrically conductive adhesive based on a mixture of graphite and liquid glass [4], where crushed graphite, like powder particles, is mixed with liquid glass until thickened. Such electrically conductive adhesive has a resistance $R = 3 \cdot 10^2$ O, films with l = length 1 cm and thickness $d = 20$ microns. As a result of electrical measurements, it was established that the current-voltage characteristics (volt-ampere characteristics) of the samples correspond to a linear dependence [5].

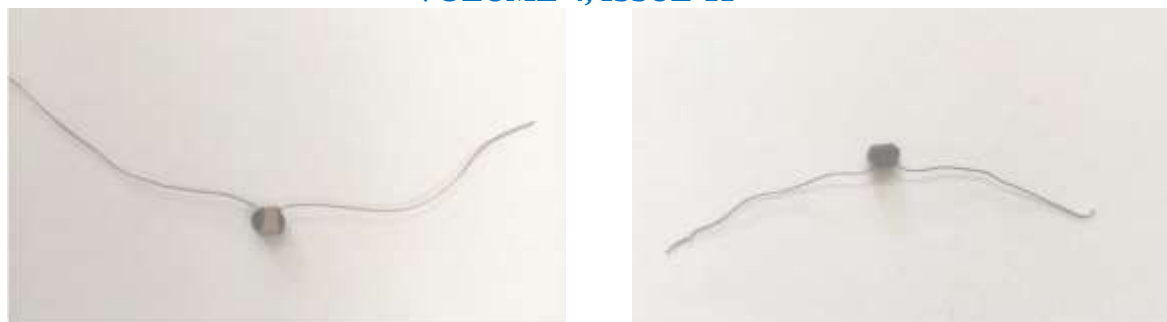


Fig. 1. Prepared samples for research

To obtain ohmic contacts, bamboo fibers were placed parallel to each other and cut to the same length using a cutter [6]. Electrically conductive glue is applied to the ends of the cut fibers, samples with the required dimensions, which are located in parallel, and placed in a drying chamber (Fig. 1).

Experiment results

The current-voltage characteristic of bamboo fibers was measured using a simple method at a temperature $T = 300\text{K}$. To obtain high-quality results, the F195 micro-nanoammeter is used, which is capable of measuring very small current pulses in nanoamperes (Fig. 2).

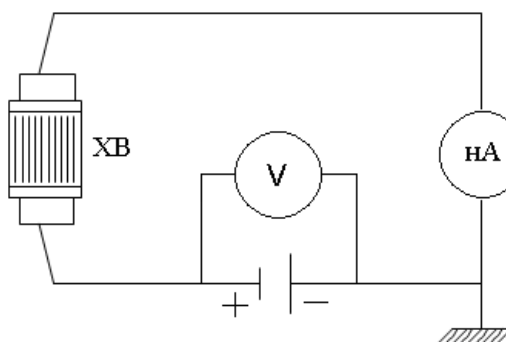


Fig. 2. Schematic design for measuring the current-voltage characteristics of bamboo fibers.

Typically, the electrical conductivity of semiconductor materials varies exponentially with temperature. Bamboo fibers have similar physical properties.

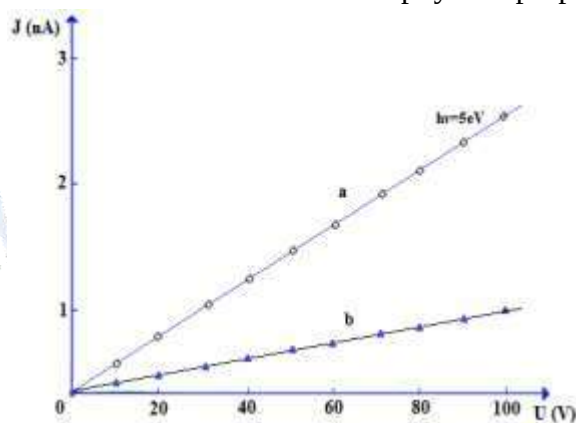


Fig 3. Current-voltage characteristic of an undoped bamboo stem treated at a temperature of 30°C . a) CVC under illumination of 5 eV ($h\nu = 5\text{ eV}$). b) CVC in the dark ($h\nu = 0\text{ eV}$).

The prepared bamboo stem was exposed to voltages from 0 to 100 V at different temperatures and the current-voltage characteristic was studied. It was observed that the leakage current value of the undoped bamboo stem sample increases at higher temperatures (Fig. 3).

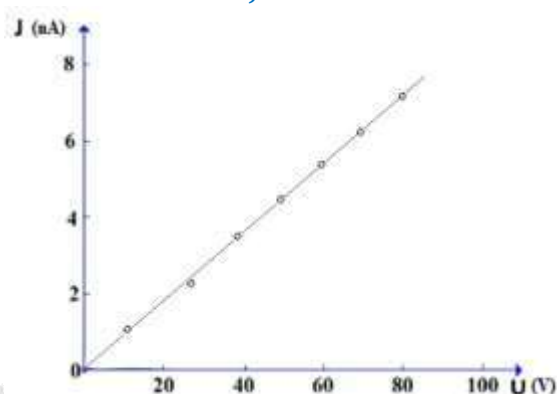


Fig. 4. Current-voltage characteristic of a bamboo stem doped with iodine. At a temperature of 75 °C (Processing 4.5 hours)

As can be seen from Figure 4, the electrical conductivity of a bamboo stem ($\sim \sigma$) increases exponentially with activation energy in the temperature range 0÷100 °C. As a result of research, it was revealed that the amount of current passing through a bamboo stem increases exponentially depending on the external temperature.

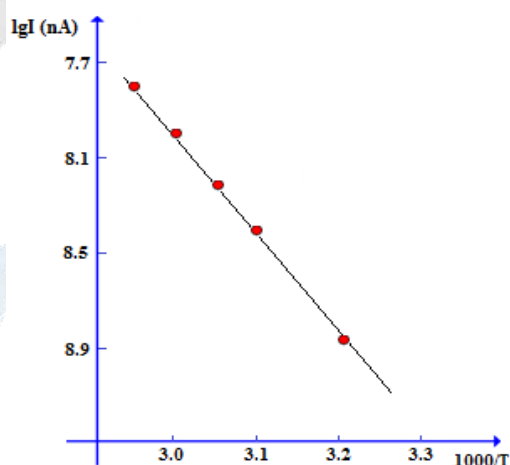


Fig. 5. Activation energy of an undoped bamboo stem at a voltage of U=800V.

As a result of the study of samples made from bamboo stems and processed at temperatures of 60 °C, 65 °C, it was established that the activation energy value when processed at different temperatures and under a constant voltage load is different. The samples were processed at a temperature of 60 °C for 2 hours and tested at voltages of 20 V and 100 V. As a result of the tests, it was found that the activation energy of the sample was 0.82 eV for undoped bamboo (Fig. 4), and 0.57 eV for bamboo doped with iodine (Fig. 5).

Conclusion

Based on the experimental results obtained, it was established that, based on the temperature dependence of the electrical conductivity of samples doped and undoped with iodine, bamboo stems, electrical conductivity increases in a direct relationship with increasing temperature, and the thermal ionization energy is $E_i = 0.57$ eV. The temperature dependence of B AX and electrical conductivity of a bamboo stem was studied.

It was revealed that the magnitude of the passing current in bamboo stems doped with iodine and manganese significantly exceeds the current magnitude of the undoped bamboo sample.

Literature

1. Zhang, M, S. Kawai, H. Sasaki, T. Yamawaki, Y. Yoshida, and M. Kashiara. 1995. Manufacture and properties of composite fiberboard. 2. Fabrication of board manufacturing apparatus and properties of bamboo/wood composite fiberboard. Mokuza Gakkaishi. 41(10):903-910.
2. Mamadalimov A.T., Zakirov A.S., Khamidjonov I.Kh., Khakimova N.K., Mukhtarova F.A. Ubaydullaeva, D.R. Aminov D.R., Khusanova. M.K., Sharipov. Zh.F., Arslonov M., Azimov B.L., Musurmonov K.N. “Modification of electrophysical and optical properties of natural nanostructured semiconductor fibers” // PIAK - XIII -2020 Mavzushigi Republic Ilmiy Anjuman Materiallari . Toshkent. 19th May. _ 2020
3. A.T. Mamadalimov, N.K. Khakimova, Sh.M. Norbekov, N.B. Khaitimmetov, M.Z. Akhmadzhonov, M.K. Khusanova, Zh.F. Sharipov, K.N. Musurmonov, B.L. Azimov, M.O. Aslonov. “Features of the influence of UV irradiation of silkworm moths on the strength and electrical characteristics of silk fibers” // PIAK-XIV-2021 Mavzushigi Republic Ilmiy Anzhuman Materiallari. Toshkent. 26–27 Mart. 2021
4. Pulp and paper production technology. In 3 volumes. Reference materials. – St. Petersburg: LTA, 2002.–419 p.
5. Ma X., Huang L., Chen Y., Cao Sh., Chen L. Preparation of bamboo dissolving pulp for textile production. Part 1. Study on prehydrolysis of green bamboo for producing dissolving pulp // Bio Resources. 2011. N6(2). pp. 1428-1439.
6. Kh.S. Daliev, Z.M. Khusanov, East Eur. J. Phys. 1, 366 (2024), <https://doi.org/10.26565/2312-4334-2024-1-35>

СТАТИСТИКА РЕПРОДУКТИВНЫХ НАРУШЕНИЙ СРЕДИ ЖЕНЩИН В УЗБЕКИСТАНЕ

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Аннотация: Проблема бесплодия в браке, несмотря на значительные успехи в диагностике и лечении, продолжает оставаться одной из самых острых медико-социальных проблем современности. В Узбекистане частота бесплодных браков значительно превышает критический уровень и становится государственной проблемой. Несмотря на важность данной проблемы, не существует единой методологии для выявления и обследования бесплодных пар. Актуальность вопроса обусловлена тем, что с каждым годом увеличивается процент женщин старшего репродуктивного возраста (35-38 лет), обращающихся в центры ЭКО с целью достижения счастья материнства.

Ключевые слова: Репродуктивное здоровье, репродуктивные права, экстрагенитальные заболевания, маммография, колпоскопия, рак шейки матки, лапароскопические операции.

Введение: В Узбекистане на сегодняшний день с диагнозом бесплодие под диспансерным наблюдением находятся свыше 25 тысяч женщин и 7 тысяч мужчин. По данным различных исследований, проведенных в Узбекистане, сегодня удельный вес женщин, страдающих первичным бесплодием, из числа вступивших в брак, составляет от 4,9% до 5,3%. По оценкам Всемирной организации здравоохранения, в Узбекистане частота бесплодных браков значительно превышает критический уровень и приобретает значение государственной проблемы.

Цель: Изучить структуру и причин бесплодия у женщин в Узбекистане по данным скрининга

Актуальность: Согласно определению Организации Объединенных Наций (ООН), «репродуктивное здоровье» включает в себя не только наличие или отсутствие заболеваний, связанных с репродуктивной системой и ее функциями, но и общее физическое, психическое и социальное благополучие человека. «Репродуктивные права» представляют собой основные права супругов и отдельных личностей принимать решения о количестве детей, интервалах между их рождением и времени родов, а также обладать необходимой информацией и ресурсами для этого. Акцентируется внимание на предотвращении бесплодия и его осложнений, профилактике и лечению заболеваний, передающихся половым путем, соблюдении гигиены половой жизни и ответственности каждого за свое репродуктивное здоровье. [1]

В последние годы в странах Центральной Азии, хоть и наблюдается значительное снижение смертности матерей, этот показатель все еще остается достаточно высоким. Следует отметить, что основной причиной смертности среди матерей является связанная с образом жизни женщин до беременности. В частности, уровень смертности матерей напрямую зависит от хронической нехватки витаминов, наличия заболеваний,

способствующих риску беременности, а также от того, что многие женщины забираются в роды в подростковом возрасте, имеют слишком много детей и испытывают истощение организма, особенно после 35 лет. Единственным решением, которое может разорвать эту тяжелую цепь, является улучшение здоровья женщин репродуктивного возраста и разумное планирование семьи.

Анализ, проведенный в нашей стране, показывает, что в последние годы 4,7% разводов связано с бесплодием пар. Согласно данным исследований, женщины с первичным бесплодием составляют от 4,9% до 5,3% от общего числа состоящих в браке. Эти цифры ясно показывают важность и необходимость внедрения вспомогательных репродуктивных технологий для сохранения семей в Узбекистане. [2]

На основании приказа Министерства здравоохранения Республики Узбекистан от 4 мая 1999 года № 296 был организован Республиканский учебно-методический центр по здравоохранению женщин репродуктивного возраста и утвержден его Устав. Основная цель создания данного центра заключается в том, что в республике в настоящее время насчитывается около 4 миллионов семей, и ежегодно образуется 250 тысяч новых семей. По статистическим данным, почти 65-70 процентов женщин в репродуктивном возрасте и 75-80 процентов беременных женщин страдают от различных экстрагенитальных заболеваний, что может привести к осложнениям во время беременности и родов, а также к появлению у новорожденных различных заболеваний и инвалидности женщин в результате родовых осложнений. [3]

Реализация реформ в сфере здравоохранения требует внимания к онкологическим заболеваниям среди женщин, а также мер по их раннему выявлению и профилактике, чтобы снизить уровень смертности. В настоящее время рак шейки матки занимает лидирующие позиции в мире. Он является вторым по распространенности раком среди женщин в Узбекистане. В 2021 году было зарегистрировано 1827 новых случаев. Заболеваемость и смертность постоянно растут, и предполагается, что к 2030 году рак шейки матки будет вызывать 2100 новых случаев заболевания и 1300 случаев смерти в год. [4]

Для снижения заболеваемости раком шейки матки необходимо внедрение скрининговых программ для ранней диагностики и своевременного лечения предраковых заболеваний на уровне первичной медицинской помощи. В Республике Каракалпакстан рак шейки матки занимает второе место после рака молочной железы среди женщин. В 2020 году было выявлено 117 женщин с раком шейки матки, из которых 69 имели запущенные формы (III-IV стадии), а количество женщин, состоящих на диспансерном учете, составило 438. Наивысший уровень заболеваемости раком шейки матки наблюдается в возрастной группе от 40 до 44 лет. В 2020 году рак шейки матки стал причиной смерти 71 женщины в Каракалпакстане. В рамках проекта около 50000 каракалпакских женщин прошли бесплатные обследования, некоторые из которых получили необходимые процедуры или продолжают лечение.

Кроме того, в двух районах и городе Нукус было приобретено и установлено три устройства для радиоволновой хирургии, а также подготовлены специалисты для работы с ними. Это оборудование позволяет безопасно выполнять биопсии и лечение предраковых заболеваний шейки матки, охватывать население ближайших поликлиник, а также лечить случаи предраковых заболеваний шейки матки на месте проживания женщин, что снижает нагрузку на Онкологический центр. В настоящее время Министерство здравоохранения

разрабатывает проект стратегии "Здоровье населения – 2030", основанный на лучших международных практиках. Прохождение гинекологических осмотров женщин раз в год способствует раннему выявлению заболеваний. Эффективность этих обследований заключается в том, что они позволяют выявить даже самые незначительные изменения в клетках, что дает возможность провести своевременное лечение и предотвратить возникновение осложнений, избегая рецидивов заболеваний. В настоящее время в Узбекистане реализуются крупные программы по профилактике онкологических заболеваний.

В нашей стране уделяется большое внимание здоровью матерей и детей, благодаря чему услуги в области репродуктивного здоровья стали доступны для всего населения, в результате чего снизилась смертность матерей и детей. В частности, с 2017 по 2023 год смертность матерей уменьшилась в 1,5 раза, а младенцев – в 1,3 раза. [5]

Заключение: Установлено, что у обследованных женщин основным фактором бесплодия является гормональная дисфункция, включающая диффузный зоб с субклиническим гипотиреозом, яичниковую недостаточность с нарушением менструальной функции, синдром поликистозных яичников, гиперандрогению, недостаточность лютеиновой фазы и нарушение фолликулогенеза. Также выявлены воспалительные заболевания мочеполовой системы, такие как TORCH-инфекции.

Список литературы:

1. Ayupova F. M., Yu. Q. Djabbarova Ginekologiya: Darslik/-Tushkent: MChJ "Mehridaryo", 2015,
2. Беженарь В.Ф. Трубно-перитонеальное бесплодие. Проблемы и перспективы / В.Ф. Беженарь, А.С. Максимов // Журнал акушерства и женских болезней. Выпуск 3. — Т. 48. — 1999. — С. 48-55.
3. Кулаков В.И. Значение лапароскопии в клинике бесплодия: структура и частота патологии, эффективность лечения / В.И. Кулаков, Т.В. Овсянникова// Проблемы репродукции. — 1996. — № 2. — С. 35-38.
4. Кулаков В.И. Проблемы и перспективы исследований по проблеме «Бесплодный брак» / В.И. Кулаков, Т.Я. Пшеничникова, Е.М. Вихляева // Акушерство и гинекология. — 1989.
5. Ya.N. Allayorov, F.Q. Asqarova. Ginekologiya va reproduktiv salomatlik. (Darslik). - T.: «Innovatsion rivojlanish nashriyot- matbaa uyi», 2023,
5. Ahmat o'g'li, D. S., & Xamidullayevna, Q. N. (2023). Bachadon Bo 'Yni Saratoni Bilan Kasallangan Ayollar Buzilishlar. AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI, 2(12), 141-143.
6. Dursunov, S. (2023). ОИЛАВИЙ ИНҚИРОЗЛАР ВА ПСИХОТЕРАПИЯ ЙЎНАЛИШИНИНГ АСОСЛАРИ.

**YOUTH AND THEIR ROLE IN SOCIETY: A FORCE SHAPING THE
FUTURE**

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Abstract: Youth constitute a significant segment of the global population, embodying dynamism, creativity, and potential for societal transformation. This article explores the multifaceted roles that young individuals play in shaping societal norms, driving innovation, and fostering sustainable development. Through a review of existing literature and analysis of contemporary case studies, the study highlights the contributions of youth in various sectors, including technology, politics, social movements, and education. Additionally, it addresses the challenges faced by youth, such as unemployment, limited access to education, and socio-political marginalization, proposing strategies to empower young people to fulfill their potential as catalysts for positive change. The findings underscore the imperative of investing in youth development as a cornerstone for building resilient and progressive societies.

Keywords: Youth, societal transformation, innovation, empowerment, sustainable development

Introduction

The youth demographic, typically defined as individuals aged between 15 and 24 years, represents a critical component of society's future trajectory. Comprising approximately 16% of the global population (United Nations, 2023), young people are increasingly recognized as pivotal actors in driving social, economic, and political change. Their unique position at the intersection of tradition and modernity equips them with the capacity to challenge established norms, introduce novel ideas, and advocate for inclusive policies. This article examines the diverse roles that youth play in contemporary society

and explores how their active participation is essential for fostering sustainable development and societal resilience.

Theoretical Framework

Understanding the role of youth in society necessitates a multidisciplinary approach, drawing from sociology, political science, economics, and education theory. Social capital theory (Putnam, 2000) posits that networks and relationships within communities enhance collective action, a concept highly applicable to youth engagement. Additionally, developmental theories, such as Erikson's stages of psychosocial development (Erikson, 1968), emphasize the importance of identity formation during youth, which influences their societal contributions. The intersectionality framework further elucidates how various identities (e.g., race, gender, socioeconomic status) impact youth experiences and opportunities (Crenshaw, 1989).

The Role of Youth in Society

Youth contribute to society in myriad ways, including:

1. Innovation and Technology

Young individuals are often at the forefront of technological advancements and entrepreneurial ventures. Their adaptability to new technologies and willingness to experiment drive innovation in sectors such as information technology, biotechnology, and renewable energy (Smith & Anderson, 2022). Startups founded by young entrepreneurs have introduced disruptive technologies that reshape industries and create new economic opportunities.

3.2. Political Engagement and Governance

Youth participation in political processes is crucial for representative governance. Engaged young voters influence electoral outcomes and advocate for policies that address issues like climate change, education reform, and social justice (Jones et al., 2021). Furthermore, youth-led movements, such as the global climate strikes initiated by Greta Thunberg, exemplify the capacity of young people to mobilize and effect political change.

3. Social Movements and Advocacy

Youth are instrumental in spearheading social movements that challenge systemic inequalities and promote human rights. Their activism in areas like gender equality, racial justice, and LGBTQ+ rights has led to significant societal shifts and legislative reforms (Garcia, 2020). The use of social media platforms enables youth to organize, raise awareness, and mobilize support on a global scale.

4. Education and Knowledge Transfer

Young educators and learners contribute to the dissemination and evolution of knowledge. They engage in research, teaching, and the creation of educational content that addresses contemporary issues and fosters critical thinking. Youth involvement in educational reforms ensures that curricula remain relevant and inclusive of diverse perspectives (Lee & Park, 2019).

Challenges Faced by Youth

Despite their potential, youth encounter numerous obstacles that hinder their full participation in society:

1. Unemployment and Underemployment**

High rates of youth unemployment, exacerbated by economic recessions and automation, limit opportunities for career development and economic independence (International Labour Organization, 2022). Underemployment, where young individuals work in jobs that do not utilize their skills or provide adequate compensation, further undermines their economic stability.

2. Limited Access to Education

Access to quality education remains uneven globally, with marginalized youth facing barriers such as poverty, discrimination, and inadequate infrastructure. Educational disparities impede the acquisition of skills necessary for meaningful participation in the workforce and civic life (World Bank, 2023).

3. Socio-Political Marginalization

In many contexts, youth are underrepresented in decision-making processes and political institutions. This marginalization diminishes their influence on policies that directly affect their lives and perpetuates intergenerational inequalities (UNICEF, 2021).

Strategies to Empower Youth

Addressing the challenges faced by youth requires comprehensive strategies aimed at enhancing their capabilities and opportunities:

1. Enhancing Educational Opportunities

Investing in education infrastructure, teacher training, and inclusive curricula ensures that all youth have access to quality learning environments. Emphasizing STEM (Science, Technology, Engineering, and Mathematics) education and vocational training can equip young people with skills relevant to the modern economy (OECD, 2022).

2. Promoting Youth Entrepreneurship

Supporting entrepreneurship through access to funding, mentorship, and incubation programs fosters innovation and economic empowerment. Policies that reduce barriers to business creation encourage young individuals to pursue entrepreneurial ventures (Global Entrepreneurship Monitor, 2023).

3. Facilitating Political Participation

Creating platforms for youth engagement in political discourse and decision-making processes ensures that their voices are heard. Initiatives such as youth councils, advisory boards, and participatory budgeting can enhance youth representation in governance (Smith, 2021).

4. Strengthening Social Support Systems**

Robust social support systems, including mental health services, career counseling, and community programs, address the holistic needs of youth. These supports mitigate the adverse effects of unemployment, discrimination, and socio-political exclusion (Mental Health Foundation, 2022).

Case Studies

1. The Youth-Led Climate Movement

The global youth climate movement, epitomized by figures like Greta Thunberg, demonstrates the influential role of youth in advocating for environmental sustainability. Through protests, awareness campaigns, and policy advocacy, young activists have pressured governments and corporations to commit to climate action (Thunberg, 2019).

2. Youth Entrepreneurship in Africa

In Africa, youth entrepreneurship initiatives have spurred economic growth and innovation. Programs like the Tony Elumelu Foundation Entrepreneurship Program provide training, mentorship, and seed capital to young entrepreneurs, fostering a new generation of business leaders (Elumelu Foundation, 2023).

Discussion

The active engagement of youth in societal processes is essential for addressing contemporary challenges and ensuring sustainable development. Their unique perspectives and innovative approaches contribute to more resilient and adaptable societies. However, realizing the full potential of youth requires concerted efforts to dismantle structural barriers and create enabling environments that support their aspirations.

Conclusion

Youth are undeniably a force shaping the future of society. Their contributions span technological innovation, political activism, social reform, and educational advancements. To harness this potential, it is imperative to invest in youth development, promote inclusive policies, and facilitate meaningful participation in all spheres of society. Empowering youth not only benefits them individually but also catalyzes broader societal progress, ensuring a sustainable and equitable future for all.

References

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

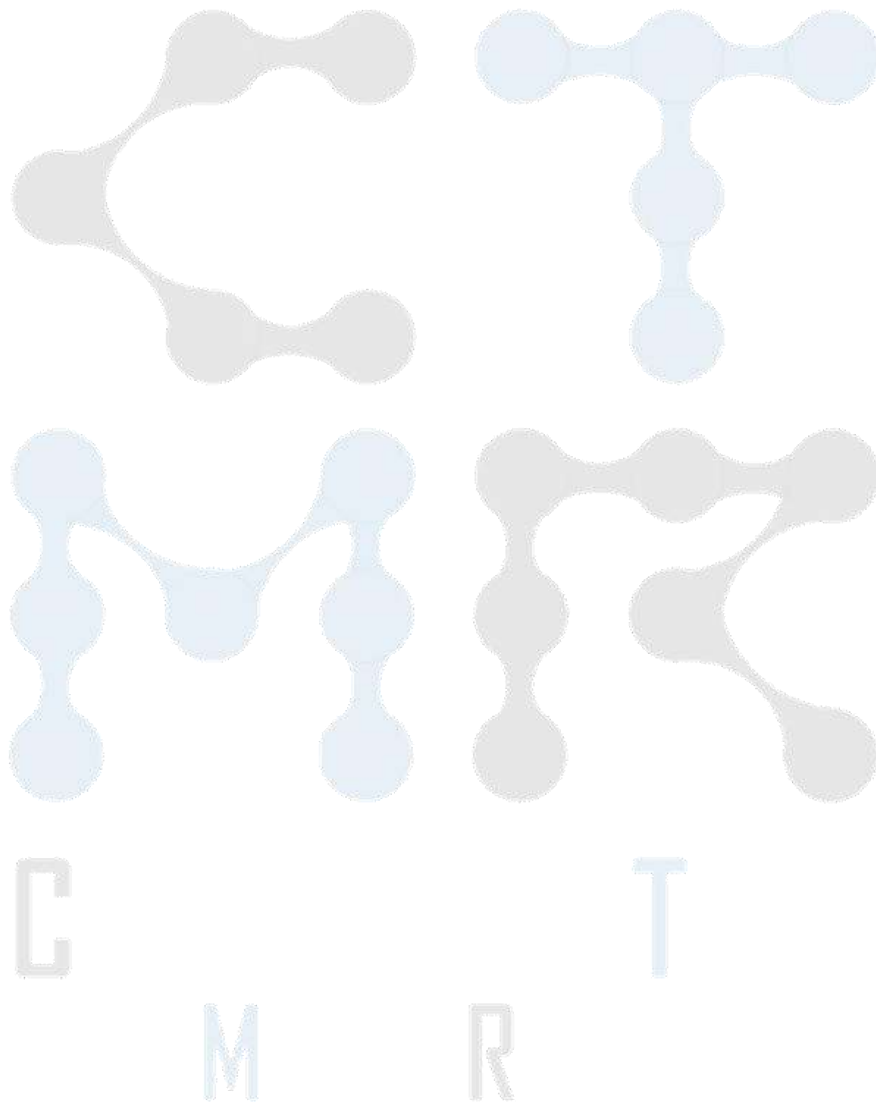
VOLUME-4, ISSUE-11

1. Crenshaw, K. (1989). Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics. University of Chicago Legal Forum.
2. Elumelu Foundation. (2023). Annual Report on Youth Entrepreneurship in Africa*. Lagos: Elumelu Foundation.
3. Erikson, E. H. (1968). Identity: Youth and Crisis. New York: Norton.
4. Garcia, M. (2020). Youth Activism and Social Change. Journal of Social Movements, 15(2), 123-145.
5. Global Entrepreneurship Monitor. (2023). Youth Entrepreneurship Report. London: GEM.
6. International Labour Organization. (2022). Global Youth Employment Trends. Geneva: ILO.
7. Jones, A., Smith, B., & Lee, C. (2021). Political Engagement Among Youth: Trends and Implications. Political Studies Review, 19(3), 200-215.
8. Lee, S., & Park, J. (2019). Educational Reforms and Youth Empowerment. Education Journal, 25(4), 340-359.
9. Mental Health Foundation. (2022). Supporting Youth Mental Health: Best Practices. London: Mental Health Foundation.
10. OECD. (2022). Education at a Glance 2022: OECD Indicators. Paris: OECD Publishing.
11. Putnam, R. D. (2000). Bowling Alone: The Collapse and Revival of American Community. New York: Simon & Schuster.
12. Smith, J. (2021). Youth Participation in Governance: Models and Outcomes. Governance Studies, 10(1), 50-67.
13. Smith, A., & Anderson, M. (2022). Youth Innovation in the Digital Age. Technology and Society, 14(2), 89-105.
14. Thunberg, G. (2019). No One Is Too Small to Make a Difference. Stockholm: Penguin Books.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

- 15.UNICEF. (2021). Youth and Political Participation. New York: UNICEF.
- 16.United Nations. (2023). World Population Prospects 2023. New York: UN Department of Economic and Social Affairs.
- 17.World Bank. (2023). Global Education Monitoring Report. Washington, DC: World Bank.



**THE HISTORY OF THE DEVELOPMENT OF TURKIC
LANGUAGES AND THE SPECIFIC FEATURES OF THEIR TEACHING**

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Abstract. The article presents the history and stages of the development of the Turkic languages, their historical development, information on learning the Turkic languages, and the specific features of teaching this language.

Key words: Turkic languages, Central Asia, Altai mountains, Orkhon-Yenisei inscriptions, Eastern, North-Eastern, South-Eastern, Western Turkic languages, ancient languages, Chuvash language, manuscript, source.

Turkic languages are a family of languages that are spread across the world and have a common root. They are spoken mainly in Central Asia, the Caucasus, Turkey, the Volga region, Siberia, China, and Eastern Europe. The Turkic language family has an ancient history, and the earliest written sources date back to the Old Turkic scripts and the Orkhon-Yenisei inscriptions. Turkic languages have similarities in phonetics, morphology, and syntax. For example, they use suffixes to create new forms and meanings of words. In addition, word order is usually based on the "possessive-interrogative-complementary" system. Currently, Turkic languages are spoken by approximately 170 million people as a native language, and another 200 million as a second language. The most widespread of these are Turkish, Uzbek, Kazakh, Kyrgyz, Tatar, Uyghur, and Azerbaijani. Turkic languages are also rich in culture, literature, and historical heritage. Their study plays an important role in understanding historical connections, ethnic associations, and cultural interaction (B.B. Abdushukurov, 2019, 132).

The origins of the Turkic languages date back to ancient times, mainly to the region of Central Asia and the Altai Mountains. According to linguistic and historical research, the Turkic languages are considered part of the Altai language family. This family includes Turkic, Mongolian, and Tungus-Manchu languages, although there are different scientific theories about this relationship (G. Akramov, 1997, 78-81).

The formation of the Turkic languages dates back to approximately the 3rd-2nd millennium BC. The ancient Turkic peoples were nomads, engaged in cattle breeding, and lived in vast territories. The initial form of their language was the same, but over time, differences began to emerge between different tribes and regions. The first written monuments of the Turkic languages are the Orkhan-Yenisei inscriptions dating back to the 6th-8th centuries AD. These monuments used the Old Turkic language, which is the main source for studying the structure, grammar and vocabulary of the language.

The spread of the Turkic languages occurred due to the nomadic life and military expansion of the ancient Turkic tribes. Through the Huns, Western Turks and other tribal unions, the Turkic languages reached Eastern Europe, the Caucasus, and Northern China.

The origin and development of the Turkic languages show that they are closely related not only to linguistic, but also to cultural, historical and political processes.

The Turkic languages are diverse and are divided into several linguistically related groups. The differentiation of these languages is mainly based on phonetic, morphological and lexical similarities. Below we will briefly touch on the main types and groups of Turkic languages:

Eastern Turkic languages.

This group originated from the ancient Uyghur language.

Main representatives: Uyghur language (spoken in the Xinjiang region of China)

Uzbek language (spread in Uzbekistan and neighboring countries. Their characteristics.

The sound system is partially influenced by Persian and Arabic languages.

Northeastern Turkic languages.

Main languages: Yakut language (spoken in Northern Siberia, Russia).

Tuvian language (spread in the Republic of Tyva, Russia).

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Features: Lexical influence of peoples in the cold climate region is observed. Southeastern Turkic languages (Karluk group).

Main languages: Uzbek language (has similarities with the Eastern Turkic languages). Uyghur language. This group was historically widespread in the Charkhitai and Transoxiana regions.

Western Turkic languages (Kipchog group).

Main languages: Kazakh language (in Kazakhstan and neighboring countries).

Kyrgyz language (Kyrgyzstan and Central Asian regions).

Tatar (Tatarstan region of Russia).

Bashkir (in the Republic of Bashkirie).

Southwestern Turkic languages (Oguz group).

Main languages: Turkish (in Turkey and some parts of Europe).

Azerbaijani (in Azerbaijan and Iran).

Turkmen (Turkmenistan and neighboring regions).

Chuvash language.

This language developed separately from other Turkic languages.

Distributed in the Chuvash Republic and the Volga region.

Historically, it is considered to have originated from the ancient Bulgarian language.

Manuscripts and ancient languages.

Old Turkic language (language of the Orkhon-Yenisei inscriptions).

Khorezmian Turkic language (language of written monuments in the Transoxiana region).

The historical development of Turkic languages goes back a long time and includes many stages. The formation and changes of these languages are mainly associated with historical, social, political and cultural factors. Although Turkic languages have retained their agglutinative structure from ancient times to the

present day, significant changes have been observed in their phonetics, lexicon and grammar (B.B. Abdushukurov, 2019, 132).

The ancient period (3rd century BC - 6th century AD) saw the formation and initial development of the Turkic languages.

The ancient Turkic peoples were nomads and communicated with each other through their own language.

During the Hun Empire, Turkic languages were widespread.

There are almost no written sources from this period, but information about the early forms of the language can be obtained through archaeological and linguistic research.

The ancient Turkic period (6th–10th centuries).

During this period, Turkic languages were recorded through written monuments.

The Orkhon-Yenisei Inscriptions: The first written sources written in the ancient Turkic language, dating back to the 8th century AD.

The Middle Turkic period (10th–16th centuries)

This period was a period of increased influence of Islamic culture in the territories of Transoxiana and Khorezm.

The number of words that entered the Turkic languages from Persian and Arabic increased significantly.

A large number of written works appeared, For example:

Mahmud Kashgari's "Devonu lug'otit-turk" - provides rich information about the vocabulary and grammar of Turkic languages.

Alisher Navoi's works - made a great contribution to the literary development of Turkic languages.

New Turkic era (17th-19th centuries).

During this period, Turkic languages developed in connection with the national formation of peoples. Turkic languages were used as official and communication languages of various states. National languages were formed on

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

the basis of local dialects: Uzbek, Kazakh, Kyrgyz, etc. Changes led to the formation of new literary languages. New words from Russian and other European languages were added to the language.

Modern era (20th century - present day).

In the 20th century, Turkic languages became an integral part of national statehood and cultural development. During this period, the Latin, Cyrillic and Arabic alphabets were used. Later, national languages were strengthened as state languages.

In the 20th century, the Turkic languages became linguistically and literarily richer. Formalized language rules were developed. New terms related to technology and science entered the language.

One of the largest regions of the Turkic languages. This area is considered the historical homeland of the Turkic peoples. Uzbekistan (Uzbek language), Kazakhstan (Kazakh language), Kyrgyzstan (Kyrgyz language), Turkmenistan (Turkmen language), some regions of Tajikistan (Uzbek language).

Some parts of Mongolia (Tuvinian language).

Another widespread part of the Turks is widespread in Asia Minor, the Near East and Eastern Europe. In Asia Minor, the Ogiz tribe of Turks is mainly widespread

In Eastern Europe, peoples belonging to the Kipchak group mainly live. Territories: Volga region of Russia (Tatar and Bashkir languages). Ukraine (Crimean Tatar language). Balkan regions (Turkic language) (G. Abdurakhmonov, A. Rustamov, 1982, 167).

Other subgroups of Turkic languages, such as Crimean Tatar, Bashkir, Khakass, and Chuvash, have relatively few speakers, but they have retained their cultural and linguistic significance.

Historical influences and reasons for spread The migration of nomadic Turkic tribes over vast territories from ancient times contributed greatly to the spread of languages.

Empires: Turkic languages have been the main language of communication of many states in history (for example, the Chigatai state, the Ottoman Empire).

Cultural influence: Literature, trade and religious teachings contributed to the widespread spread of Turkic languages.

Turkic languages are of great importance not only linguistically, but also in the preservation and dissemination of cultural heritage. These languages have played a key role in the historical, literary and cultural development of the Turkic peoples. The cultural significance of the Turkic languages is highlighted in various aspects below.

Preservation and development of literary heritage.

Ancient written sources.

One of the first written examples of Turkic languages is the Orkhan-Yenisei monuments, which reflect the cultural and social life of the ancient Turkic peoples.

For example; Inscriptions of Bilga Kokand and Kul Tegin.

In the Middle Ages, Turkic languages were the main means of creating a rich literary heritage.

Famous works: Mahmud Kashgari - "Devonu lug'otit-turk", Yusuf Khos Hajib - "Kutadgu bilig", Ahmad Yugnakiy - "Hibat ul-haqoyiq".

Chigatai language and Alisher Navoi.

Chigatai language served as a common literary language for Turkic peoples in the Middle Ages.

Alisher Navoi's work demonstrated the cultural and literary power of Turkic languages.

"Khamsa" is the pride of the Turkic world and expresses the cultural values of the people (G. Akramov, 1997, 78-81).

Currently, literature written in Uzbek, Turkish, Kazakh, Azerbaijani and other languages is a continuation of the cultural wealth of Turkic languages.

Turkic languages are the main means of understanding national identity and transmitting cultural heritage to generations. Turkic languages play an important

role in uniting peoples living in different regions and strengthening their common values. Language preserves the historical and cultural memory of the people.

The musical art of the Turkic peoples was a tool for creating folk songs, epics and songs in the Turkic languages. For example, the Uzbek epic "Alpomish". Kazakh songs and tales "Koroglu". Examples of oral creativity of each Turkic people (fairy tales, proverbs, riddles) are a rich cultural heritage.

Turkic languages have played an important role in spreading Islam and developing its rich culture. Translations of the Quran and hadiths were made in the languages of the Turkic peoples.

Turkic languages are actively used today in cinema, theater and art. Popular Turkish TV series and films introduce Turkic languages to the world. Turkic languages are being promoted globally through today's modern technologies, social networks and content on the Internet.

Turkic languages are recognized by UNESCO as an integral part of cultural heritage. Although some small Turkic languages are under threat, special programs are being developed for their preservation. Turkic languages are actively used today in many countries of the world as state languages, official languages or languages of regional communication. Their development is closely related to technology, globalization, cultural integration and national policies. Also, although some Turkic languages are at risk of extinction, many efforts are being made internationally for their preservation and development.

Unfortunately, many Turkic languages, especially the languages of small peoples, are weakening under the influence of dominant languages (Russian, Chinese, English). At the same time, new lexical units, technological terms and global communication opportunities are developing in some languages. Turkic languages are actively supported as national languages in the countries of Central Asia. Some countries are transitioning to the Latin script, while others are aiming to revive historical writing systems.

Through the Turkic Cooperation Organization (TCTO), Turkic languages are undergoing a process of unification. Interlinguistic integration is developing through international events, festivals, and scientific conferences. Organizations such as UNESCO are implementing special programs to preserve endangered languages among the Turkic languages.

Problems and difficulties are mainly the threat of assimilation. Minor languages are often under the threat of assimilation by dominant languages (Russian, Chinese). Another sad aspect is the decreasing interest of the younger generation. Among young people, there is an increasing interest in learning international languages rather than their native language. In conclusion, it should be said that Turkic languages are one of the oldest and most widespread languages in the world, and their development and history are inextricably linked with the culture, politics and social life of peoples. Turkic languages are distinguished among the languages of the world by their rich history, lexical and grammatical features, as well as cultural and scientific significance. Their current state, distribution area and future depend on various political, economic and cultural processes, and comprehensive approaches are needed to preserve and develop Turkic languages. In the future, Turkic languages can further develop in the global arena and become an important tool for uniting different peoples. Today, Turkic languages are spoken by approximately 200 million people, which further increases their importance in the international arena. This language is a source of pride for the Turkic peoples. The preservation and development of Turkic languages is a task of not only national, but also global importance.

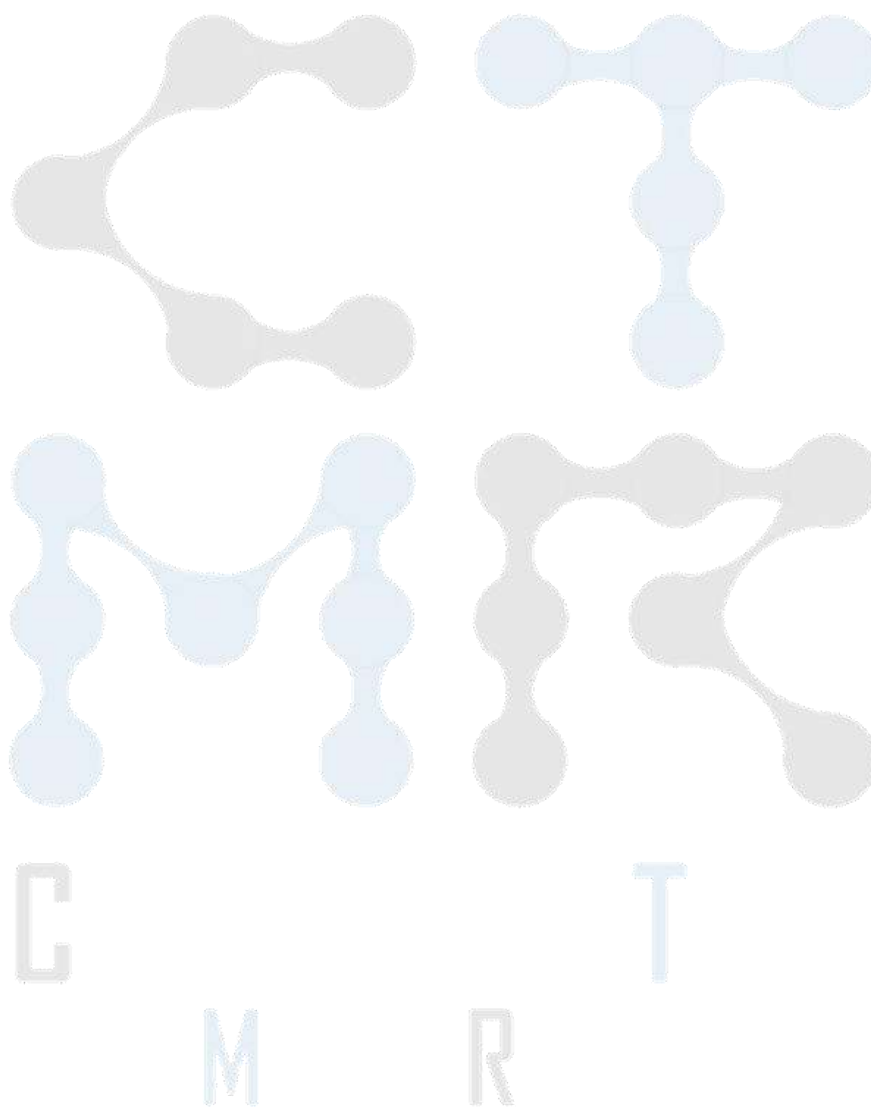
List of used literature

1. B.B. Abdushukurov. Ancient Turkic language. – T.: “Navoi University”, 2019.-132 p.
2. G. Abdurakhmonov, A. Rustamov. Ancient Turkic language. “O’qituvati”, 1982.-167 p.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

3. G. Akramov. Interpretation of mythological time and space in "Khamsa". – T.: Uzbek language and literature, – T.: 1997. 78-81.
4. N. Rakhmonov. Q. Sodikov. History of the Uzbek language. "Publishing House of the Scientific Society of Philosophers of Uzbekistan", 2009-226-p
5. Juraev, M., and Narzikulova, M. (2006) Myth. folklore, literature. (p. 183).



MORPHOLOGICAL CLASSIFICATION OF LANGUAGES

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Abstract

Morphological classification categorizes languages based on how words are formed and structured. This article explores the primary morphological types: isolating, agglutinative, fusional, and polysynthetic languages. By analyzing the morphological structures, this study highlights the linguistic mechanisms that contribute to the diversity of language construction across cultures.

Keywords:

Morphology, morphological classification, isolating languages, agglutinative languages, fusional languages, polysynthetic languages, linguistic typology, word structure, language diversity, grammatical relationships, language evolution.

Introduction

Morphology, the study of word structure, is a core aspect of linguistic typology. Languages differ significantly in how they form words and convey grammatical relationships, leading to their classification into morphological types. This classification helps linguists understand the structural characteristics and evolution of languages, providing insights into the cognitive and cultural factors influencing language development.

Morphological Types of Languages

1. Isolating Languages

Isolating languages, also known as analytic languages, have a low morpheme-to-word ratio. Words are generally monomorphemic, with grammatical relationships expressed through word order and auxiliary words rather than inflection or derivation.

Examples: Chinese, Vietnamese.

Characteristics:

No inflectional morphology.

Heavy reliance on syntax and word order.

Words remain invariant in form.

2. Agglutinative Languages

Agglutinative languages use affixes to attach to a root word, with each affix typically representing a single grammatical function. The morphemes are clearly separable and retain their individual meanings.

Examples: Turkish, Uzbek, Finnish.

Characteristics:

Regular affixation rules.

Transparent morpheme boundaries.

High morpheme-to-word ratio.

3. Fusional Languages

In fusional languages, a single affix may encode multiple grammatical functions, such as tense, case, and gender. This fusion of functions often results in complex inflectional paradigms.

Examples: Russian, Spanish, Sanskrit.

Characteristics:

Morphemes are less separable.

Irregularity in inflectional patterns.

High reliance on grammatical endings.

4. Polysynthetic Languages

Polysynthetic languages exhibit extremely complex word structures, often combining multiple morphemes into a single word to express entire sentences or complex ideas.

Examples: Inuit, Mohawk.

Characteristics:

Words as "sentences."

Extensive use of affixation and compounding.

Incorporation of noun and verb elements within a single word.

Intermediate and Mixed Types

While the above categories represent idealized classifications, many languages exhibit features of multiple types. For instance, English, primarily an analytic language, retains remnants of fusional morphology (e.g., verb conjugations like *goes* or *went*). Such intermediate cases challenge the rigid categorization and underscore the dynamic nature of linguistic evolution.

Factors Influencing Morphological Typology

Several factors contribute to the morphological characteristics of a language:

Historical Evolution: Language contact, borrowing, and internal changes affect morphological structures.

Cultural Practices: Polysynthetic languages, for instance, often arise in communities where succinct communication is crucial.

Cognitive Efficiency: Morphological structures may adapt for ease of learning and usage.

Applications of Morphological Classification

Linguistic Reconstruction: Understanding morphological types aids in tracing linguistic ancestries.

Language Learning: Morphological typology provides pedagogical insights into teaching grammar effectively.

Artificial Intelligence: Morphological analysis informs natural language processing (NLP) systems in handling diverse language structures.

Conclusion

Morphological classification reveals the diversity of linguistic expression and structure across the world. While the four primary types provide a useful framework, the fluidity and adaptability of languages often blur these boundaries. Continued research into morphology enriches our understanding of human language as a dynamic and evolving system.

References

1. Comrie B. (1981). Language Universals and Linguistic Typology. Chicago: University of Chicago Press.
2. Greenberg J. H. (1963). Universals of Language. MIT Press.
3. Haspelmath M. (2002). Understanding Morphology. Oxford: Oxford University Press.
4. Sapir E. (1921). Language: An Introduction to the Study of Speech. Harcourt, Brace.
5. Shopen T. (Ed.). (2007). Language Typology and Syntactic Description. Cambridge University Press.

**THE HISTORY OF THE DEVELOPMENT OF CALLIGRAPHY AND
THE SPECIFIC FEATURES OF WRITING IT**

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Abstract:

Calligraphy, the art of beautiful writing, has evolved through centuries, reflecting the cultural, spiritual, and aesthetic values of societies worldwide. This article traces the historical development of calligraphy across major civilizations, including its origins, stylistic evolution, and tools. Furthermore, it delves into the specific techniques and features that distinguish calligraphy from other forms of writing, emphasizing its artistic, disciplined, and meditative qualities.

Keywords: Calligraphy, history of writing, artistic expression, writing systems, ancient scripts, tools and techniques, cultural heritage, Chinese calligraphy, Islamic calligraphy, illuminated manuscripts, typography, meditative art, line thickness, rhythm in writing, calligraphic styles, modern calligraphy trends.

Introduction

Calligraphy has always been more than just a means of communication; it embodies the beauty, precision, and rhythm of writing. Originating from the Greek word "kallos" (beauty) and "graphein" (to write), calligraphy transcends functionality, becoming an expressive and spiritual art form. This article explores the historical trajectory of calligraphy and its defining features, offering insights into its timeless appeal and relevance.

Historical Development of Calligraphy

1. Ancient Origins

The roots of calligraphy can be traced to ancient civilizations where writing systems began to emerge:

Mesopotamia and Egypt: The Sumerians' cuneiform script and the Egyptians' hieroglyphics were among the earliest forms of written expression. These scripts were inscribed on clay tablets and papyrus, serving administrative, religious, and artistic purposes.

China: The development of Chinese calligraphy began during the Shang Dynasty (c. 1600–1046 BCE) with oracle bone inscriptions. Over centuries, it evolved into a revered art form, incorporating styles such as Seal Script, Clerical Script, and the flowing Cursive Script.

2. The Classical Period

Greece and Rome: Greek and Roman calligraphy developed from the Phoenician alphabet. Roman capitals, such as the Trajan inscriptions, became iconic for their geometric precision and enduring aesthetic influence.

Islamic Calligraphy: Islamic civilization embraced calligraphy as a sacred art. Arabic scripts, including Kufic and Naskh, were used to transcribe the Quran. Artists infused the scripts with intricate patterns and spiritual depth.

3. Medieval and Renaissance Calligraphy

European Calligraphy: During the medieval period, illuminated manuscripts were created in monasteries, combining calligraphy with decorative elements. Scripts like Carolingian Minuscule and Gothic Blackletter reflected the changing tastes of the era.

East Asian Calligraphy: In Japan and Korea, calligraphy became intertwined with Zen philosophy, emphasizing the harmony of mind, body, and brush.

4. Modern and Contemporary Trends

With the invention of printing, the functional necessity of calligraphy diminished, but its artistic value endured. In the modern era, calligraphy has experienced a revival as an art form, blending traditional methods with contemporary styles.

Specific Features of Writing Calligraphy

1. Tools and Materials

Writing Instruments: Brushes, quills, dip pens, and modern fountain pens are tailored for various calligraphic styles.

Surfaces: Parchment, vellum, rice paper, and high-quality papers are preferred for their smoothness and ink absorption.

Ink: Traditional inks, such as sumi ink in East Asia or iron gall ink in Europe, enhance the visual and textural quality of calligraphy.

2. Techniques and Styles

Rhythm and Flow: Calligraphy requires a steady hand and controlled movement to achieve fluid, harmonious lines.

Proportions and Geometry: Letters are crafted with precise proportions and symmetry, reflecting the script's inherent structure.

Variations in Line Thickness: By adjusting pressure, calligraphers create dynamic contrasts that add depth and elegance.

3. Artistic and Meditative Aspects

Calligraphy is not only an artistic pursuit but also a meditative practice. It demands focus, patience, and discipline, fostering a connection between the artist and their work.

Conclusion

Calligraphy stands as a testament to humanity's quest for beauty and expression through written forms. Its evolution across cultures underscores its universal appeal and adaptability. In the digital age, calligraphy continues to inspire as an art that marries tradition with innovation, maintaining its place as a symbol of timeless elegance.

References

1. Brown M. (2008). *The Art of Calligraphy: A Practical Guide*. Harper Design.
2. Smith R. (2015). *Sacred Scripts: A History of Religious Calligraphy*. Cambridge University Press.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

3. Tseng Y. (2019). Chinese Calligraphy: A Cultural and Artistic Tradition. Beijing Art Press.
4. Khan A. (2020). Islamic Calligraphy Through the Ages. Oxford Islamic Studies.
5. Harrison S. (2022). Modern Calligraphy Techniques and Tools. Creative Pen Publishing.



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Анотация. Продолжающиеся глобальные экономические кризисы, переход на цифровые технологии, последние достижения в области технологий и все более широкое использование искусственного интеллекта в банковской сфере постоянно привлекают внимание к управлению кредитными рисками. В результате регулирующие органы продолжают требовать прозрачности и других улучшенных возможностей в этой области. Они хотят знать, что банки хорошо осведомлены о клиентах и связанных с ними кредитных рисках. И по мере развития Базельского законодательства банки столкнутся с еще большим бременем регулирования.

Ключевые слова; депозиты, финансовые обязательства, прибыль, риск, Банковская кредитная политика

Большая часть прибыльности банка определяется принятием на себя кредитного риска. Банки принимают депозиты и другие финансовые обязательства, которые они используют для предоставления кредитов и покупки долговых ценных бумаг с целью получения дохода, превышающего их финансовые и накладные расходы, и приносящего чистую прибыль. Способность банков выявлять, измерять, оценивать, отслеживать, контролировать и определять цену кредитного риска имеет решающее значение для достижения их стратегических целей и максимизации финансовых показателей безопасным и обоснованным образом. Среди многих опытных банковских контролеров есть поговорка о том, что “плохие кредиты выдаются в хорошие времена”. Этот принцип отражает их профессиональный опыт, заключающийся в том, что банки склонны смягчать стандарты андеррайтинга, условия кредитования и ценообразование в течение длительных периодов благоприятных экономических условий.

Руководство банка часто оправдывает более мягкие стандарты андеррайтинга кредитов и ценообразования, утверждая, что они необходимы для соответствия действиям конкурентов с целью удержания кредитных клиентов, расширения бизнеса или достижения краткосрочных целей. В годы, предшествовавшие Великому финансовому кризису 2007-2008 годов (далее “Кризис”), экономика казалась стабильной. Это привело к тому, что некоторые кредиторы пошли на больший риск, что позволило распространить менее строгие методы управления банковскими кредитными рисками. Стандарты банковского кредитного андеррайтинга -

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

особенно оценка платежеспособности заемщика и оценка залогового обеспечения – стали более мягкими.

На многих отечественных рынках недвижимости образовался значительный ценовой пузырь. Некоторые схемы компенсации банкиров стали привязаны к ненадлежащим стимулам, таким как рост кредитного портфеля, что привело к неосмотрительным стратегиям кредитования, таким как низкокачественные жилищные кредиты, ипотечное кредитование под залог собственного капитала и ипотечное кредитование “без документов и с низким уровнем документов”. “Хорошие времена”, отчасти подпитываемые этими рискованными кредитными продуктами, внезапно закончились, когда на рынках жилой недвижимости началось резкое снижение цен, в некоторых случаях на 30-40% от пиковых значений. К сожалению, когда экономическая активность в конечном итоге снижается или возникают кризисные явления, банки, применяющие более рискованную практику кредитования, часто сталкиваются с резким ростом просрочек по кредитам, дефолтов, реструктуризаций, взысканий и убытков. Постфактум риски, связанные с небрежной практикой банковского кредитования, которая привела к неблагоприятным последствиям, могут показаться очевидными. Однако многие посмертные анализы недавних банковских кризисов выявили “красные флажки” кредитования и риски, которые были очевидны до кризиса, но которые были либо недооценены, либо отвергнуты, либо не признаны.

Цель этой статьи :дать обзор элементов эффективного управления кредитными рисками банка, особенно в том, что касается коммерческого кредитования, поскольку эта категория кредитования обычно представляет наибольший риск. В статье также рассматриваются некоторые примеры “красных флажков” или обстоятельств, которые должны быть тщательно изучены органами банковского надзора, поскольку они могут указывать на ситуации, которые могут привести к чрезмерному риску или проблемам. 2. Инфраструктура контроля кредитного риска
Базельские основные принципы эффективного надзора The Базельский комитет по банковскому надзору (“BCBS”) является международным органом, устанавливающим стандарты для банковской отрасли. BCBS определила основные предпосылки и стандарты, необходимые для создания эффективного надзорного режима, в своих “Основных принципах эффективного надзора” (“BCP”). Последняя версия BCP была опубликована в сентябре 2021 года и содержит 29 принципов. Принципы 17, 18 и 19 касаются управления кредитным риском: “Принцип 17 – Кредитный риск: Надзорный орган определяет, что банки имеют адекватный процесс управления кредитным риском, который учитывает их склонность к риску, профиль риска, а также рыночные и макроэкономические условия. Это включает в себя разумную

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

политику и процессы для своевременного выявления, измерения, оценки, мониторинга, представления отчетов и контроля или снижения кредитного риска (включая кредитный риск контрагента). Охватывается полный жизненный цикл кредита, включая кредитный андеррайтинг, оценку кредитоспособности и текущее управление кредитным и инвестиционным портфелями банка. Принцип 18 – Проблемные активы, провизии и резервы: Надзорный орган определяет, что банки имеют адекватную политику и процессы для раннего выявления проблемных активов и управления ими, а также поддержания адекватных провизий и резервов. Принцип 19 – Риск концентрации и высокие лимиты воздействия: Надзорный орган определяет, что банки имеют адекватную политику и процессы для своевременного выявления, измерения, оценки, мониторинга, отчетности и контроля или снижения концентрации риска. Органы надзора устанавливают пруденциальные лимиты для ограничения рисков банка по отдельным контрагентам или группам связанных контрагентов”.¹ Элементы эффективного контроля кредитного риска

Эффективный контроль кредитного риска - это процесс сдержек и противовесов, который включает:

- Определение ролей и обязанностей советов директоров банков и высшего исполнительного руководства;
- Структуры и процессы комитетов Совета директоров для эффективного надзора за рисками;
- Определение стратегии банка в области управления рисками и создание надежной культуры управления кредитным риском;
- Создание соответствующих кредитных органов для отдельных лиц и комитетов;
- Разработку всеобъемлющей кредитной политики и процедур и отчетности об исключительных случаях; и
- Создание независимого процесса проверки кредитоспособности.

Органы банковского надзора должны требовать, чтобы банки имели эффективную систему для выявления, измерения, мониторинга и контроля кредитного риска в рамках общего подхода к управлению рисками. Они должны провести независимую оценку стратегий, политики, процедур и практики банка, связанных с предоставлением кредита и текущим управлением портфелем. Банковская кредитная политика

Банкам следует разработать письменную кредитную политику и связанные с ней операционные процедуры для руководства банковским персоналом в надлежащем управлении процессом предоставления кредита с целью обеспечения соответствия кредитных рисков пруденциальным стандартам и внутренним лимитам. Политика должна ежегодно пересматриваться и утверждаться правлением и обновляться по мере необходимости, чтобы обеспечить ее неизменную актуальность. Разрешения, необходимые для исключений из политики, также известных как переопределения политики, должны строго контролироваться с использованием механизма вторичной проверки и отчетности перед высшим исполнительным руководством и, возможно, правлением. Частые отмены - это “красный

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

флаг”, который может указывать на то, что отменяемые положения кредитной политики либо устарели, либо существует вероятность того, что отказы от политики могут не иметь надлежащего обоснования. Создавая надежную культуру управления кредитными рисками, во время кризиса банки, работающие в одной и той же торговой сфере, получили существенно разные результаты. Некоторые пережили кризис относительно невредимыми, в то время как другие понесли значительные убытки, а в некоторых случаях потерпели неудачу. Каковы были причины разницы в показателях? На мой взгляд, это в значительной степени связано с различиями в качестве управления кредитными рисками в банках и особенно с их культурой управления рисками. Что подразумевается под “культурой управления рисками”? Культура управления рисками включает следующие соображения: • Активно ли совет директоров банка осуществляет надзор за исполнительным управлением и служит эффективным сдерживающим фактором для принятия чрезмерных рисков? • Формулирует ли правление четко и формально толерантность банка к риску, подкрепленную механизмами стимулирования? • Усиливают ли действия высшего руководства банка и “тон сверху” заявленную склонность к риску? • Позволяют ли системы управления рисками банка, механизмы контроля и управления исполнительному руководству банка и совету директоров эффективно измерять, отслеживать и контролировать риски, приближенные к “реальному времени”? • Осведомлено ли правление банка об изменении внешних факторов, которые могут повлиять на склонность к риску и показатели кредитного портфеля? • Имеют ли лица, участвующие в предоставлении кредита, четкое представление о том, какие кредитные риски приемлемы в банке и какие кредитные предложения, вероятно, будут проблематичными? Независимая проверка кредитоспособности

Возможность точного мониторинга качества кредитного портфеля необходима для получения надежных данных, которые позволяют совету директоров банка и высшему исполнительному руководству на постоянной основе знать уровень и тенденции общего кредитного риска. Процесс рассмотрения кредита должен проводиться экспертами, независимыми от кредитной функции банка, чтобы предотвратить конфликт интересов и обеспечить объективность. 3. Потенциальные источники чрезмерного кредитного риска или нерациональной практики кредитования, чрезмерный акцент на стоимости обеспечения при принятии решений об андеррайтинге кредита

Существует несколько способов погашения большинства коммерческих кредитов: • Денежный поток, генерируемый бизнесом заемщика и / или заложенным обеспечением; • Продажа обеспечения в обеспечение кредита; или • Рефинансирование кредита у другого кредитора. Типичным источником погашения коммерческого кредита является денежный поток, генерируемый бизнесом заемщика. Не вдаваясь слишком глубоко в технические детали, кредиторы анализируют исторические

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

показатели бизнеса и делают предположения о будущем устойчивом денежном потоке. Денежный поток рассчитывается путем добавления неденежных расходов, таких как износ и амортизационные отчисления, к чистому доходу. Решения об андеррайтинге кредита должны основываться на аналитически подтвержденном определении того, что заемщик может продолжать генерировать достаточную прибыльность и денежный поток для своевременной выплаты основной суммы долга и процентов. Политика кредитования может предусматривать требования к минимальному денежному потоку сверх требуемых выплат основной суммы долга и процентов, и может официально требовать этого, устанавливая эти требования в кредитных договорах (эти требования называются кредитными ковенантами). Несоблюдение условий по кредиту обычно является событием невозврата кредита. Кредиторы должны тщательно оценить стоимость любого обеспечения, заложенного для обеспечения кредита. В случае неисполнения обязательств по кредиту, которые заемщик не может устранить, кредитору может потребоваться обратиться взыскание на обеспечение и продать его, используя выручку от продажи для погашения любой непогашенной основной суммы кредита и процентов. Часто коммерческие кредиты сопровождаются обеспечением недвижимостью, такой как офисное здание или коммерческие помещения, или оборудованием, используемым в бизнесе заемщика. Банковские правила обычно требуют, чтобы оценка обеспечения по кредитам подтверждалась независимыми оценками, проводимыми дипломированными профессионалами, такими как сертифицированные оценщики недвижимости. Меморандумы о предоставлении кредита (которые содержат внутренний анализ банка, подтверждающий предложение о предоставлении кредита) должны тщательно документировать анализ допущений оценки и методик расчетов, чтобы подтвердить достоверность предполагаемой стоимости обеспечения. Кредитные проблемы иногда возникают, когда кредиторы отходят от подхода к андеррайтингу кредитов, который учитывает как платежеспособность заемщика, так и защиту обеспечения, и придает непропорционально большое значение стоимости обеспечения для принятия решений о кредитовании. Этот риск особенно распространен в периоды устойчивого роста стоимости коммерческой недвижимости. Банкиры иногда предполагают, что стоимость обеспечения будет продолжать расти, игнорируя риск того, что рынки цикличны и что стоимость обеспечения может значительно снизиться в условиях нестабильного рынка. Использование ошибочных или чрезмерно оптимистичных допущений при оценке обеспечения может привести к возникновению ненадежных оценок обеспечения. Для многих объектов коммерческой недвижимости оценщики прогнозируют будущие денежные потоки и вычисляют чистую приведенную стоимость с использованием соответствующей ставки дисконтирования. Любые неточности в исходных данных для

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

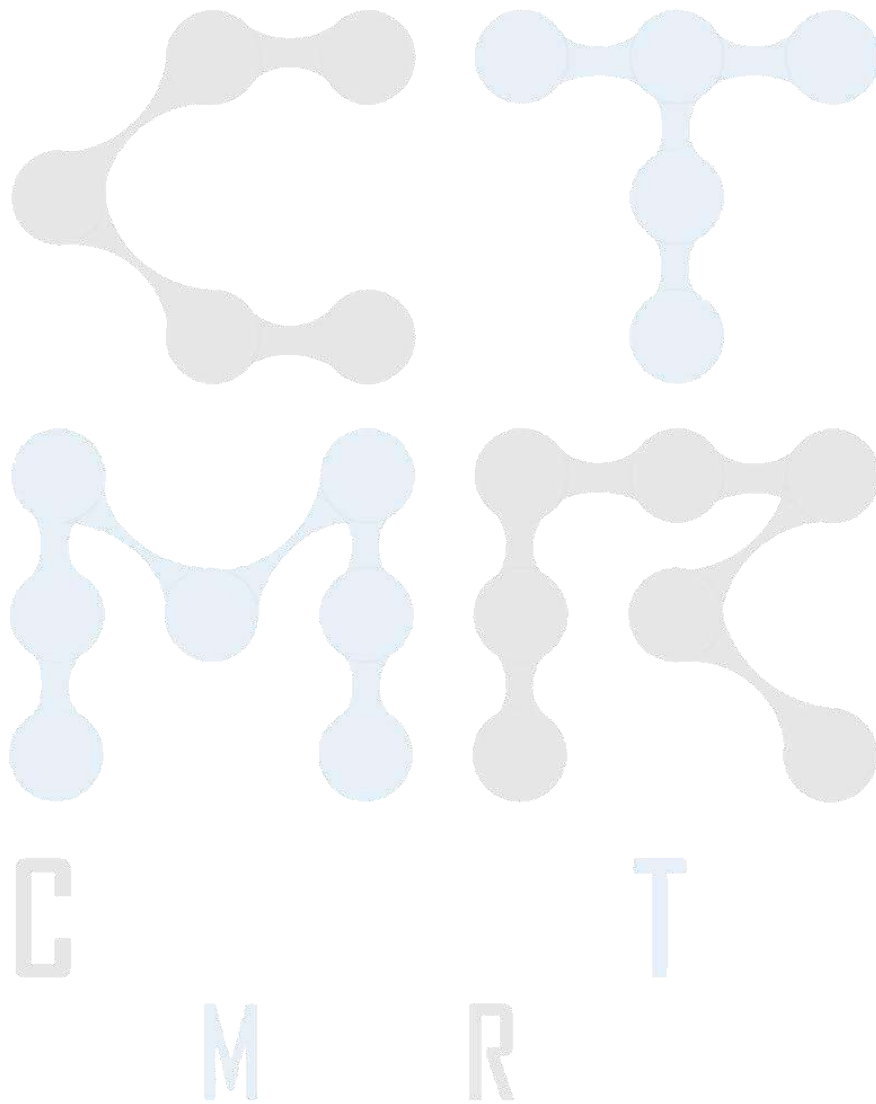
расчетов, такие как выбранная ставка дисконтирования (которую оценщик должен обосновать), могут существенно подорвать надежность оценки и привести к необоснованным решениям о кредитовании. Существуют некоторые методы кредитования, которые могут иметь намеренный или непреднамеренный эффект маскировки потенциальных проблем с кредитами. Например, необеспеченный срочный заем на один год с выплатой основной суммы и процентов по истечении срока погашения становится подлежащим оплате. Заемщик не может выплатить основную сумму долга и причитающиеся проценты. Чтобы избежать сообщения о просрочке кредита, кредитный инспектор продлевает кредит еще на один год, выплачивая проценты, причитающиеся по первоначальному кредиту, путем добавления их к основному остатку по новому кредиту. В зависимости от обстоятельств, такая практика может не вызывать возражений, если есть финансово устойчивый заемщик, который для удобства добивается продления. Однако в случае, когда заемщик не может заплатить, продление является проблематичным. Разновидностью этой ситуации является предоставление отдельных займов для выплаты процентов. Быстрый рост Во времена бума некоторые банки приступают к быстрому расширению своих кредитных портфелей. Это может привести к проблемам, если объем деятельности превышает возможности сотрудников банка поддерживать надлежащий контроль качества, что часто имеет место. Оценка кредитного риска в дочерних банках финансовых конгломератов Крупные банковские конгломераты могут централизовать определенные функции по андеррайтингу кредитов и контролю рисков у материнской компании или другого аффилированного лица. Материнская компания может ожидать, что члены правления Банка одобряют покупку долей в крупных синдицированных кредитных программах, выданных дочерними банками. Такие механизмы "аутсорсинга" не освобождают правление и высшее исполнительное руководство от осуществления независимого контроля над функцией кредитования учреждения и ответственности за надежные результаты. 4. Заключительные замечания По Азиатско-Тихоокеанский регион, хотя и пострадал от кризиса, избежал крупного трансграничного банковского кризиса с 1997-1998 годов. Сохранение этого статуса в значительной степени зависит от поддержания надлежащей практики кредитования. Надеемся, что приведенный выше комментарий дает некоторое представление об особенностях эффективного управления кредитными рисками, а также о некоторых конкретных методах кредитования, которые могут привести к трудностям.

Список использованных источников:

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

1. Базельский комитет по банковскому надзору. 2012. Основные принципы Эффективного банковского надзора. Базель, Швейцария: Банк международных расчетов, стр. 11-12, доступно по адресу www.bis.org/publ/bcbs230.htm
2. Информационные системы и технологии в экономике и управлении / Под ред. В. В. Трофимова, Москва: Юрайт, 2018, 284 с.



THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

MILITARY PSYCHOLOGY: THE IMPORTANCE OF STRENGTHENING MENTAL RESILIENCE

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Abstract: This article explores the concept of military psychology, focusing on the importance of strengthening mental resilience among soldiers. Mental resilience plays a crucial role in the military, where soldiers are constantly exposed to high-stress environments, combat situations, and demanding physical and psychological challenges. The ability to maintain psychological stability and cope with these challenges effectively is essential for ensuring both individual performance and overall mission success. This paper discusses the factors influencing mental resilience, the methods used to develop it, and the impact it has on soldiers' well-being and operationAal effectiveness.

Keywords: Military psychology, mental resilience, stress management, psychological stability, soldier well-being, combat stress, resilience training.

HARBIY PSIXOLOGIYA: RUHIY BARQARORLIKNI MUSTAHKAMLASHNING AHAMIYATI

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JAMOAT XAVFSIZLIGI UNIVERSITETI

"O'Q OTISH TAYYORGARLIGI" KAFEDRASI O'QITUVCHISI

Annotatsiya: Ushbu maqola harbiy psixologiya va uning ahamiyatini, ayniqsa, harbiy xizmatchilarda ruhiy barqarorlikni mustahkamlashning roli haqida so'z yuritadi. Ruhiy barqarorlik, harbiy xizmatchilarning yuqori stressli sharoitlarda, jangovar holatlarda va jismoniy hamda psixologik qiyinchiliklarga duch kelishdagi psixologik barqarorlikni saqlab qolish qobiliyatidir. Ushbu maqola, ruhiy barqarorlikni mustahkamlashda ta'sir etuvchi omillarni, uni rivojlantirish usullarini va uning harbiy xizmatchilarning sog'lig'iga va operatsion samaradorligiga ta'sirini o'rganadi.

Kalit so'zlar: Harbiy psixologiya, ruhiy barqarorlik, stressni boshqarish, psixologik barqarorlik, harbiy sog'liq, jangovar stress, barqarorlikni o'qitish.

ВОЕННАЯ ПСИХОЛОГИЯ: ВАЖНОСТЬ УКРЕПЛЕНИЯ ПСИХИЧЕСКОЙ УСТОЙЧИВОСТИ

ЭРГАШЕВ ХАСАНБОЙ АКБАРОВИЧ

РЕСПУБЛИКА УЗБЕКИСТАН

Аннотация: Данная статья посвящена военной психологии и ее значению, особенно важности укрепления психической устойчивости среди военнослужащих. Психологическая устойчивость — это способность сохранять психологическую стабильность и справляться с высокими уровнями стресса, боевыми ситуациями и физическими и психологическими трудностями. В статье рассматриваются факторы, влияющие на развитие психической устойчивости, методы ее укрепления и влияние на здоровье и оперативную эффективность военнослужащих.

Ключевые слова: Военная психология, психологическая устойчивость, управление стрессом, психологическая стабильность, военное здоровье, боевой стресс, тренировка устойчивости.

Introduction

Military psychology is a specialized field that addresses the mental and emotional challenges faced by soldiers in the line of duty. It focuses on understanding the psychological factors that affect soldiers' performance, decision-making, and overall well-being. One of the most critical aspects of military psychology is mental resilience, which refers to the ability to withstand and recover from stressful, traumatic, or adverse situations. Given the nature of military service, where soldiers often face life-threatening situations, extreme physical demands, and high-pressure environments, developing and maintaining mental resilience is essential for both individual and collective success.

In recent years, the importance of mental resilience in military personnel has gained significant attention. Psychological resilience allows soldiers to manage stress, maintain focus, and recover from traumatic events, which are common in combat and operational settings. As military forces are deployed in increasingly complex and unpredictable environments, the ability to withstand and overcome mental challenges becomes a key factor in ensuring mission success and maintaining a high level of operational readiness.

Relevance of the topic

The concept of mental resilience has gained significant importance in the field of military psychology, especially in light of modern warfare's increasing complexity and the psychological challenges faced by soldiers. In high-stress military environments, soldiers are exposed to extreme conditions, which may include combat situations, long deployments, and the physical and emotional strain of the profession. In these conditions, mental resilience—the ability to effectively manage stress, adapt to adversity, and recover from traumatic events—is crucial for maintaining soldiers' well-being and ensuring operational effectiveness.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

The relevance of this topic is further highlighted by the rising recognition of mental health challenges within the military, including post-traumatic stress disorder (PTSD), anxiety, and depression. Strengthening mental resilience is not only vital for the individual soldier's performance but also for the overall success of military missions and the health of military organizations. As military forces are deployed in increasingly unpredictable and volatile environments, the ability to build and maintain mental resilience is paramount.

Therefore, exploring the importance of mental resilience in military psychology is essential for developing strategies to enhance the psychological readiness of soldiers, ensuring that they are better equipped to handle the stresses of combat and military life. This research will help contribute to the development of effective mental health support systems, resilience training programs, and overall improvements in soldier well-being and mission success.

Factors influencing mental resilience in soldiers

Several factors contribute to the development of mental resilience in military personnel. These factors can be broadly categorized into individual, social, and organizational influences.

Individual factors: Soldiers with strong personal characteristics, such as self-confidence, optimism, and emotional regulation, are more likely to develop resilience. Cognitive flexibility, the ability to adapt to changing circumstances, and effective coping strategies also play a vital role in resilience. Additionally, physical fitness and overall health contribute to mental toughness, as physical endurance can help soldiers manage stress and maintain high levels of performance.

Social support: Social connections, both within the military unit and with family members, play a crucial role in maintaining mental resilience. Supportive relationships provide emotional stability and reduce feelings of isolation, which can exacerbate stress. Team cohesion, mutual trust, and camaraderie are essential in fostering an environment where soldiers feel supported and can rely on each other during challenging situations.

Training and preparation: Resilience training programs are increasingly being implemented in military organizations to help soldiers cope with stress and adversity. These programs include techniques such as mindfulness, stress management, and cognitive-behavioral strategies aimed at improving mental toughness and emotional regulation. Proper training in managing combat stress and preparing soldiers for high-stress situations can significantly improve their ability to withstand the pressures of military service.

Methods for strengthening mental resilience

Several approaches can be used to enhance mental resilience among soldiers. These include:

Resilience training programs: Military organizations are increasingly focusing on the development of resilience through structured training programs. These programs teach soldiers to manage stress,

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

build emotional intelligence, and develop coping mechanisms for dealing with traumatic experiences. By incorporating mindfulness techniques, breathing exercises, and psychological skills training, soldiers can develop the mental tools needed to remain calm and focused in high-stress situations.

Peer support and mentorship: Peer support programs, where soldiers are paired with mentors or supported by fellow soldiers, provide an essential source of emotional strength. These programs help to reduce the stigma surrounding mental health issues and encourage open communication about psychological challenges. Peer support fosters a sense of community and helps soldiers develop coping strategies by sharing experiences and advice.

Post-combat psychological support: Post-deployment mental health support is critical for soldiers returning from combat zones. Programs focused on reintegration, psychological debriefing, and trauma counseling help soldiers process their experiences and prevent the development of long-term psychological issues, such as post-traumatic stress disorder (PTSD). Timely intervention and continuous support after deployment are vital for maintaining soldiers' mental health and well-being.

Physical fitness and mental health: Physical fitness plays a significant role in enhancing mental resilience. Regular exercise has been shown to improve mood, reduce stress, and enhance cognitive function. Military organizations often emphasize physical fitness not only as a means of maintaining operational readiness but also as a tool for fostering psychological resilience. Soldiers who are physically fit tend to cope better with stress and exhibit greater mental toughness during challenging situations.

The impact of mental resilience on operational effectiveness

The ability of soldiers to maintain mental resilience has a direct impact on their operational effectiveness. Soldiers who are mentally resilient are better equipped to handle the challenges of military life, including long deployments, combat stress, and difficult working conditions. They are more likely to stay focused on their mission objectives, make sound decisions under pressure, and maintain high levels of performance despite adversity.

Moreover, mental resilience contributes to a positive organizational culture within the military. Units with resilient soldiers are more cohesive, exhibit higher morale, and demonstrate greater levels of trust and cooperation. This, in turn, enhances the overall effectiveness of military operations and increases the likelihood of mission success.

Conclusion

Mental resilience is a fundamental aspect of military psychology and plays a vital role in ensuring that soldiers can perform effectively in high-stress, high-risk environments. By understanding the

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

factors that contribute to mental resilience and implementing effective training and support systems, military organizations can enhance the psychological well-being of their personnel. This not only improves individual performance but also strengthens the overall operational readiness of the armed forces. As military engagements become more complex and unpredictable, strengthening mental resilience will remain a key strategy in maintaining a highly effective, resilient fighting force.

References

1. Reivich, K., & Shatte, A. (2002). *The Resilience Factor: 7 Keys to Finding Your Inner Strength and Overcoming Life's Hurdles*. Broadway Books.
2. Cohen, S., & Wills, T. A. (1985). Stress, Social Support, and the Buffering Hypothesis. *Psychological Bulletin*, 98(2), 310-357.
3. Hobfoll, S. E. (2002). Social and Psychological Resources and Adaptation. *Review of General Psychology*, 6(4), 307-324.
4. Vogt, D., et al. (2013). A Cluster-Randomized Controlled Trial of a Peer Support Intervention for Veterans. *Psychological Services*, 10(3), 322-329.
5. Bartone, P. T., et al. (2008).
6. Psychological Hardiness Predicts Success in U.S. Army Special Forces Candidates. *International Journal of Stress Management*, 15(3), 247-260.

C M R T

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

ОПРЕДЕЛЕНИЯ ШИРИНА ЗАПРЕЩЕННЫЙ ЗОНЫ ГЕРМАНИЯ.

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DEFINITIONS WIDTH OF PROHIBITED ZONES GERMANY.

SUMMARY

Knowledge of the parameters characterizing any diodes or diode structures, and knowledge of the method of their analysis is one of the most important issues in semiconductor electronics, radio electronics, and telecommunications. The study of the causes of uneven current flow and its negative impact on performance in the production of semiconductor devices and the study of methods for solving them is one of the main problems of semiconductor electronics and is an urgent problem at the present time. The band gap of semiconductors has been calculated by several scientists, but differences in their values exist to within a few hundredths of an accuracy. In this article, the semiconductor structure of Ge was taken as an object of study and the band gap of germanium was determined. We determined the voltage drop across an undoped Ge crystal depending on temperature when a constant current passes through the crystal, calculated the conductivity, and determined the band gap E_g of germanium.

Аннотация

Знание параметров, характеризующих любые диоды или диодные структуры, и владение информацией о методе их анализа является одним из важнейших вопросов в полупроводниковой электронике, радиоэлектронике, телекоммуникациях. Исследование причин неравномерности протекания тока и его отрицательного влияния на работоспособность, в производстве полупроводниковых приборов и исследование методов их решения является одной из основных проблем полупроводниковой электроники и является актуальной проблемой в настоящее время. Ширина запрещенной зоны полупроводников рассчитывалась несколькими учеными, однако различия в их значениях существуют с точностью до нескольких сотых долей точности. В данной статье в качестве объекта исследования была взята полупроводниковая структура Ge и определена величина

запрещенной зоны германия. Определили падения напряжения на нелегированном кристалле Ge в зависимости от температуры при прохождении тока через кристалл постоянен, расчет проводимости и определили ширины запрещенной зоны E_g германия.

Key words: ширина запрещенной зона, энергетические уровни, подвижность, эффективная плотность состояния зоны проводимости, плотность тока.

Ключевые слова: forbidden band width, energy levels, mobility, effective density of state of the conduction band, current density.

1. Введение.

В настоящее время полупроводниковые диоды используются в аэрокосмической отрасли, автоматизированном производстве, военной авиации, военной технике, радиационных центрах. По этой причине повышение точности работы, долговечности и долговечности диодов является сегодня актуальной задачей.

При исследовании запрещенной зоны полупроводников мы в первую очередь изучаем ее энергии. Энергия E и импульс $\bar{p}$ свободного электрона могут принимать любые значения. В отсутствие внешних сил они сохраняют свою величину, т.е. являются интегралами движения. Связь энергии с импульсом определяется выражением

$$E = \frac{\bar{p}^2}{2m} = \frac{\hbar^2 \bar{k}^2}{2m}, \quad (1)$$

где m – масса свободного электрона; $\bar{k}$ – волновой вектор электрона; $\hbar$ – постоянная Планка, деленная на 2π .

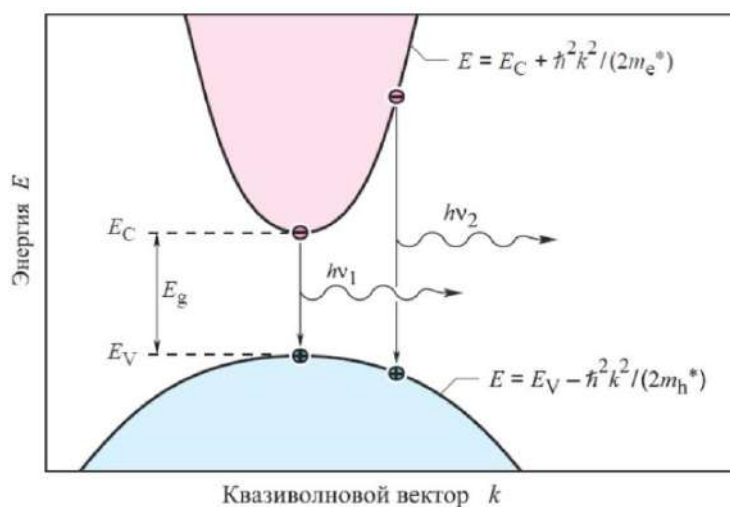


Рис.1. Уровня энергии в зоне проводимости и валентной зоне полупроводников.

Энергетический спектр электрона в изолированном атоме – дискретный. Состояние электрона в изолированном атоме может быть описано с помощью четырех квантовых чисел: главным n , орбитальным ℓ , магнитным m_ℓ и спиновым m_s . Согласно принципу Паули в атоме

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

не может существовать двух или более электронов с четырьмя одинаковыми квантовыми числами. Физические свойства твердых тел тесно связаны со структурой валентных оболочек атомов. В идеальном кристалле атомы расположены строго в узлах пространственной решетки. При образовании кристалла из изолированных атомов их электронные оболочки перекрываются, что приводит к расщеплению дискретных энергетических уровней в разрешенные энергетические зоны, отделенные друг от друга запрещенными зонами. В отличие от свободного электрона у электрона, находящегося в периодическом поле кристалла, скорость и импульс меняются от точки к точке в весьма широких пределах.

Для плотности тока j в теле под действием электрического поля E , согласно закону Ома $j = \sigma \times E$. Коэффициент пропорциональности σ называется электропроводностью. Поскольку это количество сильно зависит от материала. Распространена классификация материалов по их проводимости. Полупроводники, например, представляют собой твердые тела, которые не проводят ток. Электрические токи при низких температурах, но показывают измеримую проводимость при более высоких температурах. Причина этой температурной зависимости представляет собой специфическую зонную структуру электронных энергетических уровней полупроводника.

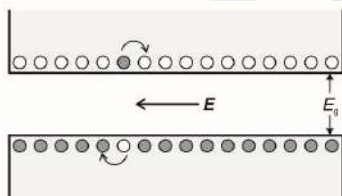


Рис. 2. Упрощенная схема собственной проводимости: полупроводник с электроном в зоне проводимости и дыркой в зоне проводимости валентная зона под действием электрического поля E .

Валентная зона, т.е. самая верхняя зона, полностью или частично заселенная в основном состоянии, и зона проводимости, т.е. следующая незаселенная зона, разделены запрещенной зоной E_g (Ge: $E_g < 0,7$ эВ). Область между двумя зонами не заселена электронами в нелегированном чистом полупроводнике и называется «запрещенной зоной».

2. Экспериментальные образцы

В данной статье в качестве объекта исследования была взята полупроводниковая структура Ge и определена величина запрещенной зоны германия. Исследовали температурной зависимости электропроводности в области собственной проводимости и примыкающей к ней области примесной проводимости (интервал температур 300-450 К) и определили ширины запрещенной зоны полупроводника. Использовано образец Ge,

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

нелегированный на съемной плате, управляемый по току источник питания, 15 В, 3 А, и источник питания, 12 В, 50 мА, подставка-основание, V-образная форма, 20 см, и соединительные провода.

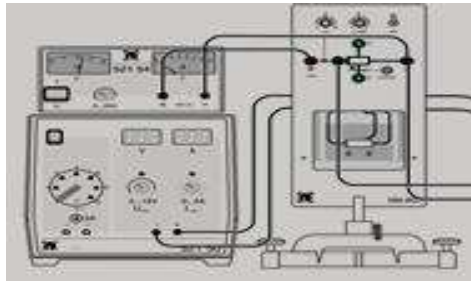


Рис. 3. Экспериментальная установка для определения ширины запрещенной зоны германия.

Мы использовали замену платы осторожно, поскольку кристалл Ge очень хрупкий. Из-за высокого удельного сопротивления кристалл Ge нагревается даже при приложении только перекрестного тока: Поэтому был использован максимальный поперечный ток $I = 4$ мА.

Включили управляемый по току источник питания, установили ограничитель напряжения на 15 В и ограничитель тока на 3 А (для этого временно закоротили выход источника питания). Включили этот источник питания и установили его выходное напряжение 12 В.

3. Расчетные соотношения

При более высоких температурах все больше и больше электронов термически активируются из валентной зоны в зону проводимости. Они оставляют в валентной зоне «дырки», которые движутся как положительно заряженные частицы, внося тем самым вклад в плотность тока j , как и электроны (см. рис. 1). Проводимость, возникающая за счет возбуждения электронов из валентной зоны в зону проводимости, это собственной проводимости. Поскольку в условиях теплового равновесия числа дырок в валентной зоне и электронов в зоне проводимости равны, плотность тока в случае собственной проводимости можно записать в виде

$$j_i = (-e) \cdot n_i \cdot v_n + e \cdot n_i \cdot v_p \quad (2)$$

e : элементарный заряд, n_i : концентрация электронов или дырок соответственно. Средние дрейфовые скорости электронов и дырок v_n и v_p пропорциональны напряженности поля E . При

$$v_n = -\mu_n \cdot E \text{ и } v_p = \mu_p \cdot E \quad (3)$$

где подвижности μ_n и μ_p выбраны положительными величинами,

$$j_i = e \cdot n_i \cdot (\mu_n + \mu_p) \cdot E \quad (4)$$

получается. Сравнение с (1) приводит к

$$\sigma_i = e \cdot n_i \cdot (\mu_n + \mu_p) \quad (5)$$

для проводимости. За исключением элементарного заряда e , все величины в (5) зависят от температуры T . Концентрация собственной проводимости n_i равна

$$n_i = \sqrt{N \cdot P} \cdot e^{-\frac{E_g}{2 \cdot k \cdot T}} \quad (6)$$

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

k : постоянная Больцмана, E_g : запрещенная зона полупроводника.

$$N = 2 \cdot \left(\frac{2 \cdot \pi \cdot m_n \cdot k \cdot T}{h^2} \right)^{\frac{3}{2}} \quad \text{и} \quad P = 2 \cdot \left(\frac{2 \cdot \pi \cdot m_p \cdot k \cdot T}{h^2} \right)^{\frac{3}{2}} \quad (7)$$

h : постоянная Планка, m_n : эффективная масса электрона, m_p : эффективная масса дырки,
– эффективные плотности состояний в зоне проводимости и в валентной зоне. Подвижности m_n и m_p также зависят от температуры. При низких температурах пропорциональность $\mu \propto T^{-\frac{3}{2}}$ выполняется примерно так же, как и пропорциональность $\mu \propto T^{-\frac{3}{2}}$ при высоких температурах. Из-за преобладания показательной функции (см. уравнение (6)), проводимость хорошо аппроксимируется и представляется выражением

$$\sigma_i = \sigma_0 \cdot e^{-\frac{E_g}{2 \cdot k \cdot T}} \quad (8) \quad \text{или} \quad \ln \sigma_i = \ln \sigma_0 - \frac{E_g}{2 \cdot k \cdot T} \quad (9)$$

С целью подтверждения уравнения. (8) и определяя ширину запрещенной зоны E_g , определяют проводимость нелегированного германия в зависимости от температуры T в эксперименте. При постоянном токе

$$I = j \cdot b \cdot c \quad (10)$$

b : ширина кристалла, c : толщина кристалла, падение напряжения

$$U = E \cdot a \quad (11)$$

a : длина кристалла, измерена на нелегированном кристалле Ge. Благодаря (I), (10) и (11) проводимость

$$\sigma = \frac{a}{b \cdot c} \frac{I}{U} \quad (12)$$

4. Экспериментальные результаты

Результаты измерения температуры и проводимости были следующими.

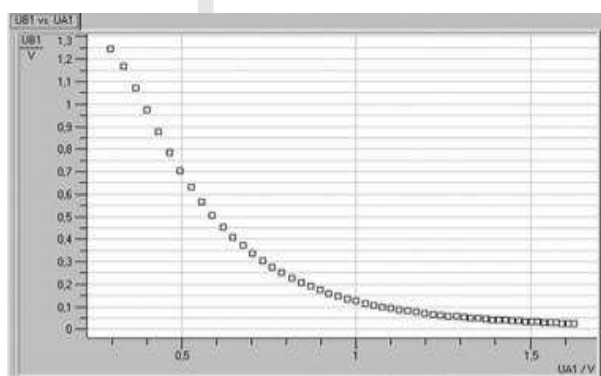


Рис. 4. График измеренных значений в виде $UB1 = f(UA1)$

UA1: напряжение на выходе для измерения температуры

UB1: падение напряжения на кристалле Ge при поперечном токе 2 мА.

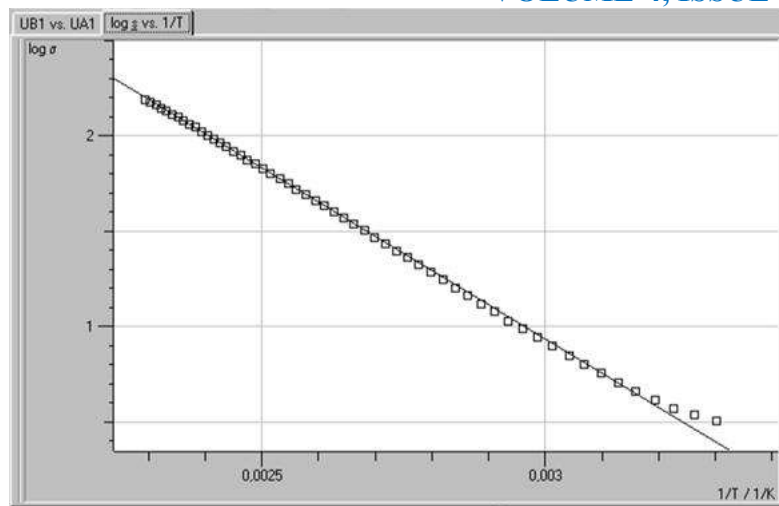


Рис. 5. График измеренных значений в виде $\log \sigma = f\left(\frac{1}{T}\right)$

$$\sigma = \frac{2mA}{UB1} \cdot \frac{20mm}{10mm \cdot 1mm} + 273,15K \quad (\text{проводимость, ср. (12)})$$

$$T = 100K \cdot \frac{UA1}{V} + 273,15K \quad (\text{температура})$$

Оценка и результаты на графике $\log \sigma = f\left(\frac{1}{T}\right)$ точки хорошо аппроксимируются прямой линией с наклоном $A = -1795 \text{ K}$ (см. рис. 4). Согласно (IX) наклон прямой равен

$$A = -\frac{1}{\ln 10} \cdot \frac{E_g}{2 \cdot K} \quad (13)$$

Где $k = 1,3807 \times 10^{-23} \text{ Дж} \cdot \text{K}^{-1}$. Отсюда получена полупроводнике германие ширина запрещенной зоны $E_g = 1,149 \times 10^{-19} \text{ Дж} = 0,71 \text{ эВ}$. В полупроводнике германие энергия ионизации доноры P , $0,012 \text{ эВ}$ и акцепторы B энергия ионизации, $0,01 \text{ эВ}$. Собственная концентрация $n_i = 2,5 \times 10^{13} \text{ см}^{-3}$, $\gamma = 4,4 \times 10^{-4} \text{ эВ/град}$

5. Результаты эксперимента и их обсуждение

Локальная деформация в кристалле, создаваемая продольной акустической волной, приводит к волнообразному смещению дна зоны проводимости и вершины валентной зоны проводимости.

Схематично это представлено на рис. 5. В процессе движения электрона в таком полупроводнике основной механизм его рассеяния будет обусловлен продольными колебаниями решетки, возникшими в результате теплового возбуждения.



Рис. 6. Изменение энергии зон проводимости полупроводника и валентной зоны под воздействием продольных акустических колебаний решетки: E_c -дно зоны проводимости, E_v -

вершина валентной зоны.

Это рассеяние упругое и происходит на длинноволновых фононах. Задачу о рассеянии электрона на акустических колебаниях решетки можно решить методом деформационного потенциала. В данном методе учитывается, что при распространении упругих волн по кристаллу на периодический потенциал внутреннего поля накладывается дополнительный периодический потенциал. Это приводит к появлению переменной потенциальной энергии электрона, который получил название потенциала деформации. Деформационный потенциал - изменение энергии электрона в зоне проводимости или дырки в валентной зоне при деформировании полупроводника. Деформация изменяет ширину запрещенной зоны полупроводника. Теория деформационного потенциала обладает рядом преимуществ, в частности простотой вывода, позволяющей обобщить теорию на более сложные случаи, например, на случай сложной зонной энергетической структуры.

Рассмотрим теорию деформационного потенциала в простом кубическом одноатомном кристалле для случая простой зонной структуры, когда энергия электрона проводимости определяется соотношением:

$$E = \frac{\hbar^2 k^2}{2m^*}$$

Волнообразные колебания ширины запрещенной зоны при возбуждении продольной акустической волны сжатия представлены на рис. 6.

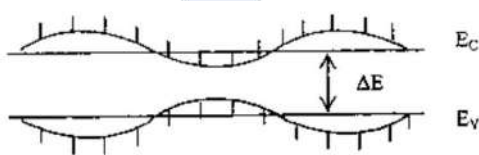


Рис. 7. Волнообразные колебания ширины запрещенной зоны.

Для упругих колебаний состояние деформированного кристалла.

Характеризуется компонентами тензора деформации $\varepsilon_{ij} = \frac{1}{2} \left(\frac{\partial u_j}{\partial u_i} + \frac{\partial u_i}{\partial u_j} \right)$

где $\frac{\partial u_j}{\partial x}$ изменение смещения по j при изменении расстояния по i -оси;

x_i ($x_1 \equiv x$, $x_2 \equiv y$, $x_3 \equiv z$) - прямоугольные координаты; u_i ($i = 1, 2, 3$) -

прямоугольные проекции смещения $\vec{u}(x_1, x_2, x_3)$ колеблющихся атомов. Положение дна зоны проводимости E_c (вершины валентной зоны E_v) можно рассматривать как функцию компонент тензора деформации ε_{ij} .

Разлагая E_c в ряд по ε_{ij} , получим:

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

$$E_c(\varepsilon_{ij}) = E_c(0) + \sum_{ij} a_{ij} \varepsilon_{ij} = E_c(0) + a_{11} \varepsilon_{11} + a_{12} \varepsilon_{12} + \dots$$

Величины a_{ij} и ε_{ij} зависят от ориентации координатных осей x_i , относительно осей кристалла, кроме того, a_{ij} зависит также от природы кристалла. Поместим начало координат в вершину, куба не деформированной кристаллической ячейки, а оси координат направим по его ребрам.

Нетрудно показать, что для кристалла кубической симметрии недиагональные коэффициенты a_{ij} ($i \neq j$) равны нулю. Действительно, повернув координатную систему вокруг оси $x_3 \equiv z$ на угол $\pi/2$, получим в новой системе (обозначенной штрихами) $x'_1 = x_2, x'_2 = -x_1$ тогда согласно $E_c(\varepsilon_{ij}) = E_c(0) + \sum_{ij} a_{ij} \varepsilon_{ij} = E_c(0) + a_{11} \varepsilon_{11} + a_{12} \varepsilon_{12} + \dots$

$\varepsilon'_{12} = -\varepsilon_{12}$. Коэффициенты a_{ij} при таком повороте координатной системы не меняются, т.к. кристалл ориентирован одинаково при обоих положениях системы, следовательно, $a'_{12} = a_{12}$. Пусть деформация кристалла такова, что отлична от нуля только компонента тензора ε_{12} .

В этом случае смещение края зоны проводимости, выраженное в обоих координатных системах, повернутых друг относительно друга, равно

$$E_c(\varepsilon_{12}) - E_c(0) = a_{12} \varepsilon_{12} = a'_{12} \varepsilon'_{12}$$

откуда $a_{12} = 0$. Можно показать, что и все остальные недиагональные коэффициенты a_{ij} также равны нулю. Так как в кубическом кристалле оси

x_1, x_2, x_3 равны означены, то $a_{11} = a_{22} = a_{33} = E_1$ и, учитывая

$$E_c(\varepsilon_{ij}) = E_c(0) + \sum_{ij} a_{ij} \varepsilon_{ij} = E_c(0) + a_{11} \varepsilon_{11} + a_{12} \varepsilon_{12} + \dots, \text{ будем}$$

иметь:

$$E_c(\varepsilon_{ij}) = E_c(0) + E_1 \Delta,$$

где $\Delta = \varepsilon_{11} + \varepsilon_{22} + \varepsilon_{33} = \frac{\partial u_1}{\partial x_1} + \frac{\partial u_2}{\partial x_2} + \frac{\partial u_3}{\partial x_3} = \text{div} \vec{u} = \frac{\delta V}{V}$ - относительное изменение объема в

данной точке. Из уравнения $E_c(\varepsilon_{ij}) = E_c(0) + E_1 \Delta$,

видно, что E_1 имеет размерность энергии. Обозначим $E_1 \Delta = U$, и, используя $\Delta = \varepsilon_{11} + \varepsilon_{22} +$

$$\varepsilon_{33} = \frac{\partial u_1}{\partial x_1} + \frac{\partial u_2}{\partial x_2} + \frac{\partial u_3}{\partial x_3} = \text{div} \vec{u} = \frac{\delta V}{V}, \text{ получим } U = E_1 \text{div} \vec{u}(r) \text{ это потенциальную энергию или}$$

потенциал рассеяния.

6. Заключение

Измерение температуры искажается из-за гистерезиса в нижнем температурном диапазоне. Таким образом, соответствующие точки данных на рис. 5 систематически выше

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

прямой линии, нарисованной на графике. Рассмотренный способ не позволяет определить ширину запрещенной зоны при низких температурах, когда зависимость $\Delta E(T)$ отклоняется от линейной.

Наиболее точно ширину запрещенной зоны при любой температуре можно определить экспериментально с помощью одного из оптических методов, основанных на исследовании спектральных зависимостей поглощения, фотопроводимости или люминесценции.

Список литературы:

1. Росадо Л.Д. Физическая электроника и микроэлектроника.-М.:Вышш.шк., 1991.-351с
2. Иванов В.И., Аксенов А.И., Юшин А.М. Полупроводниковые оптоэлектронные приборы справочник.-М.: Энергоатомиздат.1988.-448с
3. Дж. Займан. «Принципы теории твердого тела», изд-во «Мир», 1966.
4. Ч. К и т т е л ь. «Введение в физику твердого тела», изд-во ф.-м. литературы, 1962.
5. У. Ха ррисон. «Теория твердого тела», изд-во «Мир», 1972.
6. П. Киреев. «Физика полупроводников», изд-во «Высшая школа», 1969.
7. Р. Смит. «Полупроводники», изд-во иностранной литературы, 1962.
8. Г. Епифанов. «Физика твердого тела», изд-во «Высшая школа», 1965.
9. К Шалимова. «Физика полупроводников», изд-во «Энергия», 1971.
10. Г. Пикус. «Основы теории полупроводниковых-приборов», изд-во «Наука», 1965.
11. Воробьев Л.Е., Данилов С.Н., Ивченко Е. Л., Левинштейн М.Е. Фирсов Д.А., Шалыгин В.А. Кинетические и оптические явления в сильных электрических полях в полупроводниках и наноструктурах. Санкт-Петербург, Наука, 2000, с.102-109.
12. Темирбаева И. Мадияров Д. Нарымбетов Б.Ж. Кунназаров Б.Ж. Исследование образования иона N_2O^- при радиолизе раствора закиси азота в жидком углеводороде методом фотопроводимости. УзР ФА ККБ «АХБОРОТНОМАСИ» журналы. №2 (267) 2022 г.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

PROBLEMS IN TEACHING READING TO SCHOOL-AGE CHILDREN

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Abstract : *In our country present in the day language to study has been attention from the day to the day increased is going In particular before school education , school , higher and medium special education in institutions one how much foreign languages as a science being taught is coming . In this process study with many problems surface will come Especially at school young language learner students between row this such as problems meeting can This in the article school age children language learning during precisely in reading and teaching some disadvantages and their solutions regarding thought held .*

Key words : *Phonetics difficulties , visual aids , teaching qualification , grammar structures .*

MAKTAB YOSHIDAGI BOLALARNI READING O'QITISHDAGI MUAMMOLAR

Annotasiya: *Mamlakatimizda hozirgi kunda til o'rganishga bo'lgan e'tibor kundan kunga ortib bormoqda . Xususan maktabgacha ta'lim , maktab , oliy hamda o'rta maxsus ta'lim muassasalarida bir qancha xorijiy tillar fan sifatida o'rgatilib kelinmoqda . Bu jarayonda o'qitish bilan ko'plab muammolar yuzaga keladi . Ayniqsa maktabda yosh til o'rganuvchi o'quvchilar orasida qator bu kabi muammolarni uchratish mumkin. Ushbu maqolada maktab yoshidagi bolalar til o'rganish mobaynida aynan reading o'qitishdagi ayrim kamchiliklar va ularning yechimlari borasida fikr yuritilgan .*

Kalit so'zlar: *Fonetik qiyinchiliklar , visual yordamlar , o'qitish malakasi , grammatik tuzilmalar.*

ПРОБЛЕМЫ ОБУЧЕНИЯ ЧТЕНИЮ ДЕТЕЙ ШКОЛЬНОГО ВОЗРАСТА

Аннотация: *В нашей стране внимание к изучению языков возрастает с каждым днем. В частности, ряд иностранных языков преподается как предмет в дошкольных, школьных, высших и средних специальных учебных заведениях. В этом процессе возникает много проблем с преподаванием. С рядом таких проблем можно столкнуться, особенно среди молодых людей, изучающих язык в школе. В данной статье рассматриваются некоторые недостатки обучения чтению детей школьного возраста в процессе изучения языка и пути их решения.*

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Ключевые слова: фонетические трудности, наглядные пособия, педагогические навыки, грамматические конструкции.

School age to the children study to teach in the process one row problems appear to be can Some children book to study natural interest have it won't be . They pay attention long term save can't or study they consider it boring . Reading qualification low Reading qualifications in development children some sounds separate the letters recognize get and them right in application to difficulties face coming can of this process complexity in study to slow down take will come Reading of learning important part the text is understanding . Children read text content right if they don't understand , that's it their interest reduces and study process it becomes difficult . At home parents or big of ages to study attention does not give or lack of support of children to study has been ability restriction can House conditions to study attention enough if not , children fail at school too meeting can Every child to study different at speed learns To some more time and addition exercises need to be can But the teacher or parents this in consideration if not , the child himself behind feels like staying and this of trust to decrease take will come School age English language studying teaching children to read to himself special problems there is . Children in this mother from the language different the language studying that it was for special approach and addition help is required .

Main problems :

- Phonetic difficulties
- Word of wealth lack of
- Cultural differences
- Reading speed and pronunciation difficulties
- Of interest lack of
- Supporting environment lack of

English of the language pronunciation and spelling to each other suitable does not come (for example , a different sounds different different in words written) children distraction can This is especially the mother in the language phonetic and graphematic compatibility strong has been children for problem gives birth English language learning children most of the time limited word wealth have will be And this study in the process to understand because it makes it difficult they are in the text many stranger to words face they come Grammatical structures complexity : English in the

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

language grammar structures some children for complicated to be can He is studying of the text content right to understand for grammar the rules to know and them apply get important In the texts cultural features and contexts children for you don't understand to be can Some words or expressions their diary in his life is not used or in general cultural in terms of familiar it's not . English in the language is studying children most of the time the words right pronunciation in doing to difficulties face they come Not only that the text to understand , maybe common respectively study speed is also affected does To understand development difficulties : Words study learning one thing , but of the text content complete to understand another thing English in the language texts stranger words and expressions because of children for complicated to be it is possible while common to understand makes it difficult . Some children English in the language text to study lack of interest because it is possible this to them complicated and difficult it seems In this case of motivation decrease is also observed . House conditions English in the language study for chance or resources lack of of children English in the language texts study qualifications development hindrance to do can Bringing passed to problems one row methods using eliminate reach can Phonetic study methods application , Letters and sounds between dependence better explainer phonetic exercises with to the children help to give can Texts simple and to the children Adaptation : Texts of the child word wealth Adaptation is understandable and interesting stories with motivation increase Visual aids , Pictures and diagrams through text content to understand help to give To the context based on teaching : To children stranger the words in context explanation and cultural aspects explain study process makes it easier . Parents and teachers with cooperation : At home and at school addition help show , more study opportunities create through to the children help to give These are the methods using of children English in the language texts to understand ability develops and in study difficulties to overcome help gives

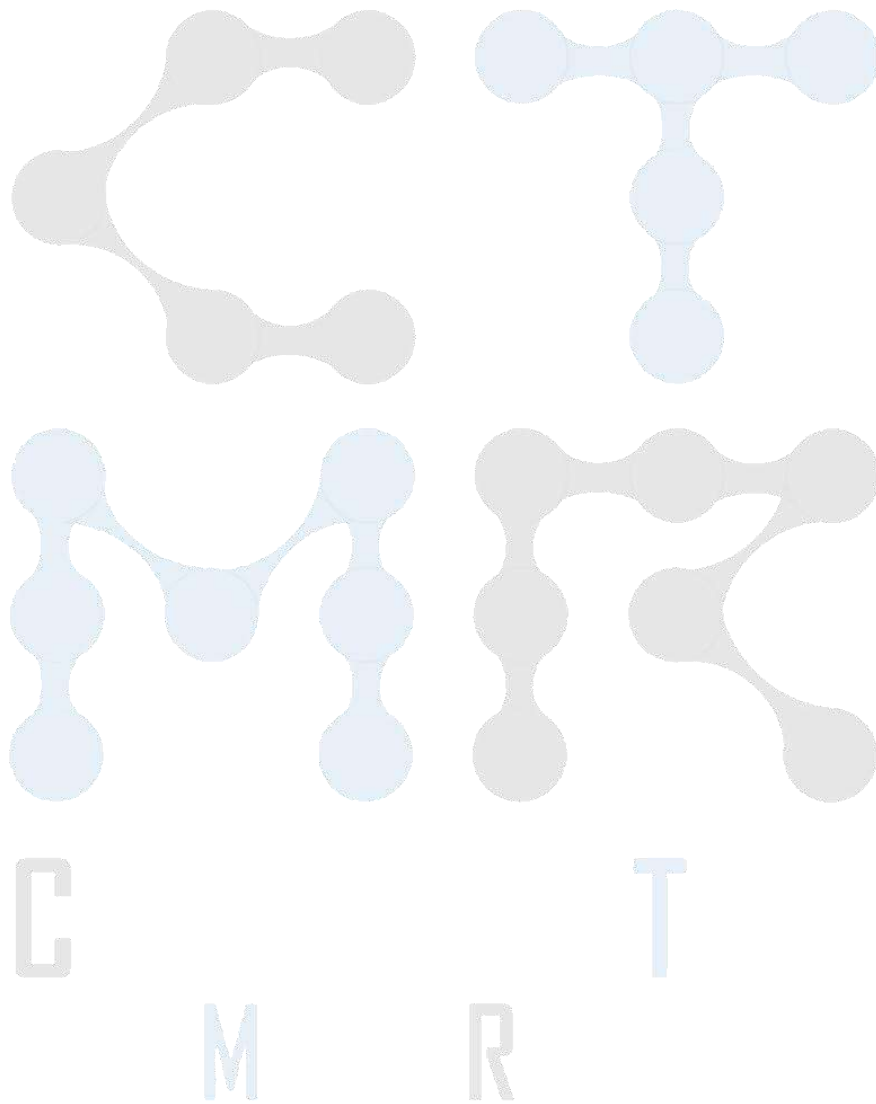
References :

1. Yo'ldoshev , A. In language learning phonetic and grammar methods . Tashkent : Uzbekistan National university publisher . (2008).
2. Kadirova , S. Start in classes study and to write to teach modern methods . Tashkent: Science and technologies . (2016).
3. G'afurov , I. To children foreign language to teach linguistic basics . Samarkand: Samarkand state university publisher . (2011).
4. Nishonova , S. In the students foreign in the language study and to understand qualifications development ways Uzbekistan pedagogical magazine , 5(3), 45-50. (2013).

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

5. Usmonova , M. Foreign language in education cultural of context importance . Language and literature of the magazine special number , 4(2), 78-83. (2017).



THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

THE RATIO OF THE DYNAMICS OF INTEREST ON LOANS TO THE REAL INTEREST RATE FROM THE POINT OF VIEW OF BANKING SECTORS ITALY, INDIA, MEXICO AND SOUTH AFRICA

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Abstract:

The formation and development of stable economic relationships necessitates the consideration of various issues related to banking activities. Based on this, the paper studies the issues of the relationship between interest rates on loans and the real interest rate. For these purposes, data for the banking sectors of Italy, India, Mexico and South Africa are examined. The analysis is based on wavelet coherence estimates. The paper presents various graphs and diagrams that allow one to evaluate the results obtained.

Key words: Analysis, Ratio, Dynamics, Banking sector, Wavelet analysis, Interest rates on loans, Real interest rate

Introduction

The banking sector plays an important role in the economic development of any country, as it ensures the continuous movement of financial resources between various business entities [1]-[3]. At the same time, the banking sector contributes to the accumulation of the necessary volume of resources and their redistribution, both between individual economic agents and between different sectors of the economy [4]-[6]. This allows various economic agents, including the financial sector of the economy, to function and develop stably.

To implement the tasks that arise in the process of functioning of the banking sector, various methods and approaches are used [7]-[16], which operate with a certain set of indicators of banking activity, presented in the form of statistical data series. These data reflect various parameters of the banking sector of the economy, its interaction with business entities, sectors of the economy, the population. The study and analysis of such parameters and indicators of the banking sector allows us to assess the sustainability and stability of their functioning, make forecast assessments of development, consider ways to improve the quality of services provided, and much more.

It should be noted that a certain set of parameters of the banking sector functioning reflects individual areas of implementation of banking services, types of banking activities. Based on the basics of the banking sector functioning, one of its key areas is related to the provision of loans. This type of activity is characterized in general by the volume of loans provided and the interest rate on loans. At the same

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

time, the interest rate on loans is interconnected with the real interest rate, which reflects and takes into account the real conditions of inflation [17]-[21]. Analysis of the relationship between the interest rate on loans and the real interest rate allows us to consider and evaluate the effectiveness of banking activities, determine the directions of development of the banking sector of the economy. At the same time, the study of such indicators can be the basis for a comparative analysis of the banking sectors of various economies in their development.

Thus, the main objective of the study is to consider the dynamics of interest rates on loans and real rates from the point of view of the economy of various countries. For these purposes, an analysis of related works was conducted, the dynamics of the corresponding indicators for individual countries was considered, and a mutual analysis of such dynamics was conducted.

Related work

The issues of banking activity analysis are constantly in the sphere of study of various researchers and practitioners. This also concerns the dynamics of the relationship between interest rates on loans and the real interest rate.

M. A. Shokr examines in detail the relationship between the real interest rate, income and bank loans [22]. The main objective of this analysis is to study the effectiveness of monetary policy on bank loans using data from the Egyptian banking sector. For this purpose, the generalized method of moments model is used. The author also examines the impact of monetary policy shocks on bank loans in Egypt. The paper also notes that the real interest rate has a significant impact on bank loans.

G. Dell'Araccia, L. Laeven and R. Marquez analyze the relationship between real interest rates, leverage and banking risk, paying attention to the dynamics of interest rates on loans [23]. The work shows that banks can adjust their capital structures due to the relationship between the dynamics of interest rates on loans and real interest rates. In this case, it is possible to influence the amount of the corresponding banking risk. Thus, the analysis of this correspondence is significant and important in organizing banking activities.

D. Saiti and B. Trenovski examine the impact of loans and interest rates on economic growth based on data from the Republic of North Macedonia [24]. The analysis uses the correlation method and descriptive statistics of variables, tests for stationarity and cointegration. The paper also uses the VECM estimation model for data for the period 2000-2018 [24]. The results show that lending has a positive effect on GDP growth in the short and long term, while real interest rates have a negative effect.

G. B. Eggertsson, R. E. Juelsrud, L. H. Summers and E. G. Wold examine the issue between bank lending and negative nominal interest rates [25]. The paper examines the empirical and theoretical perspectives on the issue. The paper uses data from the banking sector of the Swedish economy. The

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

authors consider a model of the pass-through of negative interest rates to interest rates on loans as an identified moment for parameterizing the model and assessing the impact of negative interest rates on general equilibrium [25]. The results of the paper show when negative interest rates are expansionary and when they are not.

W. Bounougou and C. Mawusi analyze the relationship between bank lending margins under negative interest rates [26]. The paper shows that bank margins have decreased in countries where negative rates were introduced. For these purposes, data from 9,638 banks from 41 countries for the period 2009–2018 were analyzed. The authors also emphasize that under negative interest rates, the interest rate on loans decreases faster than the rate on retail deposits. Consequently, the issue of the relationship between interest rates on loans and the dynamics of the real interest rate is key in determining the directions of banking activities.

A brief analysis of the research question shows the possibility of using various tools to conduct the relevant research. At the same time, the object of the research can be data from the banking sectors of different countries. This will allow for comparative analysis and new results.

Interest rates on loans and the real interest rate in the banking sectors of a number of studied economies of individual countries

To conduct the corresponding analysis, we will consider the dynamics of interest rates on loans and the real interest rate in the banking sectors of such countries as Italy, India, Mexico and South Africa (Fig. 1 and Fig. 2). This will allow us to generalize the issue under study in comparison with the development of bank lending in the banking sectors of various countries.

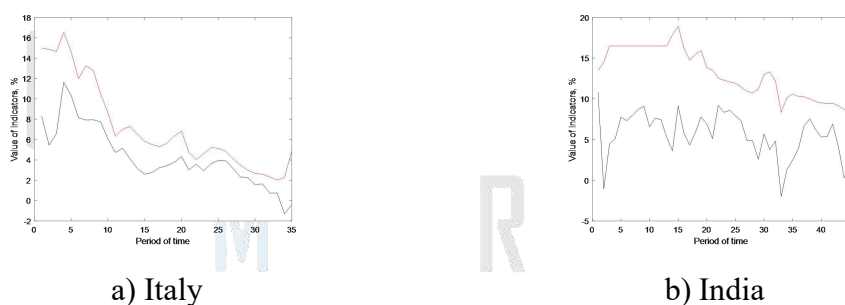


Figure 1: Interest rates on loans and real interest rate in the banking sectors of Italy and India

On Fig. 1 and Fig. 2, the data for interest rates on loans are shown in red, and the data for the real interest rate are shown in black.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

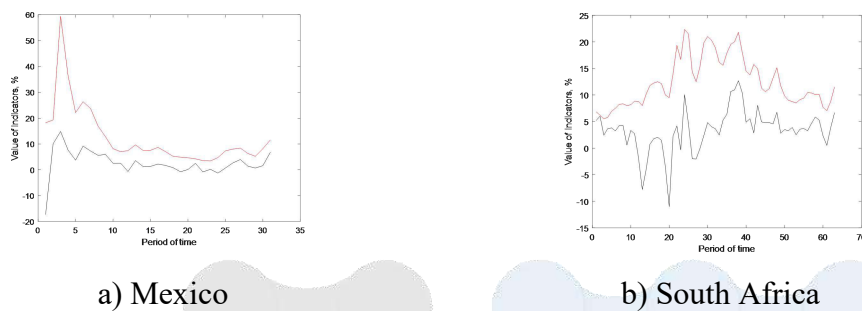


Figure 2: Interest rates on loans and real interest rate in the banking sectors of Mexico and South Africa

First of all, it is necessary to note the differences both in the dynamics of individual interest rates from the point of view of the banking sectors of individual countries, and in the dynamics of interest rates on loans and the real interest rate in the context of individual banking sectors of different countries.

The general dynamics of the interest rate on loans and the real interest rate from the point of view of the Italian banking sector, during 1989-2023, is constantly decreasing (Fig. 1a). In some periods of time, the real interest rate has negative values. This is a consequence of the easing of monetary policy, which is typical for periods of crisis. At the same time, the interest rate on loans constantly exceeds the real interest rate, which is typical for all the banking sectors studied. Such excess generally characterizes the costs arising in the banking sectors for servicing such a direction of banking activity as the provision of loans. At the same time, the margin between the amount of interest on loans and the real interest rate from the point of view of the Italian banking sector is also decreasing.

The dynamics of the interest rate on loans and the real interest rate from the point of view of the Indian banking sector also decreases during 1978-2022 (Fig. 1b). However, such a decrease is not significant in comparison with the data on the Italian banking system. At the same time, the dynamics of the interest rate on loans and the real interest rate from the point of view of the Indian banking sector are characterized by strong volatility. At the same time, the dynamics of the real interest rate is more susceptible to such volatility, the values of which in certain periods of time have negative values. At the same time, the values of the margin between the interest rate on loans and the real interest rate from the point of view of the Indian banking sector are also subject to volatility. The highest values of such margin are observed at the beginning and in the middle of the studied period of time.

The dynamics of the interest rate on loans and the real interest rate from the point of view of the banking sector of Mexico, during 1993-2023, are characterized by some stabilization after a significant

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

decrease at the beginning of the period under study (Fig. 2a). Here, there is also insignificant volatility of the data under study. The values of the real interest rate in certain periods of time have negative values, which characterizes the presence of problematic periods in economic development, as for other countries under study. The margin between the interest rate on loans and the real interest rate from the point of view of the banking sector of Mexico is gradually leveling out. The highest margin values are observed at the beginning of the period under study.

The dynamics of the interest rate on loans and the real interest rate from the point of view of the South African banking sector, during 1961-2023, are characterized by significant volatility (Fig. 2b). This affects the size of the margin between the corresponding data. At the beginning and in the middle of the analyzed period, the margin values are the highest. In the last third of the analyzed period, the margin values decrease and stabilize. For the South African banking sector data, there are also periods with negative values of the real interest rate.

Thus, in general, despite the differences in the dynamics of the studied data, we can talk about the similarity in the trends of the dynamics between the amount of interest on loans and the real interest rate from the point of view of the banking sectors of various countries. At the same time, the ambiguity of such trends determines the need to compare the dynamics between the studied data series.

Comparative assessment of the mutual dynamics of the studied data

When studying the possibility of solving the problem of conducting a comparative assessment of the mutual dynamics of the data under study, it is necessary to highlight various methods for its implementation [27], [28]. At the same time, among such methods, it is necessary to highlight the ideology of wavelets, where the wavelet coherence method attracts attention. This method has proven itself well in such studies [29]-[36], and allows for the corresponding assessments to be carried out at different time intervals, taking into account the depth of their mutual intersection.

If we have two series of data ($k(t)$ and $d(t)$), each of which reflects the dynamics of an indicator over time t , then we can determine the value of wavelet coherence between the following series of data using the following formula [37]-[39]:

$$Q^2(a, b) = \frac{|\Pi(a^{-1}W_{k(t)d(t)}(a, b))|^2}{\Pi(a^{-1}|W_{k(t)}(a, b)|^2)\Pi(a^{-1}|W_{d(t)}(a, b)|^2)},$$

where:

$W(a, b)$ – values of transverse wavelet spectra,

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

a, b – the scale and center of time localization that determine the scale of the wavelet transform,

$k(t), d(t)$ – series of data that we study,

Π – smoothing operator,

$Q^2(a, b)$ – square of the wavelet coherence coefficient. $0 \leq Q^2(a, b) \leq 1$. If these values tend to zero, then we have a weak correlation. Otherwise we have a strong correlation [38], [39].

On Fig. 3 presents estimates of wavelet coherence between data series reflecting the dynamics of interest rates on loans and the real interest rate from the point of view of the banking sector of Italy and India.

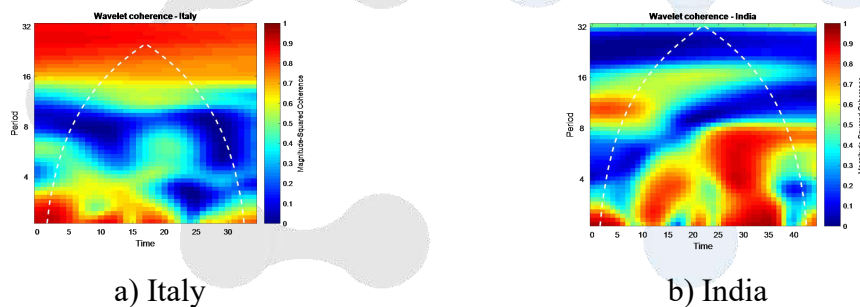


Figure 3: Wavelet coherence estimates for Italian and Indian banking sector data

On Fig. 4 presents estimates of wavelet coherence between data series reflecting the dynamics of interest rates on loans and the real interest rate from the point of view of the banking sector of Mexico and South Africa.

The data presented in Fig. 3 and Fig. 4 reflect the mutual dynamics of the data, which is shown in Fig. 1 and Fig. 2, respectively.

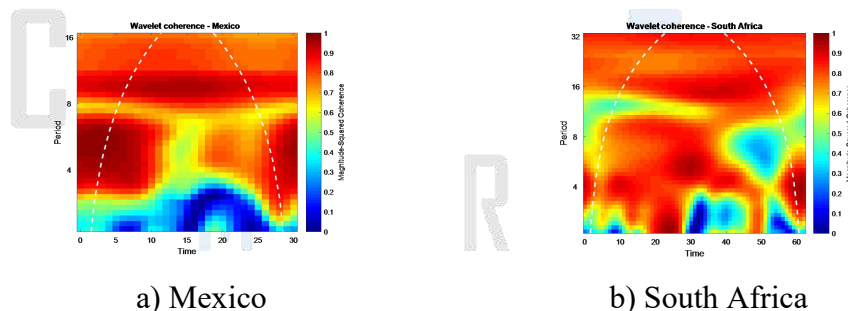


Figure 4: Wavelet coherence estimates for Mexican and South African banking sector data

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Wavelet coherence for the Italian banking sector is characterized by significant and meaningful relationships between the dynamics of interest rates on loans and the real interest rate (Fig. 3a). However, the depth of such relationships is insignificant, which makes it difficult to build forecast models and estimates.

Wavelet coherence for the Indian banking sector is also characterized by significant and meaningful relationships between the dynamics of interest rates on loans and the real interest rate (Fig. 3b). At the same time, the depth of the corresponding relationships is deeper, but fragmentary. This allows us to build limited forecast estimates.

At the same time, the wavelet coherence estimates for the Mexican banking sector on the short-term horizon are minimal and insignificant (Fig. 4a). This makes it difficult to make any short-term forecasts. At the same time, the depth of such estimates is significantly significant and allows us to talk about forecasts for the long-term.

Overall, the wavelet coherence estimates for the South African banking sector are significant and substantial, and have sufficient depth of cross-correlation (Fig. 4b). At the same time, in the last third of the period under study, fragmentation of the significance of such estimates is observed. Nevertheless, there are sufficient opportunities for constructing forecast models for the South African banking sector. Thus, it should be noted that it is advisable to consider wavelet coherence estimates when conducting a comparative analysis between data reflecting the dynamics of interest rates on loans and the real interest rate from the point of view of the banking sector. Such estimates allow us to better understand the mutual dynamics of the data under study and consider other models for their analysis.

Conclusion

The paper examines issues related to the analysis of the relationship between the dynamics of interest rates on loans and the real interest rate from the point of view of the banking sectors of individual countries. Based on a brief literature review, the importance of considering the issue is shown.

For the purposes of analysis, the relevant data for the banking sectors of such countries as Italy, India, Mexico and South Africa are considered. The corresponding data graphs and description are presented. Based on wavelet coherence estimates, the relationship between the dynamics of interest rates on loans and the real interest rate is considered from the point of view of the banking sectors of individual countries. The feasibility of such an analysis is shown.

The results obtained should be used to forecast the development of the banking sector in the provision of credit services.

References:

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

1. Vasyurenko, O., & et al.. (2014). Efficiency of lending to natural persons and legal entities by banks of Ukraine: methodology of stochastic frontier analysis. Herald of the National Bank of Ukraine. 1, 5-11.
2. Kuzemin, A., & Lyashenko, V. (2008). Analysis of Spatial-temporal Dynamics in the System of Economic Security of Different Subjects of Economic Management. International Journal Information Technologies and Knowledge, 2(3), 234-238.
3. Lyashenko, V. (2014). Efficiency of bank crediting of real sector of economy in the context of separate banking groups: an empirical example from Ukraine. International Journal of Accounting and Economics Studies, 2(2), 74- 79.
4. Kuzemin, A., Lyashenko, V., Bulavina, E., & Torojev, A. (2005). Analysis of movement of financial flows of economical agents as the basis for designing the system of economical security (general conception). In Third international conference «Information research, applications, and education (pp. 27-30).
5. Baranova, V., Zeleniy, O., Deineko, Z., & Lyashenko, V. (2019, October). Stochastic Frontier Analysis and Wavelet Ideology in the Study of Emergence of Threats in the Financial Markets. In 2019 IEEE International Scientific-Practical Conference Problems of Infocommunications, Science and Technology (PIC S&T) (pp. 341-344). IEEE.
6. Азаренкова, Г., & Ляшенко, В. (2009). Відношення переваг у порівняльній оцінці діяльності банків. Банківська справа, 5, 65-72.
7. Ляшенко В. В. (2007). Интерпретация и анализ статистических данных, описывающих процессы экономической динамики. Бизнес Информ, 9(2), 108-113.
8. Слюніна, Т. Л., Бережний, Є. Б., & Ляшенко, В. В. (2007). Розвиток вітчизняної мережі банківських установ: особливості та регіональні аспекти. Вісник ХНУ ім. В. Н. Каразіна. Економічна серія, 755. 84–88.
9. Kuzemin, A., & Lyashenko, V. (2006). Fuzzy set theory approach as the basis of analysis of financial flows in the economical security system. International Journal Information Theories & Applications, 13(1), 45-51.
10. Vasiurenko, O., Lyashenko, V., Baranova, V., & Deineko, Z. (2020). Spatial-Temporal Analysis the Dynamics of Changes on the Foreign Exchange Market: an Empirical Estimates from Ukraine. Journal of Asian Multicultural Research for Economy and Management Study, 1(2), 1-6.
11. Mustafa, S. K., Ayaz, A. M., Baranova, V., Deineko, Z., Lyashenko, V., & Oyouni, A. A. A. (2020). Using wavelet analysis to assess the impact of COVID-19 on changes in the price of basic energy resources. International Journal of Emerging Trends in Engineering Research, 8(7), 2907-2912.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

12. Kots, G. P., & Lyashenko, V. (2012). Banking sectors of the economies of European countries in the representation of statistical interrelation between indices that characterize their development. *European Applied Sciences*, 1, 461-465.
13. Dobrovolskaya, I., & Lyashenko, V. (2013). Interrelations of banking sectors of European economies as reflected in separate indicators of the dynamics of their cash flows influencing the formation of the resource potential of banks. *European Applied Sciences*, 1-2, 114-118.
14. Kuzemin, A., & Lyashenko, V. (2009). Methods of comparative analysis of banks functioning: classic and new approaches. *Information Theories & Applications*, 16(4), 384-396.
15. Kuzemin, O., & Lyashenko, V. Microsituation Concept in GMES Decision Support Systems/A. Kuzemin, V. Lyashenko. *Intelligent Data Processing in Global Monitoring for Environment and Security* (pp. 217–238).–2011.–P, 217-238.
16. Куштим, В. В., & Ляшенко, В. В. (2007). Динаміка розвитку банківського сегмента міжнародного фінансового ринку. *Фінанси України*, (12), 96-105.
17. Obstfeld, M. (2023). Natural and Neutral Real Interest Rates: Past and Future. NBER Working Paper, (w31949).
18. Ferreira, T. R., & Shousha, S. (2023). Determinants of global neutral interest rates. *Journal of International Economics*, 145, 103833.
19. Han, N. W., Hung, M. W., & Wu, I. S. (2024). The effect of cutting interest rates on corporate investments: A real options model. *Applied Stochastic Models in Business and Industry*, 40(2), 512-526.
20. Баранова В. В., Ляшенко В. В. Інфляція, вартість банківських ресурсів та мережа банківських філій – окремі аспекти впливу та взаємозалежності. *Економіка розвитку*. 2007. № 4. С. 64–67.
21. Pyvavar I., Sokolova N., Lyashenko V. Estimating the Relationship Between Inflation and Tax Revenues in Selected European Countries: Austria, Germany, France, United Kingdom and Italy // *International Journal of Academic Accounting, Finance & Management Research (IJAAFMR)*. – 2023. – Vol. 7(4), P. 55-62.
22. Shokr, M. A. (2020). Real interest rate, income and bank loans: panel evidence from Egypt. *Journal of Financial Economic Policy*, 12(2), 227-243.
23. Dell’Ariccia, G., Laeven, L., & Marquez, R. (2014). Real interest rates, leverage, and bank risk-taking. *Journal of Economic Theory*, 149, 65-99.
24. Saiti, D., & Trenovski, B. (2022). The impact of loans and interest rates on economic growth in the Republic of North Macedonia. *Knowledge-International Journal*, 50(1), 15-20.
25. Eggertsson, G. B., Juelsrud, R. E., Summers, L. H., & Wold, E. G. (2024). Negative nominal interest rates and the bank lending channel. *Review of Economic Studies*, 91(4), 2201-2275.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

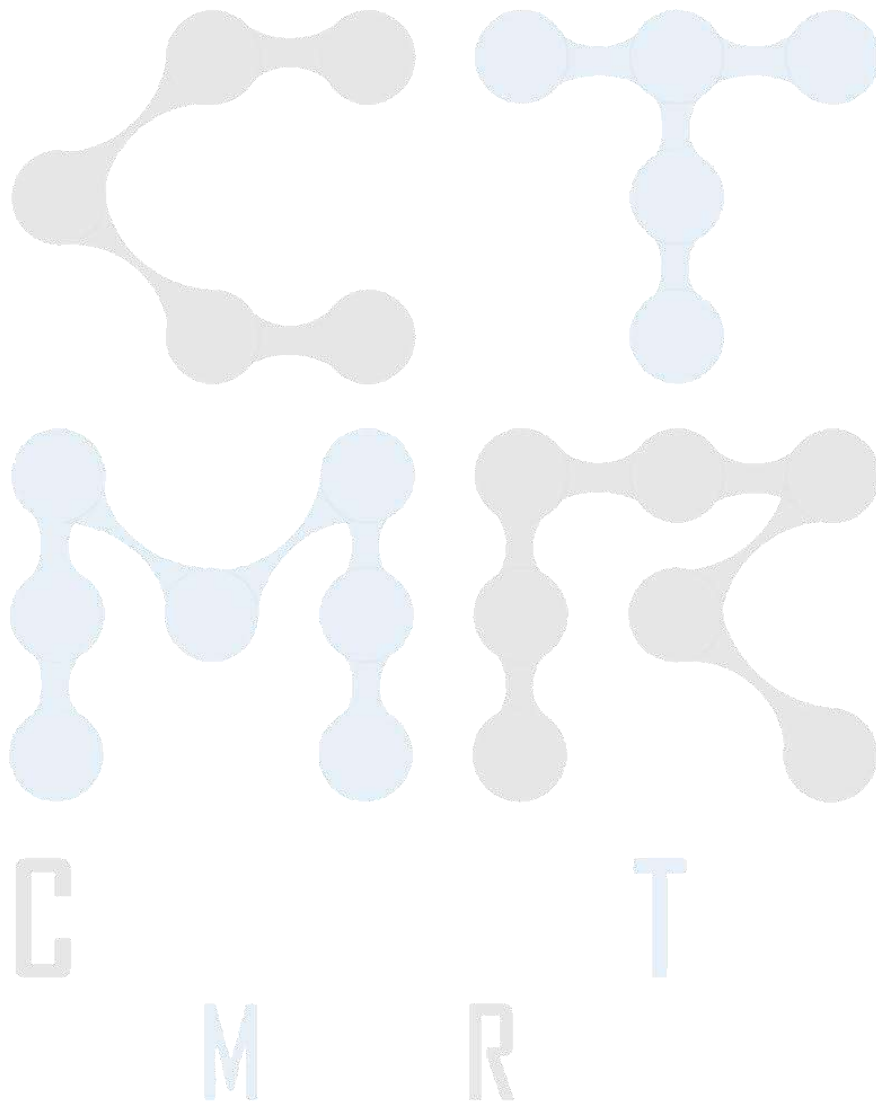
VOLUME-4, ISSUE-11

26. Bounvou, W., & Mawusi, C. (2023). Bank lending margins in a negative interest rate environment. *International Journal of Finance & Economics*, 28(1), 886-901.
27. Lyashenko, V., Tvoroshenko, I., Mustafa, S. K., & Ahmad, M. A. (2020). Methods of using fuzzy interval logic during processing of space states of complex biophysical objects. *International Journal of Emerging Trends in Engineering Research*, 8(2), 372-377.
28. Sotnik S., & et al.. (2022). Key Directions for Development of Modern Expert Systems. *International Journal of Engineering and Information Systems (IJEAIS)*, 6(5), 4-10.
29. Vasiurenko, O., & Lyashenko, V. (2020). Wavelet coherence as a tool for retrospective analysis of bank activities. *Economy and forecasting*, (2), 32-44.
30. Baranova, V., Orlenko, O., Vitiuk, A., Yakimenko-Tereschenko, N., & Lyashenko, V. (2020). Information system for decision support in the field of tourism based on the use of spatio-temporal data analysis. *International Journal of Advanced Trends in Computer Science and Engineering*, 9(4), 6356-6361.
31. Коц, Г. П., Кузьомін, О. Я., & Ляшенко, В. В. (2010). Сучасні методи аналізу функціонування банків: розв'язання проблемних аспектів. *Восточно-Европейский журнал передовых технологий*, 5(3 (47)), 48-52.
32. Lyashenko, V., Bilotserkivskyi, O., Pyvavar, I., & Kots, H. (2021). Mutual Dynamics of Certain Types of Bitcoin: Data from Wavelet Coherence. *Journal of Engineering, Technology, and Applied Science (JETAS)*, 3(2), 58-65.
33. Shelud'ko, N., Vasiurenko, O., Lyashenko, V., & Morozova, N. (2020). Gold and Bitcoin Price Dynamics as a Reflection of Investor Sentiment. *Journal La Bisecoman*, 1(4), 19-25.
34. Pogorelenko, N., Lyashenko, V. V., & Ahmad, M. A. (2016). Wavelet Coherence as a Research Tool for Stability of the Banking System (The Example of Ukraine). *Modern Economy*, 7(09), 955-965.
35. Chetverykov, G., Kobylin, O., Lyashenko, V., & Deineko, Z. (2019). Wavelets as a Tool for Data Mining Technology. *Інформація, комунікація, суспільство*, 249-250.
36. Lyashenko, V., Serhiienko, O., & Bilotserkivskyi, O. (2022). Dynamics of Changes in Commodity Indices for Commodities: Wheat, Corn, Soybeans, Sugar, Cocoa. *Dynamics*, 6(10), 74-80.
37. Torrence, C., & Webster, P. J. (1999). Interdecadal changes in the ENSO–monsoon system. *Journal of climate*, 12(8), 2679-2690.
38. Heil, C.E., & Walnut, D.F. (1989). Continuous and discrete wavelet transforms. *SIAM review*, 31(4), 628- 666.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

39. Kingsbury, N. (1999). Image processing with complex wavelets. Philosophical Transactions of the Royal Society of London. Series A: Mathematical, Physical and Engineering Sciences, 357(1760), 2543-2560.



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Аннотация. В статье рассматриваются возможности использования искусственного интеллекта и чат-ботов на основе нейросетей в педагогической практике, в частности в процессе обучения русскому языку. Подчёркивается значимость использования искусственного интеллекта в рамках персонализированного обучения, в том числе при построении индивидуальных образовательных траекторий, сборе и улучшении аналитики на основе больших данных. Предлагаются варианты применения нейросетей на занятиях русского языка.

Ключевые слова: искусственный интеллект, нейросети, технология искусственного интеллекта, ChatGPT, «Рекрутер».

Abstract. The article discusses the possibilities of using artificial intelligence and chatbots based on neural networks in pedagogical practice, in particular in the process of teaching the Russian language. The importance of using artificial intelligence in the framework of personalized learning is emphasized, including when building individual educational trajectories, collecting and improving analytics based on big data. Options for using neural networks in Russian language classes are proposed.

Keywords: artificial intelligence, neural networks, artificial intelligence technology, ChatGPT, "Recruiter".

Введение. В последние годы образовательная система страны переживает значительные изменения, направленные на модернизацию и повышение качества образования. Русский язык, являясь одним из значимых языков межнационального общения и научной коммуникации, занимает важное место в образовательной практике Узбекистана.

Сегодня, как мы видим, искусственный интеллект внедряется во все сферы, в том числе и в систему образования. Применение технологий искусственного интеллекта в системе образования это начало нового этапа развития сферы. Процесс предлагает большие преимущества, например это улучшенный опыт обучения, персонализированная учёба и другое. Платформы электронного образования, искусственный интеллект, VR-технологии посредством обеспечения адаптированной и интерактивной образовательной среды предоставляют возможность полностью изменить традиционные методы обучения. Однако для обеспечения правильного использования этих инноваций необходимо решение проблем искусственного интеллекта

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Как отметил Президент Республики Узбекистан Ш. М. Мирзиёев: «... самая непростая задача, требующая огромного труда и ответственности, – это подготовка обладающих инновационным, креативным мышлением учителей и наставников, обучающих своих учеников на основе самых высоких критериев».

Современная образовательная система Республики Узбекистан ориентирована на вхождение в мировое образовательное пространство, что предполагает совершенствование и введение коренных изменений во все составляющие образовательной системы: корректировку целей обучения, изменение методических основ образования, совершенствование средств обучения, обеспечение преемственности обучения на всех этапах образовательной системы и пр. Проблема обновления образовательной системы республики, её реформирования обусловлена необходимостью воспитания высокоразвитой личности, нравственные качества и уровень профессиональной подготовки которой удовлетворяли бы потребности современного общества.

Всё это обуславливает необходимость и обязательность внедрения в учебный процесс инноваций, применение новых подходов к организации обучения как в средних общеобразовательных учреждениях, так и высших. Французское слово «innovation» восходит к латинскому слову, имеющему значение «обновление», «перемена». Следовательно, инновация - это нововведение, новшество.

Образовательные и инновационные технологии в вузе представляют собой системный психолого-педагогический комплекс, который состоит из специального подбора и компоновки дидактических форм, методов, способов, приёмов и условий обучения.

Реализуя этот комплекс мы меняем форму поведения и деятельности обучающихся, совершенствуем интеллектуальное творчество преподавателя. В процессе использования педагогических технологий происходит ориентация не на достижение какой-то одной цели, а на универсализацию подходов к изучению учебного материала.

Креативный подход к профессиональной подготовке в сфере новых цифровых технологий в системе образования служит важным движущим фактором в самостоятельной практической деятельности.

Предлагается использовать нейросети для разработки интерактивных занятий по русскому языку, что позволит студентам лучше понять грамматику и правила языка с помощью визуализации и интерактивных упражнений.

Искусственный интеллект- это «комплекс технологических решений, имитирующих когнитивные функции человека (включая самообучение и поиск решений без заранее

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

заданного алгоритма) и позволяющий при выполнении задач достигать результаты, как минимум сопоставимые с результатами интеллектуальной деятельности человека» [1, с.2].

В качестве разновидности искусственного интеллекта применяют нейросети. Применение искусственного интеллекта не обошло и сферу образования. Искусственный интеллект активно распространяется, открывает возможности для улучшения и преподавания, и обучения. Персонализированное обучение позволяет раскрыть потенциал, повысить уровень самостоятельности, развить навыки, которые необходимы для жизни в современном обществе. Вот несколько примеров использования искусственного интеллекта в подготовке к занятиям по русскому языку.

-Создание тестов, заданий на заполнение пропусков, текстов для чтения, адаптированных под определённый уровень владения русским языком студентов иной лингвокультурной среды.

Для создания всего этого, необходимо обратиться к любой нейросети для создания текстов. Наиболее развитая нейросеть на сегодняшний момент это бесплатный chatGPT. Он был создан компанией OpenAI и запущен для широкого круга пользователей в конце ноября 2022 года. Этот чат-бот способен по запросу создавать текстовый контент, включая статьи, сочинения, рефераты, дипломы, решать головоломки, создавать тестовые игры, тесты, объяснять сложные понятия. Этот чат-бот пока ещё является англоязычным, но может воспринимать запросы и отвечать на русском языке (рис.1).

«Тест по русскому языку»

Количество вопросов: 10

Рассматриваемые темы: словарный запас, грамматика, структура предложения

Примеры вопросов:

1.Найдите из перечисленного проблему сельского хозяйства?

деградация земель

рост транспорта

высокая модернизация

избыток кадров

2. Из скольких частей состоит сложное предложение?

Из 2-х

Из 3-х

Из 5

Нет правильного ответа

Выберите вариант женского рода:

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Отметка, кулинария, сметана, тарелка
Костюм, халат, блюдо, вечер
Мнение, утро, увеличение, решение
Учебники, автоматы, конспекты, прогулы

Рис.1 Пример ответа нейросети chatGPT на запрос о создании теста для изучающих русский язык.

- Создание игр для изучения русского языка. При запросе к chatGPT о создании игры также могут быть заданы определённые параметры: форма занятия (онлайн или офлайн), количество студентов, их уровень владения русским языком, тема игры и другое. В качестве примера предложенной нейросетью игры могут служить следующие рекомендации (рис.2).

Пожалуйста, создайте игру, в которую можно будет играть во время занятия со студентами, изучающие русский язык на уровне 1.

Вот игра, с помощью которой вы можете помочь студентам, изучающим русский язык на уровне 1, практиковать и закреплять свои языковые навыки:

Название игры: «Русские шарады»

Количество игроков: 2 или более

Как играть:

1.Разделите аудиторию на команды по два или более игроков.

2.Каждая команда выбирает игрока, который начнёт игру, произнося слово или фразу на русском языке, не говоря ни слова

Рис. 2. Пример ответа нейросети chatGPT на запрос о создании игры для изучающих русский язык

Также существует русскоязычные чат-боты, к примеру чат-бот в Telegram Edya- Нейросеть. Он отвечает на вопросы по текстовому запросу.

Особенностью этой нейросети является то, что она часто по-разному отвечает на одни и те же вопросы, что является положительным моментом при использовании её как

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

коммуникативного тренажёра при изучении русского языка с группой обучающихся: каждый студент может задать ей один и тот же вопрос, при этом получить разные ответы. Использование Edya- Нейросеть в обучении русскому языку мотивирует студентов, развивает их вовлечённость, стремление выучить новые вопросы, чтобы задать их нейросети (рис.3).

Edya- Нейросеть

Как тебя зовут?

Меня зовут Степан.

Как тебя зовут?

Меня зовут Анвар.

Сколько тебе лет?

Мне 20 лет.

Сколько человек в вашей семье?

В моей семье три человека.

Из кого состоит ваша семья?

Моя семья состоит из двух родителей и двух младших братьев.

У тебя есть сестра?

Да, у меня есть сестра.

Какое животное тебе нравится?

Мне нравится кошка.

Сколько тебе лет?

Мне 18 лет.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

-Быстрый поиск грамматических правил с помощью нейросети.

Преподаватели могут использовать нейросети для методической работы. У нейросети можно получить ответы на вопросы по изучению русского языка:

-список учебников для изучения языка и книг для чтения;

-рекомендации по эффективному обучению и изучению русского языка: постоянный просмотр фильмов, видео; очные и онлайн интерактивные занятия; участие в онлайн-сообществах по изучению русского языка.

ChatGPT может писать электронные письма, эссе, стихи.

Большим преимуществом нейросетей по сравнению с поисковыми системами в Интернете является то, что нейросеть выдаёт один ответ, который при необходимости можно уточнить и запросить его детализацию. В свою очередь поисковые системы выдают в ответ на каждый запрос огромное количество сайтов, на просмотр и изучение контента которых может уйти значительное количество времени, при этом ответ может быть и не найден.

Также важно проверять информацию, которую выдаёт искусственный интеллект и не полагаться на её достоверность. Структура занятия и контроль за образовательным процессом должен оставаться за преподавателем, а искусственный интеллект будет только в помощь при реализации творческого подхода к обучению, креативности в реализации педагогического дизайна обучения.

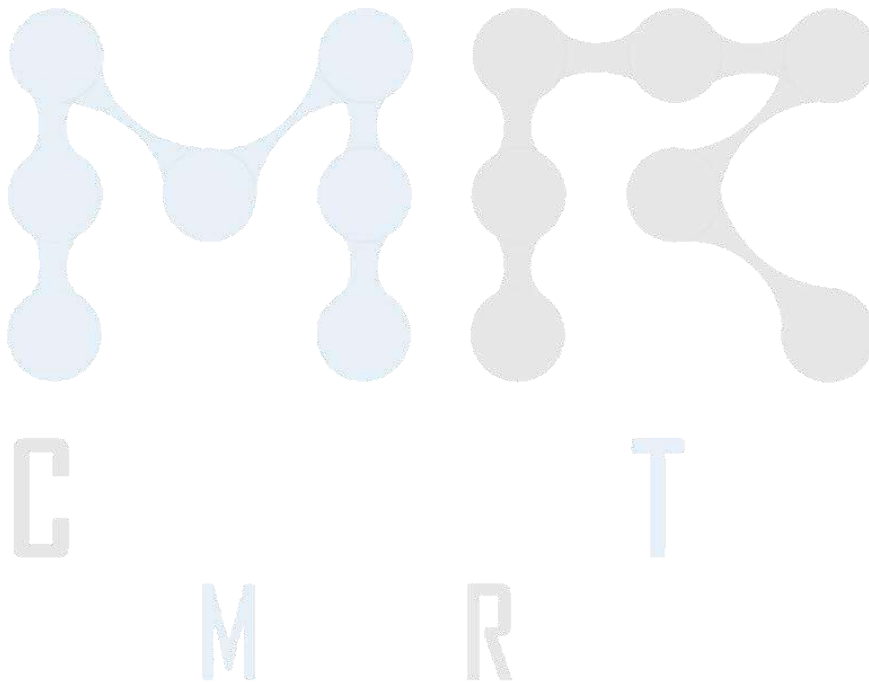
Ценностью такого подхода обучения заключается в том, что, являясь новой интегрированной технологией обучения, она может синтезировать методы, средства и формы обучения и контроля, применяемые для достижения требуемого уровня компетентности обучающихся, которые обеспечат ожидаемые высокие педагогические результаты.

В заключении скажем что искусственный интеллект в практике преподавания способствует тому, что процесс обучения станет более увлекательным, персонализированным, стимулирует развитие познавательной активности и мотивации у студентов, может повысить значимость роли преподавателя в обучении [4].

Важно чтобы преподаватель контролировал и внимательно отслеживал качество контента нейросети и чат-ботов чтобы не снизилось качество образовательного материала.

Список литературы:

1. Гафаров Ф. М., Галимянов А. Ф. Искусственные нейронные сети и приложения: учебное пособие. Казань: Издательство Казанского университета, 2018. 121 с.
2. Smith A. What is ChatGPT ? And will it steal our jobs? 2023. Available at: <https://www.context.news/ai/what-is-chatgt-and-will-it-steal-our-jobs>.
3. Минязова Е. Р. «Большие данные» и персонализированное обучение // Высшее образование сегодня. 2022 №5-6. С. 41-45. DOI: 10.18137/RNU.NET. 22.05-06.P.041.EDN CPLGXK.
4. Искусственный интеллект в образовании: Изменение темпов обучения. Аналитическая записка ИИТО ЮНЕСКО / С. Даггэн; ред. С. Ю. Князева; М.: Ин-т ЮНЕСКО по информационным технологиям в образовании, 2020.
5. Как применяется ИИ в образовании сегодня // EduTech. СберУниверситет. 2022 №4 (49). С. 35-37.



THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

A study of the amount of time required to open a business as a key element in the implementation of innovative digital technologies in the system of strategic development of startup projects

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Abstract:

Modern trends in economic development involve the use of various forms of doing business, among which the so-called startup projects stand out. Such projects allow creating innovative digital technologies for strategic development. At the same time, the time factor is significant, which affects the implementation of such projects. Taking this into account, the work analyzes the time characteristics required to open a business and the number of permitting procedures. The wavelet coherence procedure was used for the analysis.

Key words: Business, Analysis, Innovation, Startup, Time factor, Digital technologies, Permitting procedures, Gender factor

Introduction

Modern economic development involves the use of various forms and directions of doing business. At the same time, special attention should be paid to the innovative aspects of the formation of new ways of implementing business ideas [1]-[3]. Among such forms of implementing innovative solutions, startup projects stand out [4], [5], which are able to attract the necessary resources in a short time and implement the tasks in the shortest possible time. At the same time, the implementation of startup projects can be considered as a certain form of doing business.

One of the characteristics of doing business should be considered the time required to open it. Such time can be a key characteristic of the implementation of innovative digital technologies in the system of strategic development of startup projects. In turn, such time characterizes the ease and accessibility of implementing startup projects from the point of view of a separate country where such projects are implemented. This approach allows for a comparative assessment of the effectiveness of implementing innovative digital technologies based on startup projects. It is important to consider countries for comparison according to the relevant criterion, for example: common territorial distribution, level of economic development, etc. For the purposes of such comparison, various methods and approaches are used, both classical from the point of view of economic science [6]-[17], and special ones that can give certain hints for the implementation of innovative ideas of the corresponding analysis [18]-[22].

At the same time, the time required to open a business is affected by the number of permitting procedures, which allows for extensive comparative studies. Here, various methods and approaches can also be used to conduct the necessary research [23]-[32].

Thus, the main objective of this study is to conduct a comparative analysis of the amount of time required to open a business as a key element of the implementation of innovative digital technologies in the system of strategic development of start-up projects. For these purposes, it is

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

necessary to consider both the time characteristics and the number of necessary procedures from the point of view of individual countries. It is also advisable to consider the gender aspect in this matter (for example, taking into account the gender of the business manager).

Related work

There are many works on the topic of this study that concern both theoretical and practical aspects of solving individual problems. For a better understanding of the purpose of our study, let us consider some of them.

J. I. Halman and G. T. Burger study the issues of startup project launch efficiency [33]. In this case, special attention is paid to the relationship between the project owner and its management. This allows for a better understanding and implementation of the project goals, scope and objectives at an early stage. Attention is also paid to the time of implementation of such goals, which correlates with the tasks set in our study.

A. Kolosok and I. Koniukh consider a number of theoretical and practical issues related to the prospects for the creation, implementation of startup projects and their further development [34]. The authors conduct a comprehensive analysis of the stages of startup projects and components, where attention is also paid to the time of opening the relevant business, the number of necessary permitting procedures in Ukraine. This allows for a better understanding of the problems of startup projects. However, the work does not include a comparative analysis, which does not allow for broad generalized conclusions.

In the study [35], the authors conduct a comprehensive literature review to examine key issues in the strategic communication of startup projects. The results of the review allow us to identify a number of areas in which startups face strategic communication problems. Among such problems are the collection of necessary permits and the time required to open the relevant business. Therefore, it is important to plan each stage of the implementation of startup projects, where it is important to take into account the communication channels. This emphasizes the importance of various forms of planning and appearance in the strategic communication of startups [35].

R. Gattringer and M. Wiener also analyze the key factors of startup projects implementation, where they highlight the initial stage of creation of this type of business [36]. The authors show that trust and fear of losing know-how are not too worrying, due to the less binding form of cooperation and choice of company (lack of competitors) [36]. Here the time factor for implementation of the decisions taken is more significant.

G. Krzos and K. Olek consider the theoretical prerequisites for managing startup projects in the context of their development trajectories [37]. At the same time, the authors emphasize the growing interest in startups among scientists and practitioners. For these purposes, data from a number of European countries are considered to unify their results and make recommendations. This study also emphasizes the importance of the topic under consideration in our study.

At the same time, it is necessary to emphasize the importance of conducting a comparative analysis, which will allow a deeper understanding of the research problem. Therefore, a number of countries are considered below, for which the corresponding analysis is conducted. Among such

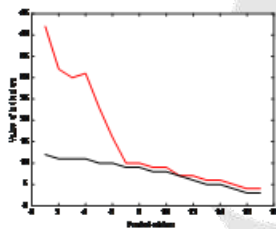
THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

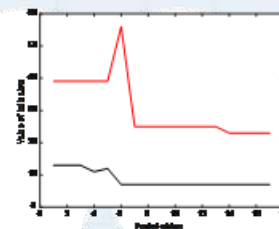
countries, the following were chosen: Moldova, Bulgaria, Estonia and Latvia. This choice is related to approximately the same socio-economic conditions of their development.

Time costs for starting a business and the number of permit procedures for a number of studied economies of individual countries

This section examines the time it takes to start a business and the number of permit procedures for individual countries used in the study. On Fig. 1 and Fig. 2 present the relevant data in the form of graphs for the period 2003-2019 (all data from <https://data.worldbank.org/indicator>).



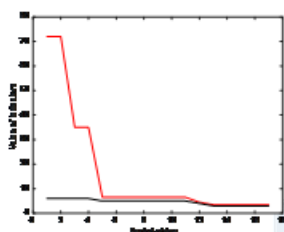
a) Moldova



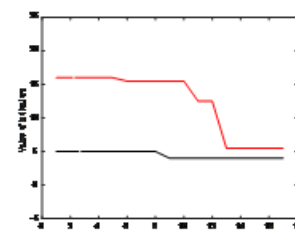
b) Bulgaria

Figure 1: Time costs for opening a business and the number of permit procedures in Moldova and Bulgaria

On Fig. 1 and Fig. 2, the time required to open a business (days) is shown in red, and the number of permit procedures (quantity) is shown in black.



a) Estonia



b) Latvia

Figure 2: Time costs for opening a business and the number of permit procedures in Estonia and Latvia

First of all, it should be noted that the time costs significantly exceed such an indicator as the number of permitting procedures. This is understandable, since each permitting procedure requires some time to resolve it. Thus, the reduction of such procedures naturally leads to a reduction in the

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

time costs of starting a business. Consequently, this can be considered as one of the key factors in the implementation of innovative digital technologies in the system of strategic development of startup projects.

For example, for Moldova, the number of permitting procedures has decreased from 12 in 2003 to 3 in 2019 (Fig. 1a). Accordingly, the time spent on starting a business has decreased from 42 days to 4 days. Until 2008-2009, time costs were reduced at a faster rate than the number of permitting procedures. Most likely, against the background of the reduction of permitting procedures, there was also a simplification of such procedures themselves. A more qualified answer to this question will help to conduct a comparative dynamics of the indicators under consideration. This will be done in the next section.

The data from Bulgaria also shows a reduction in both permitting procedures and the time to open a business – from 13 to 7 and 39 to 23, respectively (Fig. 1b). But compared to the data for Moldova, the reduction is not as significant. Therefore, in Moldova, the conditions for implementing innovative digital technologies through start-up projects are more attractive.

Estonia is characterized by the greatest reduction in the time to start a business in the period under study. Their data in Fig. 2a show that the time to start a business in Estonia has decreased from 72 days to 3.5 days. At the same time, the number of permit procedures has decreased from 6 to 3. Thus, it can be said that the time to complete such permit procedures has decreased. Such a significant reduction in time costs has been observed since 2007.

The corresponding data from Latvia show that the time to open a business has decreased from 16 days to 5.5 days, and the number of permitting procedures from 5 to 4 (Fig. 2b). Again, there is a significant reduction in the time spent on completing such permitting procedures. However, such a significant reduction in time costs occurred only in 2015.

Based on the above, we can say that Estonia is a leader in terms of starting a business, including the implementation of innovative digital technologies through startup projects. These data should be considered as a benchmark in forming the conditions for the development of startup projects, the development of appropriate forms of doing business.

At the same time, despite the different trends in the dynamics of the data under consideration (time spent on opening a business and the number of permitting procedures), the same trends should be noted. The essence of such trends lies in both reducing time costs and reducing permitting procedures. Although the timing of such changes for each country is individual, this emphasizes their differences in economic development, the need to use start-up projects, and the possibility of their effective implementation.

If we talk about the gender factor in starting a business in Moldova, Bulgaria, Estonia and Latvia, it should be noted that such differences are not observed. The time costs and the number of permit procedures in the countries under study for starting a business are the same in the gender aspect and reflect the general corresponding indicators (Fig. 1, Fig. 2).

Next, we will look in more detail at the analysis of the mutual dynamics between the data that reflect the time spent on opening a business and the number of corresponding permitting procedures. This will help to understand some of the interrelations between the data under study.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Comparative assessment of the mutual dynamics of the studied data

To examine the relationship between time costs and the number of permit procedures, various methods and approaches can be used, among which it is advisable to highlight the wavelet coherence methodology [11], [20], [25], [29]. This methodology operates with data presented in the form of time series and allows us to evaluate the mutual dynamics on different time horizons. For these purposes, the concept of the depth of cross-links is used. This allows us to evaluate in detail the dynamics of mutual links and understand the essence of the study.

Let's consider two time series ($k(t)$ and $d(t)$), each of which reflects the dynamics of an indicator over time t , then we can determine the value of wavelet coherence between the following series of data using the following formula [38]-[40]:

$$Q^2(a, c) = \frac{|\Omega(a^{-1}W_{k(t)d(t)}(a, c))|^2}{\Omega(a^{-1}|W_{k(t)}(a, c)|^2)\Omega(a^{-1}|W_{d(t)}(a, c)|^2)},$$

where:

$W(a, c)$ – values of transverse wavelet spectra,

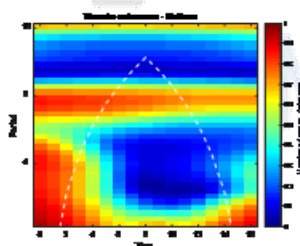
a, c – the scale and center of time localization that determine the scale of the wavelet transform,

$k(t), d(t)$ – series of data that we study,

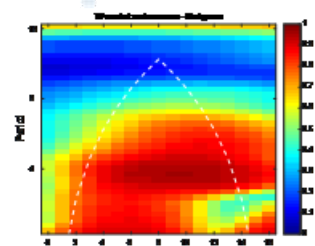
Ω – smoothing operator,

$Q^2(a, c)$ – square of the wavelet coherence coefficient. $0 \leq Q^2(a, c) \leq 1$. If these values tend to zero, then we have a weak correlation. Otherwise we have a strong correlation [39], [40].

On Fig. 3 presents estimates of wavelet coherence between the time characteristics required to open a business and the number of permitting procedures in countries such as Moldova and Bulgaria.



a) Moldova



b) Bulgaria

Figure 3: Wavelet coherence estimates between the time characteristics required to start a business and the number of permit procedures in countries such as Moldova and Bulgaria

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

On Fig. 4 presents estimates of wavelet coherence between the time characteristics required to open a business and the number of permitting procedures in countries such as Estonia and Latvia, respectively.

The data presented in Fig. 3 and Fig. 4 reflect the mutual dynamics of the data, which is shown in Fig. 1 and Fig. 2, respectively, taking into account the factor of reducing the time of each permitting procedure.

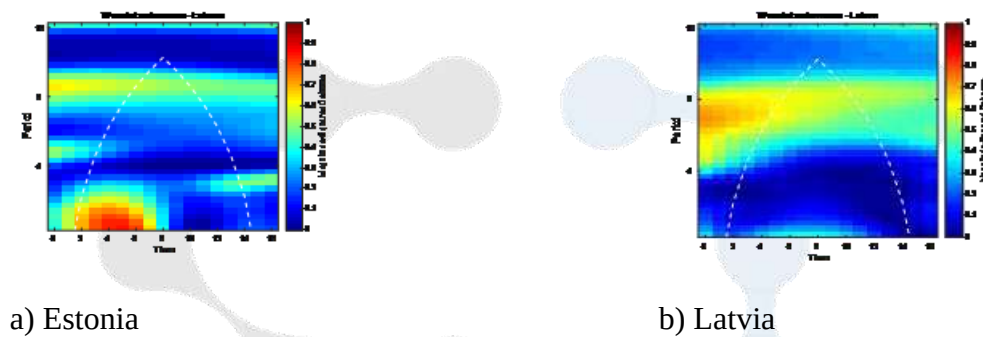


Figure 4: Wavelet coherence estimates between the time characteristics required to start a business and the number of permit procedures in countries such as Estonia and Latvia

Analyzing the data in Fig. 3a, we can talk about the coincidence of the trends between the time characteristics required to open a business and the number of permitting procedures in the short term. This fully explains the changes in both the time required to open a business and the reduction in the number of permitting procedures.

A similar conclusion applies to the data for Bulgaria (Fig. 3b).

Based on the data for Estonia (Fig. 4a), it follows that the absolute agreement between the time required to start a business and the number of permit procedures is fragmented.

Wavelet coherence estimates for Latvian data show no significant correlation between the time required to start a business and the number of permit procedures (Fig. 4b).

Thus, it should be said that in Estonia and Latvia there is a significant reduction in the time required to formalise doing business due to a reduction in the time required for individual permit procedures, and not due to their number as a whole.

Conclusion

The article considers the conditions for the effective implementation of the initial stage of startup projects development. For these purposes, the amount of time required to open a business as a key element in the implementation of innovative digital technologies is considered. The relationship with this time and the number of permitting procedures for doing business is also analyzed.

For the purposes of analysis, the relevant data are considered for individual countries: Moldova, Bulgaria, Estonia and Latvia.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Based on wavelet coherence estimates, the relationship between the dynamics of the parameters under study within each individual country is considered. A conclusion is made about the factors reducing the time to open a business.

The results obtained can be used to plan the organization of opening and running startup projects as a direction for the implementation of innovative digital technologies.

References:

1. Kuzemin, A., & Lyashenko, V. (2008). Analysis of Spatial-temporal Dynamics in the System of Economic Security of Different Subjects of Economic Management. *International Journal Information Technologies and Knowledge*, 2(3), 234-238.
2. Omarov, M., Tikhaya, T., & Lyashenko, V. (2019). Internet marketing metrics visualization methodology for related search queries. *International Journal of Advanced Trends in Computer Science and Engineering*, 8(5), 2277-2281.
3. Lyashenko, V. (2014). Efficiency of bank crediting of real sector of economy in the context of separate banking groups: an empirical example from Ukraine. *International Journal of Accounting and Economics Studies*, 2(2), 74-79.
4. Yudina, N. V. (2017). Methods of the startup-project developing based on 'the four-dimensional thinking' in information society. *Маркетинг і менеджмент інновацій*, (3), 245-256.
5. Nurmaxamadovna, G. S. (2021). Start-Up: Essence and Main Components of Development. *Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali*, 1(6), 264-270.
6. Baranova, V., Zeleniy, O., Deineko, Z., & Lyashenko, V. (2019, October). Stochastic Frontier Analysis and Wavelet Ideology in the Study of Emergence of Threats in the Financial Markets. In *2019 IEEE International Scientific-Practical Conference Problems of Infocommunications, Science and Technology (PIC S&T)* (pp. 341-344). IEEE.
7. Азаренкова, Г., & Ляшенко, В. (2009). Відношення переваг у порівняльній оцінці діяльності банків. *Банківська справа*, 5, 65-72.
8. Ляшенко В. В. (2007). Интерпретация и анализ статистических данных, описывающих процессы экономической динамики. *Бизнес Информ*, 9(2), 108-113.
9. Слюніна, Т. Л., Бережний, Є. Б., & Ляшенко, В. В. (2007). Розвиток вітчизняної мережі банківських установ: особливості та регіональні аспекти. *Вісник ХНУ ім. В. Н. Каразіна. Економічна серія*, 755. 84-88.
10. Kuzemin, A., & Lyashenko, V. (2006). Fuzzy set theory approach as the basis of analysis of financial flows in the economical security system. *International Journal Information Theories & Applications*, 13(1), 45-51.
11. Vasiurenko, O., Lyashenko, V., Baranova, V., & Deineko, Z. (2020). Spatial-Temporal Analysis the Dynamics of Changes on the Foreign Exchange Market: an Empirical

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Estimates from Ukraine. *Journal of Asian Multicultural Research for Economy and Management Study*, 1(2), 1-6.

12. Mustafa, S. K., Ayaz, A. M., Baranova, V., Deineko, Z., Lyashenko, V., & Oyouni, A. A. A. (2020). Using wavelet analysis to assess the impact of COVID-19 on changes in the price of basic energy resources. *International Journal of Emerging Trends in Engineering Research*, 8(7), 2907-2912.

13. Kots, G. P., & Lyashenko, V. (2012). Banking sectors of the economies of European countries in the representation of statistical interrelation between indices that characterize their development. *European Applied Sciences*, 1, 461-465.

14. Dobrovolskaya, I., & Lyashenko, V. (2013). Interrelations of banking sectors of European economies as reflected in separate indicators of the dynamics of their cash flows influencing the formation of the resource potential of banks. *European Applied Sciences*, 1-2, 114-118.

15. Kuzemin, A., & Lyashenko, V. (2009). Methods of comparative analysis of banks functioning: classic and new approaches. *Information Theories & Applications*, 16(4), 384-396.

16. Kuzemin, O., & Lyashenko, V. Microsituation Concept in GMES Decision Support Systems/A. Kuzemin, V. Lyashenko. *Intelligent Data Processing in Global Monitoring for Environment and Security* (pp. 217–238).—2011.—P, 217-238.

17. Куштим, В. В., & Ляшенко, В. В. (2007). Динаміка розвитку банківського сегмента міжнародного фінансового ринку. *Фінанси України*, (12), 96-105.

18. Lyashenko, V., Abu-Jassar, A. T., Yevsieiev, V., & Maksymova, S. (2023). Automated Monitoring and Visualization System in Production. *International Research Journal of Multidisciplinary Technovation*, 5(6), 9-18.

19. Deineko, Zh., & et al.. (2021). Features of Database Types. *International Journal of Engineering and Information Systems (IJEAIS)*, 5(10), 73-80.

20. Pyrohova, S., Gudymenko, V., & Lyashenko, V. (2024). Dynamics of commodity indices and shares of manufacturing companies as a factor in managing the assortment and inventory of an enterprise. *Multidisciplinary Journal of Science and Technology*, 4(3), 176-185.

21. Vasiurenko, O., Baranova, V., & Lyashenko, V. (2024). Probability distributions of interest rates on loans and deposits in a study of banking activities. *Multidisciplinary Journal of Science and Technology*, 4(1), 49-56.

22. Al-Sharo, Y., Abu-Jassar, A., Vasiurenko, O., & Lyashenko, V. (2023, December). Comparative Analysis of Data Dynamics Based on Wavelet Coherence Using Higher-Order Moments. In *2023 2nd International Engineering Conference on Electrical, Energy, and Artificial Intelligence (EICEEAI)* (pp. 1-5). IEEE.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

23. Баранова В. В., Ляшенко В. В. Інфляція, вартість банківських ресурсів та мережа банківських філій – окремі аспекти впливу та взаємозалежності. Економіка розвитку. 2007. № 4. С. 64–67.
24. Pyvavar I., Sokolova N., Lyashenko V. Estimating the Relationship Between Inflation and Tax Revenues in Selected European Countries: Austria, Germany, France, United Kingdom and Italy // International Journal of Academic Accounting, Finance & Management Research (IJAAFMR). – 2023. – Vol. 7(4), P. 55-62.
25. Vasiurenko, O., & Lyashenko, V. (2020). Wavelet coherence as a tool for retrospective analysis of bank activities. *Economy and forecasting*, (2), 32-44.
26. Baranova, V., Orlenko, O., Vitiuk, A., Yakimenko-Tereschenko, N., & Lyashenko, V. (2020). Information system for decision support in the field of tourism based on the use of spatio-temporal data analysis. *International Journal of Advanced Trends in Computer Science and Engineering*, 9(4), 6356-6361.
27. Коц, Г. П., Кузьомін, О. Я., & Ляшенко, В. В. (2010). Сучасні методи аналізу функціонування банків: розв'язання проблемних аспектів. *Восточно-Европейский журнал передовых технологий*, 5(3 (47)), 48-52.
28. Lyashenko, V., Bilotserkivskyi, O., Pyvavar, I., & Kots, H. (2021). Mutual Dynamics of Certain Types of Bitcoin: Data from Wavelet Coherence. *Journal of Engineering, Technology, and Applied Science (JETAS)*, 3(2), 58-65.
29. Shelud'ko, N., Vasiurenko, O., Lyashenko, V., & Morozova, N. (2020). Gold and Bitcoin Price Dynamics as a Reflection of Investor Sentiment. *Journal La Bisecoman*, 1(4), 19-25.
30. Pogorelenko, N., Lyashenko, V. V., & Ahmad, M. A. (2016). Wavelet Coherence as a Research Tool for Stability of the Banking System (The Example of Ukraine). *Modern Economy*, 7(09), 955-965.
31. Chetverykov, G., Kobylin, O., Lyashenko, V., & Deineko, Z. (2019). Wavelets as a Tool for Data Mining Technology. *Інформація, комунікація, суспільство*, 249-250.
32. Lyashenko, V., Serhiienko, O., & Bilotserkivskyi, O. (2022). Dynamics of Changes in Commodity Indices for Commodities: Wheat, Corn, Soybeans, Sugar, Cocoa. *Dynamics*, 6(10), 74-80.
33. Halman, J. I., & Burger, G. T. (2002). Evaluating effectiveness of project start-ups: an exploratory study. *International Journal of Project Management*, 20(1), 81-89.
34. Kolosok, A., & Koniukh, I. (2017). Definition of startup projects, main problems and prospects of development. *Economic journal of Lesya Ukrainka Volyn National University*, 4(12), 62-67.
35. Wiesenbergh, M., Godulla, A., Tengler, K., Noelle, I. M., Kloss, J., Klein, N., & Eeckhout, D. (2020). Key challenges in strategic start-up communication: A systematic

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

literature review and an explorative study. *Journal of Communication Management*, 24(1), 49-64.

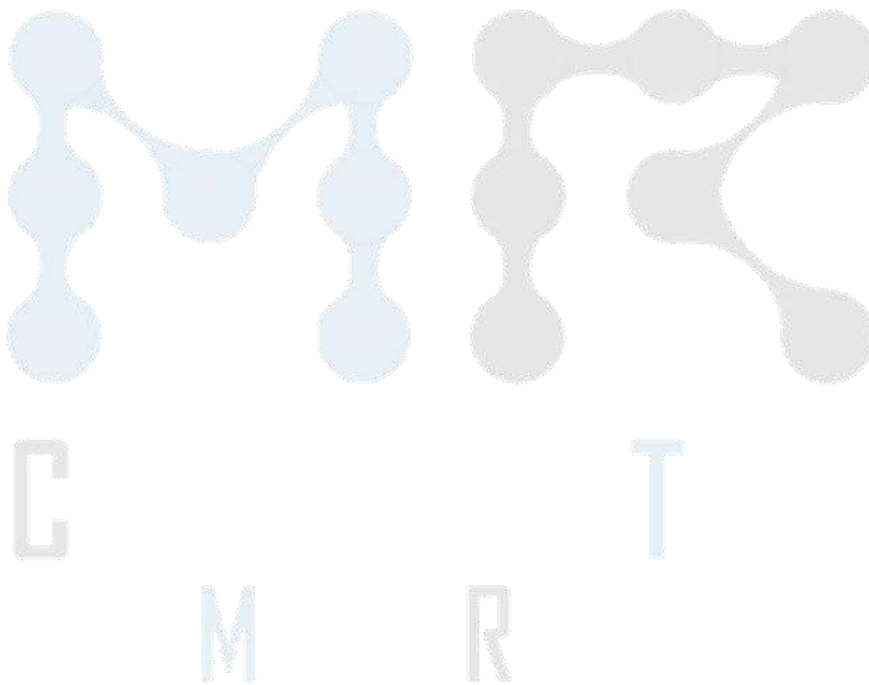
36. Gattringer, R., & Wiener, M. (2020). Key factors in the start-up phase of collaborative foresight. *Technological Forecasting and Social Change*, 153, 119931.

37. Krzos, G., & Olek, K. (2025). Theoretical Assumptions of the Research Project “Start-Up Project Management Methodology” in the Context of Start-Up Development Trajectories. *Vision*, 11397-11406.

38. Torrence, C., & Webster, P. J. (1999). Interdecadal changes in the ENSO–monsoon system. *Journal of climate*, 12(8), 2679-2690.

39. Heil, C.E., & Walnut, D.F. (1989). Continuous and discrete wavelet transforms. *SIAM review*, 31(4), 628- 666.

40. Kingsbury, N. (1999). Image processing with complex wavelets. *Philosophical Transactions of the Royal Society of London. Series A: Mathematical, Physical and Engineering Sciences*, 357(1760), 2543-2560.



THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Methods, techniques of hand placement on violins,
basic change of position and pure intonation

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Abstract

The article forms a position implies the position of the left hand and fingers in one or another part of the fingerboard within one position, the most different positions of the hand and fingers are possible. On the other hand, the same position of the hand and fingers in the same part of the fingerboard can be considered in different positions. The relativity of the concept of position becomes even more obvious when considering numerous examples from violin literature, which use narrowed and expanded finger positions (fifth coverage of the position, decimals, double octaves, etc.).

Keywords: methods / techniques / hand position / double octaves / intonation / violin / change of position / hand position / teacher / pedagogical technology.

Методы, приёмы постановки рук на скрипки,

основные смена позиции и чистое интонирования

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Аннотация: в статье формируется позиция подразумевается положение левой руки и пальцев в той или иной части грифа в пределах одной позиции возможны самые различные положения руки и пальцев. С другой стороны, одно и то же положение руки и пальцев в одной и той же части грифа может рассматриваться в разных позициях. Относительность понятия позиции становится еще более очевидной при рассмотрении многочисленных примеров из скрипичной литературы, в которых используются суженные и расширенные расположения пальцев (квинтовый хват позиции, децимы, двойные октавы и др.).

Ключевые слова: *методы/ приёмы/ позиция рук/ двойные октавы/ интонирования/ скрипка/ смена позиции/ положения руки/ педагог/ педагогическая технология.*

Since time immemorial, music has occupied an important place in human culture. It formed personal qualities in a person, helped him to understand his attitude to the world around him, and also contributed to the reflection of his spiritual world. And this is no accident, because music has the ability to reflect subtle shades of human experiences, can emotionally affect people, influence the development of thinking, consciousness, musicality. In order for a person to be more receptive to beauty, art, feelings and experiences, it is necessary to form this perception from an early age. Singing plays an important role in the development of a child, in the formation of both his musical and personal qualities. It is in singing that a child can show his attitude to music and to what he sings about. But a child is not always able to express all his feelings with the help of his voice. Sometimes something prevents him from revealing his experiences to the fullest. And one of the obstacles to achieving this goal is incorrect vocal performance. A child needs to correctly convey the melody with the help of his

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

voice, it is necessary to know how to do this. Not all children can sing cleanly. The most common problem among children is impure intonation, that is, when a child plays the violin as if he is singing notes inside himself, incorrect thinking is formed inside the child and he does not hit the notes. Incorrect internal singing of notes appears in the head because he himself thinks about it incorrectly. Vocal performance prevents the child from expressing all his feelings and experiences with the help of the voice of the violin. In recent years, the problem of impure intonation in children has been growing. A rare child, learning music, is able to hit the notes right away. Based on this, we can say with confidence that impure intonation is the main problem of beginning musicians. Any music teacher or violin teacher on his professional path encounters difficulties working with children who intonate incorrectly.

The problem of conscious intonation in the violin class in institutions of additional education for children. The main aspects that affect the intonation of the violin were considered: the design of the instrument, musical ear and performance technique. The specifics of the formation of intonation are considered using the example of working on scales. The object of the study of this article is the artistic and pedagogical process in the violin class, the subject of the study is the formation of intonation skills of student violinists. The objectives of the study were to determine the structure and content of intonation skills, establish pedagogical conditions and the specifics of the formation of intonation skills of students in the violin class. The purpose of the study was the theoretical and methodological substantiation of the formation of intonation skills. The greatest music master of the 19th century, Adolphe Sax, sought to eliminate intonation discrepancies between wooden and brass instruments of the brass band, as a result of which a unique musical instrument was born - the violin. Each musical instrument, regardless of the price and country of manufacture, will have its own shortcomings, which will cause deviations in sound. Therefore, knowledge of discordant sounds and the ability to smooth out intonation irregularities of the instrument's scale before and during playing are especially valuable for a performer. In a word, this can be called the skill of intonation, the development of which should be given sufficient attention, the same as work on staging, breathing, sound and technique. This skill will help a future soloist or orchestra (ensemble) artist to comfortably carry out their professional activities and be in demand on the labor market.

Intonation (from the Latin "intono" - "I pronounce loudly") is the embodiment of an artistic image in musical sounds. To intonate (to pronounce, to perform) is one of the forms of human thinking, which shows what is happening in reality. The intonation of violin performers depends on: the design features of the instrument, musical ear and performing technique. 1. Design features of the instrument. Each violin already has its own precise tuning of notes. Each factory that produces a musical instrument has its own feature, for example, different additional fingering, which helps to eliminate inaccuracies in the intonation of this instrument. Different options for mouthpieces and reeds also affect the precise intonation of the instrument. An important step before practicing on the instrument is the ability to tune it. To do this, you need to check that the metal has warmed up to room temperature. Next, you need to turn on such a device so that the sound is in the center and in the green field, by adjusting the fingers. Pressing with oscillation increases intonation, as does an instrument that has heated up during practice. A very important fact to note is that there is a single tendency, due to which certain notes sound too high or too low. The sounds of B flat and B of the small octave, C, C sharp of the second octave sound below the general tuning, and the note D of the second octave sounds above. Every good musician who wants to play in tune should know the features of his instrument and help himself to align the scale with the help of the embouchure muscles and additional fingering. Also, using a tuner and checking

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

certain sounds for an instrument with a fixed tuning (piano, button accordion, accordion) will help in solving this issue.

2. Musical ear. Musical ear includes the ability of a person to perceive a wide variety of sound properties: pitch, volume, color, etc. The determining factor in the purity of intonation is pitch hearing. Most musicians have relative pitch. Absolute pitch is much less common. Relative pitch allows one to determine the pitch of a sound by comparing it with a sound whose pitch is known, as well as to recognize and reproduce intervals. Absolute pitch allows one to determine the pitch of individual sounds without comparing them with other sounds. Of decisive importance in intonation is relative pitch, the basis of which is the modal sense and interval pitch. Modal sense is the performer's ability to determine the modal function of a particular sound. Interval pitch is the ability to sense and reproduce pitch relationships between two sounds taken simultaneously or sequentially. Interval pitch, which develops on the basis of modal sense, in turn contributes to the development of the latter. When performing melodies that do not go beyond the limits of the modes familiar to him, the musician relies mainly on his modal sense. The importance of interval pitch increases sharply when he is faced with the need to master new modes, chromaticisms, and various modulations. Hearing carries out its intonation functions in two main directions: precise representations of the pitch of sound and control of the extracted sound. It is difficult to overestimate the importance of intonation prehearing. Clear auditory representations largely determine the correct work of the muscles of the performing apparatus, on which, ultimately, the purity of intonation depends. When the sound is already produced, its intonation is controlled by hearing. Thanks to this control, if necessary, the central nervous system sends a signal to the corresponding muscles of the sound apparatus, prescribing to make certain adjustments to their work - inaccurate intonation is corrected. Human hearing is capable of developing. Special exercises for the development of hearing, as well as concentrated practice on the instrument, can bring it to a high degree of perfection. This is exactly the kind of hearing that a violinist needs. Hearing is developed in solfeggio lessons, in the class of ensemble and orchestra. In order to develop melodic and intervallic hearing, to determine the mode in music well - it is necessary to practice solfeggio and write monophonic dictations. Harmonic hearing is developed through polyphonic dictations and exercises where it is necessary to determine the chord or harmonic sequence. The development of inner hearing is impossible without the selection of a melodic pattern, improvisation, transposition of a melody into other keys.

3. Performance technique and purity of intonation. The basis of pure intonation on the violin is the correct work of the performing apparatus, that is, the fingers. All its elements must be correctly placed and developed. In addition, between them and the entire acoustic system of the instrument, that finest coordination must be established, without which pure intonation is impossible. The terms "hand positioning", "finger positioning", "resonator positioning" contain the idea of a certain stativity, which does not correspond to the essence of the work of the performing apparatus, that is, the fingers, because it must be not only strong and hardy, but also mobile and flexible. Exceptional muscle work is necessary for the correct extraction of sounds of different pitches. In essence, each step of the scale requires its own "micro-positioning", an unmistakably felt position of the fingers, resonators. Extraction of sounds of the upper register is especially difficult in this sense. It is often necessary to observe the following picture: the student forms the fingers of the hands absolutely correctly when extracting sounds of the lower and middle registers, the sound quality is quite satisfactory, but as soon as he reaches the upper register, the sound quality deteriorates sharply. To place the fingers of the hands means not only to give them the correct external form, but also to teach

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

the young musician to accurately control the tension and interaction of the muscles of the fingers of the hands - the apparatus in strict accordance with the changing pitch of the extracted sounds. A correct understanding of the tessitura technique helps to solve this problem. When the tessitura increases, the performing apparatus must make the following rearrangements:

1. Increase the density of the finger support. Increasing the density of the finger support increases the sound position, which allows you to relieve the fingers somewhat. Thanks to this, it is possible to produce high sounds without overstraining the fingers and clamping the strings.

2. Increase the internal tension. The internal tension is most easily detected in the apparatus of violin performers. The sound exciter here is the central parts of the fingers. In order to excite the sound, they must be in an elastic state. A relaxed state of the fingers creates the prerequisites for extracting low sounds. Their more elastic state makes it easier to extract high sounds. Similarly, a weakly stretched string produces a lower sound, while in a taut state it sounds higher. The sound exciter on the violin is the complex formed by the fingers, grasping the string and controlling it. By changing the degree of internal tension of the finger muscles, as well as opening and closing the hands of the fingers, the musician can influence the frequency of the sound, therefore, influence the frequency of intonation. A well-placed and strong finger apparatus will allow the violinist, by creating the necessary elasticity in the fingers, to extract sounds in the upper register with a relatively small impact on the string itself. If the fingers are poorly placed, if they are underdeveloped or tired, high sounds will have to be extracted by excessively activating the hands, leading to a clamp, the string. In this case, the sound of the upper register becomes narrow, high-pitched, clamped and dull, the sound breaks, and the finger muscles get tired.

Methodology for working on intonation. Intonation work will be successful only if the teacher is able to convey to the consciousness of his students the full significance and complexity of the problem facing them. After all, performing skills directly depend on intonation. Intonation work should be subordinated to a strict regime and conducted according to a clear plan, and not from time to time. Auditory control over intonation should not stop for a minute. It is absolutely unacceptable to play an instrument with a "loose" or, even worse, "switched off" ear.

A great expert on musical ear S. Maykapar: "It is necessary to take into account the basic requirement of the ear: to give an artistic sound for the starting point, that is, a definitely and beautifully nuanced one. This is necessary so that the ear receives a clear impression, is not irritated, and so that this impression is as deep as possible and remains in the memory for a long time, until we find the correct intonation of the sound. Otherwise, it is difficult for the ear to find a pure, precise interval from a sound that is poor in color. If the original sound is poor in its initial qualities, colorless or ugly in color, then, even with the accuracy of its pitch, finding another sound from it that is precise in pitch will be difficult for the ear." It is advisable to work on intonation on relatively complete musical constructions. The accuracy of intonation of a particular sound or interval should not be sought in isolation from other sounds and intervals of the performed structure, but always in connection with them, in the general intonation context. Only then will the performer be able, relying on the modal-meaningful interrelation of the sounds of the melodic structure, to achieve intonation accuracy, expressiveness and harmony as a whole. In particularly difficult cases, interval control should be called for help. In this case, it is necessary to pay attention not only to adjacent sounds, but also to the intervals between non-adjacent sounds, especially if these intervals form octaves, fifths, fourths, minor seconds,

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

which constitute the intonation basis of the performance. Work on conscious intonation is mandatory for every musician, and it should be started from the first stages of training. It is necessary to observe the accuracy of intonation, be attentive to each false sound, work with the tuner, tuning each sound, this is the only way to develop the musician's ability to correct intonation inaccuracies. It is also important that the student can listen to the music being performed (himself and the musical accompaniment), and find support for precise intonation in the sounding harmony. Some teachers, fighting for the purity of the student's intonation, follow the line of excessive care. Continuous instructions gradually dull the performer's own attention. Entirely relying on the teacher's hearing, he begins to treat his own intonation passively. Thus, it is necessary to ensure that the young musician learns to independently control and change the sound, that is, to work on conscious intonation. The extensive performing and pedagogical practice of violinists clearly demonstrates to us that the performance of long sounds, scales, exercises and etudes directly affects the development of pure intonation.

Использованные литературы:

1. КБ Холиков. [Проблематика музыкальной эстетики как фактическая сторона повествования](#). Science and Education 3 (5), 1556-1561
2. КБ Холиков. [Тяготение основа-основ в музыкальной композиции](#). Scientific progress 2 (4), 459-464
3. КБ Холиков. [Вокальная культура как психологический феномен](#). Актуальные вопросы психологии, педагогики, философии 2 (11), 118-121
4. КБ Холиков. [О принципе аддитивности для построения музыкальных произведений](#). Science and Education 4 (7), 384-389
5. КБ Холиков. [Важнейшие полифонические формы многоголосных произведений](#). Scientific progress 2 (4), 557-562 2 (4), 557-562
6. КБ Холиков. [Уровень и качество усвоения предмета музыки, закрепление памяти и способности учащихся](#). Science and Education 5 (2), 452-458
7. КБ Холиков. [Обученность педагогике к освоению учащихся сложным способам деятельности](#). Science and Education 5 (2), 445-451
8. КБ Холиков. [Обязанности миелина, о левом и правом пороге миелина](#). Science and Education 5 (2), 33-44
9. КБ Холиков. [Эффективные действия сквалан-углеводород тритерпенового ряда и амаранта к заболеваниям рака, опухоли](#). Science and Education 5 (2), 27-32
10. КБ Холиков. [Педагогическое корректирование психологической готовности ребенка к обучению фортепиано в музыкальной школе](#). Science and Education 4 (7), 332-337
11. КБ Холиков. [Защитный уровень мозга при загрузке тренировочных занятиях и музыкального моделирование реальных произведений](#). Science and Education 4 (7), 269-276
12. КБ Холиков. [Прослушка классической музыки и воздействия аксонов к нервной системе психологического и образовательного процесса](#). Science and Education 4 (7), 142-153
13. КБ Холиков. [Новые мышление инновационной деятельности по музыкальной культуры в вузах Узбекистана](#). Science and Education 4 (7), 121-129

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

14. К.Б. Холиков. [Отличие музыкальной культуры от музыкального искусства в контексте эстетики](#). Science and Education 3 (5), 1562-1569.
15. КБ Холиков. [Модели информационного влияния на музыку управления и противоборства](#). Science and Education 4 (7), 396-401
16. КБ Холиков. [Измерение эмоции при разучивании музыки, функция компонентного процессного подхода психологического музыкального развития](#). Science and Education 4 (7), 240-247
17. КБ Холиков. [Манера педагогической работы с детьми одарёнными возможностями](#). Science and Education 4 (7), 378-383
18. КБ Холиков. [Внимания музыканта и узкое место захвата подавление повторения, сходство многовоксельного паттерна](#). Science and Education 4 (7), 182-188
19. КБ Холиков. [Сравнение систематического принципа музыкально психологического формообразования в сложении музыки](#). Science and Education 4 (7), 232-239
20. КБ Холиков. [Мозг и музыкальный разум, психологическая подготовка детей и взрослых к восприятию музыки](#). Science and Education 4 (7), 232-239
21. К.Б. Холиков. [Музыка как релаксатор в работе мозга и ракурс ресурсов для решения музыкальных задач](#). Science and Education. 3 (3), 1026-1031.
22. КБ Холиков. [Характеристика психологического анализа музыкальной формы, измерение ракурса музыкального мозга](#). Science and Education 4 (7), 214-222
23. КБ Холиков. [Абстракция в представлении музыкально психологического нейровизуализации человека](#). Science and Education 4 (7), 252-259
24. КБ Холиков. [Ответ на систему восприятия музыки и психологическая состояния музыканта](#). Science and Education 4 (7), 289-295
25. КБ Холиков. [Проект волевого контроля музыканта и воспроизводимость музыкального произведения](#). Science and Education 4 (7), 189-197
26. КБ Холиков. [Психика музыкальной культуры и связь функции головного мозга в музыкальном искусстве](#). Science and Education 4 (7), 260-268
27. КБ Холиков. [Внимание и его действие обученному музыканту и оценка воспроизводимости тренировок](#). Science and Education 4 (7), 168-176
28. КБ Холиков. [Рост аксонов в развивающийся музыкально психологического мозга в младшем школьном возрасте](#). Science and Education 4 (7), 223-231
29. КБ Холиков. [Аксоны и дендриты в развивающийся музыкально психологического мозга](#). Science and Education 4 (7), 159-167
30. КБ Холиков. [Фокус внимания и влияние коры височной доли в разучивании музыкального произведения](#). Science and Education 4 (7), 304-311

RESPONSIBILITY FOR HEALTH

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Abstract: The article is devoted to the most pressing problem of our time, in which the definition of responsibility for human health and its scientific justification are covered in detail, having deeply studied literature reviews, media information and methodological documents on the topic.

Key words: healthy lifestyle, medical culture, heart attack, atherosclerotic changes, mental shock, stress, physical activity, healthy nutrition, healthy body.

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Annotatsiya: Maqola xozirgi zamonning eng dolzarb muammosiga bag'ishlangan bo'lib, unda mavzu bo'yicha adabiyotlar sharxlari, axborot vositalarining ma'lumotlari va uslubiy xujjatlar chuqur o'rganilgan va inson salomatligi uchun mas'ullikni aniqlash va ilmiy asoslash batafsil, keng yoritilgan.

Kalit so'zlar: sog'lom turmush tarzi, tibbiy madaniyat, yurak xuruji, aterosklerotik o'zgarishlar, ruxiy zarba, zo'riqish, jismoniy faollik, sog'lom ovqatlanish, sog'lom vujud.

ОТВЕТСТВЕННОСТЬ ЗА ЗДОРОВЬЕ

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Аннотация: Статья посвящена наиболее актуальной проблеме современности, в которой подробно освещено определение ответственности за здоровье человека и его научное обоснование, глубоко изучив обзоры литературы, информация средств массовой информации и методические документы по теме.

Ключевые слова: здоровый образ жизни, медицинская культура, инфаркт, атеросклеротические изменения, психическое потрясение, стресс, физическая активность, здоровое питание, здоровый организм.

Kirish. Mamlakatimiz mustaqillikka erishgan dastlabki yillaridanoq yurtboshimiz tashabbusi bilan tanlangan oliyjanob maqsad - "Sog'lom zurriyod – sog'lom farzand – sog'lom avlod" kontseptsiyasi sog'lom turmush tarzini shakllantirish uchun dasturi amal hisoblanadi. Aholi salomatligini muhofaza qilish, sog'lom turmush tarzini shakllantirish, jismoniy sog'lom va ma'naviy barkamol yosh avlodni tarbiyalash davlatimiz rahbari va hukumatimizning diqqat e'tiborida bo'lib kelmoqda. Dunyo olimlarining ko'p yillik ilmiy tadqiqotlari, tajribasiga asoslangan "Sog'lom turmush tarzi" dasturidagi qoida va talabidan bittasi quyidagidir: harakatlanish faolligiga amal qilish, jismoniy tarbiya va sport bilan shug'ullanishdir.

Jahon sog'liqni saqlash tashkilotining taniqli ekspert-mutaxassis olimlarining fikriga ko'ra, agar barcha mamlakat aholisi, birinchi navbatda yoshlar "Sog'lom turmush tarzi" qoidalariga amal qilsalar, har bir insonni sog'lig'ining mustahkamlanishi, mehnat qobiliyatining yaxshilanishi, umr

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

ko'rishning uzayishi, bo'lajak avlod genofondining sog'lamlashtirilishi kabi hayotiy muhim ko'rsatkichlarga erishilishi mumkin bo'lgan ijodiy o'zgarishlarni, ulkan ijtimoiy taraqqiyot va tibbiyot fanidagi olamshumul kashfiyot bilan tenglashtirish mumkin bo'lar ekan.

Shunday qilib, tadqiqot ishining maqsadi inson salomatligi uchun mas'ullikni aniqlash va ilmiy asoslashdan iboratdir.

Material va uslublar: Mazkur tadqiqotning manbalari: mavzu bo'yicha adabiyotlar sharxlari, axborot vositalarining ma'lumotlari va uslubiy xujjatlardir. Mavzu bo'yicha tadqiqotlar jarayonida quyidagi uslublardan foydalanildi: bibliografik (adabiyotlar) va retrospektiv (tarixiy) manbalar taxlili, nazariy umumlashtirish va taqqoslash, tizimli va kompleks yondashish. Tadqiqot yuzasidan axborot manbalari, tarixiy va zamonaviy ma'lumotlarni taqqoslash asosiy usul bo'lib sanaldi.

Natijalar va ular taxlili: Borliqdagi takomillikning bir ko'rinishi, bu—sizning tanangizdir.

Tasavvur qiling, qandaydir sehrar sizga barcha ishlarni - harakat qilish, ta'mirlash, shuningdek, turli aqliy va jismoniy vazifalarni bajaradigan g'alati mashinani tuhfa qildi deylik va uni bajaradigan ishining davomiyligi, ya'ni biologik imkoniyati 160 yil, hatto, undan ham ziyod. Siz uni xuddi to'tiyo kabi ko'zingizga surtib, extiyot qilasizmi? Albatta-da! Siz uning yanada ko'proq uzoqroq samarali ishlashi uchun zamin yaratib berishga harakat qilasiz va xar kuni bu mo'jizaviy mashinani takomillashtirishga intilib, undan hayratga tushasiz.

Endi bir lahza to'xtang va o'ylab ko'ring. Sizga eng ajoyib mashina — o'z tanangizni tuhfa etilgan. Mo'jizalarga to'lib-toshgan bu mashina xech qachon to'xtamaydigan motor (yurak), yonish (hazm qilish a'zolari), filtrlash (jigar), fikrlash (miya va asab), haroratni boshqaruvchi (termoregulyatsiya mexanizmlari, teri va ter ajratish bezlari) tizimlar va hokazolardan iborat. Shu bilan birga mazkur mashina yana ajabtovur kashfiyotga, ya'ni ishlab chiqarishga, xususan, nasl qoldirish qobiliyatiga ham ega.

Ushbu mashinaning samarali ishlashiga imkon bering. Hali sog'lom ekansiz, o'z tanangizga qanday qilib g'amxo'rlik qilish kerak bo'ladi? Tanaga g'amxo'rlik deganda, o'zini ayashni emas, balki muayyan ehtiyotkorlik, hayotning zamonabop talablarini bajarishga qaratilgan holatlarni nazarda tutamiz.

Ko'pchilik odamlarning omadi chopgan —ular sog'lom dunyoga kelishgan. Ammo ular ushbu qimmatbaho boylikni o'z-o'zidan yuzaga kelgan deb hisoblashadi. Xar qanday avtomobilni ham unga nisbatan ehtiyotsizlik bilan qilingan munosabat ishdan chiqarishi mumkin bo'lganidek, o'z vujudingiz, tanangiz bilan ham aynan shu holat ro'y bermog'i ehtimoldan xoli emas.

Ammo inson bari bir o'z organizmining tuzilishi va ular qanday vazifalarni ado etishini bilmasdan, ya'ni tibbiy madaniyati shakllanmasdan turib unga o'z vaqtida g'amxo'rlik qila olmaydi. Shuningdek, aksariyat kishilar inson tanasida ro'y berayotgan jismoniy jarayonlar to'g'risida noto'g'ri gasavvurga ega.

Ko'pchilikning fikricha, bugun shitob bilan zo'riqib ishlash, asabiylashish, serharakat hayot tarzida yashashga urinish istagi yurak xurujini keltirib chiqarar emish. Aslida esa yurak xurujlari yurak toj tomirlarining aterosklerotik o'zgarishlari tufayli torayib qolishi oqibatida ruy beradi. Bu kasallik sekin asta sezilmasdan, yillar davomida yirik va o'rtacha kalibrdagi arteriya qon tomirlari devorida aterosklerotik pilakchalar paydo bo'lishi asnosida yuzaga keladi.

Aynan shuning uchun oldiga nima qo'yilsa, paydar-pay paqqos tushiradigan mijozi zaif tabiatli ayrim kishilar o'z sog'lig'idan bexabar holda yoki salomatliklari uchun g'amxo'rlik qilishni esdan chiqarib, men juda dadilman deb aytaveradi. Yurak xuruji ro'y bergandan so'ng esa,

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

ular buning asl sababini o'zlarining zaifliklaridan deb emas, balki, tig'iz ish, zo'riqish, asabiylik tufaylidir deyishadi.

Keling, zo'riqib ishlash, ruxiy zarba, asabiylashish nimalardan iborat ekanligini birma-bir ko'rib chiqaylik. Eng qadimgi davrdan boshlab hozirgacha inson turli vaziyatlarning dahshatli zulmi ostida yashab kelgan. Bir narsa aniq, hayotning o'zi butunlay asabiylikdan iborat. Yashash butun yigirma to'rt soatda xar tomondan turli-tuman bosimlarni xis etib, boshdan kechirish, demakdir. Biz bilgan inson xech qachon xotirjam, tinch yashamaydi.

Bizning avlod-ajdodlarimiz shunchalik zo'riqish vaziyatida yashashganki, biz xozir o'sha sharoitga mutlaqo chiday olmagan bo'lardik. Ibtidoiy odam xar lahzada uni o'ldirishi yoki tilka-pora qilishi, yemoqchi bo'lgan vaxshiy yovvoyi hayvonlar yemishiga aylanishi mumkin ekanligini xis etib yashagan. Uning ortidan o'ziga o'xshagan og'aynilari ham uni ta'qib etardi. Qabilalar, xatto, oilalar o'rtasida ham doimiy dushmanlik mavjud edi. Shamol, yomg'ir, qor bularning bari dahshatli qo'rquv va zo'riqishni yuzaga keltirar edi. Inson hamisha o'ziga yopirilib keladigan tabiatning buyuk kuchlari — yer yorilishi, zilzila, suv bosishi, dovul, epidemiya, ocharchilik balosidan qutilish uchun shay turar edi. Shunday ekan, ruxiy zarba, zo'riqish inson uchun yangilik emas.

Biz ishonamiz, inson o'ziga yopirilgan eng og'ir sinovga chidaydi. Buning uchun jonli aql, hamda sog'lom vujud bo'lsa kifoya. Ana shuning o'zi tabiiy tanlanish bo'la oladi.

Yurak xastaliklari xozirgi zamon kishisiga hamroxlik qiluvchi asabiylik va zo'riqishlarning doimiy yo'ldoshi emas, albatta. Bizning ajdodlarimiz ana shu jixatdan yanada og'irroq sharoitlarda umrguzonlik qilishgan. Ularning chidamli ekanligiga sabab esa ochiq ko'ngillilik, tabiiy oziq-ovqat, hamda yuksak darajadagi jismoniy faollik hisoblanadi.

Ammo qadimul ayyomda qanday bo'lsa, xozir ham aynan shunday bo'lmog'i kerak. Kuchli, mustahkam va sog'lom tanaga ega bo'lsangiz, xar qanday hayotiy mashaqqatlarga qarama-qarshi tura olasiz. Salomatlik, kuch-quvvat, sabr-toqat, hayotiy kuch zaxirasiga egalik, turli xil asabiylik, hamda hayotdagi noxushliklarga qarshi sizning qurolingiz bo'la oladi.

Dalillarga murojaat qilaylik. Axir ayni paytda biz shafqatsiz, jinoyatkorona, qo'pol va xis-tuyg'ulardan maxrum dunyoda yashab turibmiz-ku! Zaif, notavonlar uchun azob uqubat-ku!

Shuning uchun ongli yashash — tiriklikning birinchi qonuni. Biz, yer yuzida yashovchilar, dadil va sog'lom bo'lishimiz, toki me'yordagi hayot quvonchini ta'minlash uchun kurash olib borishimiz lozim. Xox boy, o'rta xol va kambag'al bo'liylilik, o'z salomatligimizni tabiiy ozuqa bilan ta'minlab, jismoniy faollikni ta'minlashimiz darkor.

Sog'lig'imizni aslo boylikka almashtirmaylik. Dunyoda shunday loqayd odamlar ham borki, ular 15-20 yillar davomida o'tirib olib «pul topish»ga mukkasidan berilib ketishadi. Shundan so'ng yuragi xurujga uchrasa yoki biror xastalikka duchor bo'lsa, shunday deydi: «Men nixoyatda berilib, kuchim boricha ter to'kdim, barcha kasalliklarim asabiylik, zo'riqish tufayli». Bularning barchasi safsata! Agar bu odamlar o'z organizmiga yetarli darajada e'tibor berishganida, pul ham topgan, o'zlarining sog'lig'ini ham mustahkamlagan, quvongan ham bo'lishar edi.

Biz badavlat kishilarning bir necha bor: «Men o'z sog'lig'im uchun barcha boyligimni bergan bo'lardim», deganini eshitganmiz. Ammo ular biroz kallani ishlatib, sog'lom fikr yuritishganida, unisiga ham, bunisiga ham egalik qilgan bo'lishardi. Buning uchun ulardan bor-yo'g'i inson organizmining tuzilishi, uning vazifalari to'g'risida oddiygina bilim-u, sog'lom fikr va turli xil suiste'molliklardan o'zini tiya bilishi talab qilinadi, xolos.

Aksariyat odamlarda amal, martaba ilinjida yillab vaqt sarflashsa-da, ammo o'z tanasini

mukammal xolga keltirish uchun nimalar qilish va qilmaslik kerakligini bilishga besh daqiqa ham vaqt ajratishga istagi yo'q.

Salomatlik uzoq va farovon hayotning asosi hisoblanadi. Salomatlikni qanday tiklash kerak? Inson organizmi mashinada bo'lmagan bitta imkoniyatga ega u ham tiklanish qobiliyatidir (E.Kreyll). Ha, inson organizmining eng ajoyib xususiyatlaridan biri, bu tiklanish hususiyatidir. Agar siz, masalan, bir joyingizni kesib olsangiz, u xolda yangi to'qima jaroxatlangan joyni egallab, bitib ketadi. Deylik, suyak singuday bo'lsa, u oldingisidan ham yanada mustaxkam bo'lib o'sadi. Xar qanday jaroxat tezlik bilan bitib tuzaladi, buning uchun ozgina g'amxo'rlikingiz kifoya.

Sizning yillar davomida noto'g'ri turmush tarzi kechirib, organizmga yetkazgan zararingiz ochiqdan-ochiq ma'lumdir. Shuning uchun organizmga uzoq vaqt davomida extiyotkorlik bilan munosabatda bo'lib, bunda vaqt va xatti- xarakatni ayamasangiz, u yetarli darajada yaxshi tiklanadi. Ammo bu vaqt mo'ljiza kutmang. Organizmni xarob qilish uchun juda ham ko'p vaqt talab etilgan. Endi esa uni tiklashga ham ancha vaqt talab etiladi. Xastalikni davolashdan ko'ra undan erta xabardor bo'lib, uni oldini olgan afzal.

Tabiiy mahsulotlarni tanovul qilish, ya'ni sog'lom ovqatlanish va sog'lomlashtiruvchi jismoniy tarbiya – ya'ni jismoniy faollik tamoyiliga amal qilib yashash tufayli biz salomatlik hamda uzoq umr kechirish yo'liga tushib olamiz. Biz quvvatning katta qismini o'zimiz tanovul qiladigan oziq-ovqatdan olamiz, unda quyosh energiyasi zaxirasi mavjud. Shuning uchun salomatlikka daxldor ozuqa sog'likni mustahkamlashda eng muxim manba bo'lib xizmat qiladi. Diqqat qilishimiz zarur bo'lgan ikkinchi omil tanaga keng yoyilgan qon aylanish tizimi hisoblanadi. Qonning yaxshi aylanishini doimiy ravishdagi sog'lomlashtiruvchi jismoniy tarbiya – ya'ni jismoniy faollik ta'minlaydi.

Natijalar ushbu ishga sizning qanchalik xarakat sarflashingizga bog'liq bo'ladi.

Yurak xuruji birinchi darajali qotildir. Yurak qon-tomirlar tizimi kasalliklari AQShda xar yili bir millionga yaqin kishining yostig'ini quritadi. Shuningdek, ular salomatlikni barbod etuvchi asosiy omildir. Amerikada barcha yoshdagi 22 milliondan ortiq kishi yurak qon-tomir tizimi xastaliklaridan aziyat chekadi. Kimki bir marta yurak xurujini o'tkazgan bo'lsa, boshqasini kutib, doimiy vaximada yashaydi. Aytish mumkinki, ko'pgina amerikalik erkaklar (bugungi kunda 92 million kishi) agar ogoxlantiruvchi choralar tizimi asosida yashashni boshlamasa, yurak xastaliklari oqibatida dunyodan ko'z yumadilar.

Amerikadagi yurak kasalliklari uyushmasi taqdim etgan klinik tadqiqot natijalariga qaraganda, xar bir odam to'g'ri, ya'ni sog'lom ovqatlanish va jismoniy faollik tufayli sog'lom yurakka ega bo'lishi mumkin.

Sog'liq, bu — cizning boyligingiz. Salomatlik, ozodlik va tinchlik misoli uni saqlashga harakat qilingan ondan boshlab mavjud bo'ladi. Bularning bari esa butunlay sizga bog'liqdir. Siz yo sog'liq hamda hayotiy kuch-quvvatdan baxramand bo'lasiz, yoki xarob bo'lgan sog'liq bilan bir nav yashab o'taverasiz (bu holat hayot kechirish darajasi nihoyat yuqori mamlakatlar uchun xosdir). Rivojlangan mamlakatlarda asosiy qotillar yurak qon-tomirlari xastaliklari hisoblanadi. Hayot kechirish darajasining yuqoriligi xar doim ham sog'lom turmush tarzi bulavermaydi.

Biz, agar odamlar to'g'ri, ya'ni sog'lom ovqatlanib, doimo sog'lomlashtiruvchi jismoniy tarbiya mashqlari bilan shug'ullanib turishsa, yurak kasalliklari epidemiyasi aslo ruy bermaydi deb hisoblaymiz. Barcha kishilar shuni tushunishlari kerakki, barcha quvvat-kuch o'zlarining qo'lida bo'lib, xar qanday xastalikdan himoyalana oladilar.

Aksariyat odamlar jismoniy sog'lom bo'lish mislsiz kuch yog'ilishi hamda charchash his-

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

tuyg'usini xech qachon sezmaslikdan iborat ekanligini mutlaqo bilishmaydi. Ular eng buyuk boylik hisoblanmish salomatlikka ega bo'lish imkoniyatini qo'ldan boy beradilar.

Uzoq umr ko'rish, bu qon-tomirlarning elastik, o'tkazuvchan holatda saqlanishi demakdir: «Insonning qon-tomirlari qanchalik qarisa, u shunchalik mo'rtlashib boradi». Kanadalik tibbiyot muallimi va mashhur adib Uilyam Osler shunday degan edi: «Inson 28-29 yil xuddi 60 yoshdagi kishi arteriyasining o'zgarishi bilan, 40 yoshdagi kishi esa sakson yoshli kishining tomiridagi o'zgarishi bilan umr kechirishi mumkin».

Osler tomirlarga nisbatan «degeneratsiya» so'zini qo'llagan edi («degeneratsiya» zot, naslning buzilishi, aynish). Tug'ilganimizda, biz top-toza arteriyalardan iborat yurakka ega bo'lamiz-u, hayotdagi noxushliklar uning aynib, buzilishiga olib keladi. Agar xar bir kishi o'z yuragini avaylab g'amxo'rlik qilsa, xayoti bardavom, sog'lom va baxtli kechadi. Siz sog'lomsiz, demak, baxtlisiz, buni yodda tuting!

Xulosa. Shunday qilib, o'z salomatligi uchun mas'ul bo'lgan xar bir kishi quyidagi oddiy, shu bilan birga, hech qanday boylik bilan tenglashtirib bo'lmaydigan har bir odamga mustahkam sog'lik, uzoq umr, kelajak avlod zurriyodini sog'lomlashtirishni ta'minlaydigan quyidagi qoida va talablarni bajarishi lozim:

1. Xar bir insonning birinchi navbatda yoshlarning ma'naviy olami, madaniyati yuksak bo'lishi zarur. Chunki "Sog'lom turmush tarzi" qoida va talablariga amal qilish uchun, odam yuksak ongli, qatiyatli, irodali bo'lishi shart. Bu sifatlar boshida esa ma'naviyat va madaniyat turadi;
2. Kun tartibiga amal qilish;
3. Ertalabki badantarbiyani, xususan yengil yugirish mashqlarini xech bo'lmasa 7-10 daqiqa, imkoniyat bo'lsa kamida 30 daqiqa davomida bajarish;
4. Shaxsiy gigiena qoidalariga amal qilish: ertalab, badantarbiyadan keyin, yuvinish, kechki uyqudan oldin va ertalab nonushtadan so'ng tishlarni misvoq bilan tozalash, haftada bir marta hamomga tushish, kun davomida pul va transport vositalarini ushlagandan keyin, ovqatlanish oldidan qo'lni sovunlab yuvish;
5. Ratsional sog'lom ovqatlanish. Kunlik ovqat tarkibida, ayniqsa yoshlar uchun oqsilga boy mahsulotlarni (go'sht, baliq, tuxum, qatiq, pishloq kabilar) yetarli miqdorda bo'lishi, shuningdek tabiiy mahsulotlarni tanovul qilish;
6. Harakatlanish faolligiga amal qilish. Jismoniy tarbiya va sport bilan shug'ullanish;
7. Sog'liq uchun zararli odatlarga barham berish: chekish, spirtli ichimliklar, giyohvandlik kabilardan voz kechish;
8. Sog'lom oila qurish va zamon talabi asosida oilani rejalashtirishga e'tibor berish;
9. Fe'l-atvorda mavjud bo'lgan nuqsonlarni bartaraf etish: emotsional holatini jilovlay olish ya'ni arzimagan sabablar bilan kayfiyatning buzilishi va atrofdagilar kayfiyatini buzishdan saqlanish.

Foydalanilgan adabiyotlar

1. Болтабоев С. А. Спорт тиббиёти, даволаш жисмоний маданияти ва жисмоний тарбия гинетикаси //Укув кулланма. – 2015. – Т. 185.
2. Boltobaev S. A., Kostikova O. V. Age features of physical development parameters and component composition of the body of young urban athletes //World Bulletin of Public Health. – 2022. – Т. 17. – С. 80-86.

3. Boltobaev S. A. et al. Influence of stress and anxiety on highly qualified athletes //International journal of health sciences. – 2022. – Т. 6. – №. S3. – С. 1394-1410.
4. Болтобаев С. А. и др. ВЛИЯНИЕ ПЕРЕЖИВАНИЙ, ТРЕВОГИ И СТРЕССА НА СОРЕВНОВАТЕЛЬНУЮ УСПЕШНОСТЬ У СПОРТСМЕНОВ И ИХ ПРЕОДОЛЕНИЕ //Наука и мир. – 2020. – Т. 2. – №. 1. – С. 24-27.
5. Болтобаев С. А. и др. ДВИЖЕНИЯ В БЕГЕ НА ДЛИННЫЕ ДИСТАНЦИИ И В МАРАФОНЕ КАК ПРЕОДОЛЕНИЕ ТРАВМ БЕГУНОВ //Наука и мир. – 2019. – Т. 1. – №. 12. – С. 37-39.
6. Болтабоев С. А., Азизов С. В., Бутаев З. А. Роль физической упражнений в формировании здорового образа жизни молодого поколения //Теоретические и прикладные проблемы современной науки и образования. – 2016. – С. 28-31.
7. Дамулин И.В., Парфенов В.А., Скоромец А.А., Яхно Н.Н. Нарушение кровообращения в головном и спинном мозге. //В кн.: «Болезни нервной системы. Руководство для врачей». Под ред. Н.Н.Яхно, И.В.Дамулина. –М.: изд-во «Медицина». – 2001. –Т.1. –С.239–302.
8. Дамулин И.В. Болезнь Альцгеймера и сосудистая деменция. //Под ред. Н.Н.Яхно. –М. –2002. –С.85.
9. Мерта Дж. Справочник врача общей практики/ Пер.с англ.- М.: Практика, 1998.
10. Место биомаркеров – цитокинов в диагностике и прогнозировании течения ишемической болезни сердца. Аляви А.Л., Абдуллаев А.Х., Туляганова Д.К. и др. Методическое пособие. Ташкент. 2013 г. 21 с.
11. Мохорт Т.В. Дислипидемия и сахарный диабет: новые данные Медицинские новости. – 2012. – №9. – С. 49-55.
12. Окорочков А.Н. Лечение болезней внутренних органов // Руководство. -Т.3., кн.1. Лечение болезней сердца и сосудов. - М.: Мед. Литература, 2000. - С.53-271.
13. Покровский А.В., Абрамова Н.Н., Анбатьелло С.Г. Клиническая ангиология. Руководство для врачей. //Под ред. А.В.Покровского. –Москва. –2004. –Т.1. –808С.
14. Превентивная кардиология: Руководство/А.В.Виноградов, А.Н.Климов и др.; Под ред. Г.И.Косицкого. -2-е изд., перераб. и доп. –М.: Медицина, 1987. -512 с.
15. Розыходжаева Г.А. К вопросу физической реабилитации больных ИБС пожилого и старческого возраста. // Бюллетень ассоциации врачей Узбекистана. Т., 2004., №2., стр. 45-48.
16. Розыходжаева Г.А., Аляви А.Л. Оптимизация диагностических подходов к оценке функционального состояния сердечно-сосудистой системы больных ИБС в пожилом и старческом возрасте. -Тошкент, «Янги аср авлоди», 2008, -199 с.
17. Фалтер П.Ф. Сердечно-сосудистые заболевания. Руководство для врачей/Под ред. Е.И.Чазова. - М.: Медицина, 2000.- 416 с.
18. Akkerman H.P. Surgery pathology. – New-York – London – Tokyo, 1995.
19. Burkit H., Lowe J. Basic Histopatology. – New-York – Madrid – Tokyo, 1996.
20. Sabatine M.S., Giugliano R.P., Keech A. et al. Rationale and design of the Further cardiovascular Outcomes Research with PCSK9 Inhibition in subjects with Elevated Risk trial. Am Heart J 2016; 173:94–101.

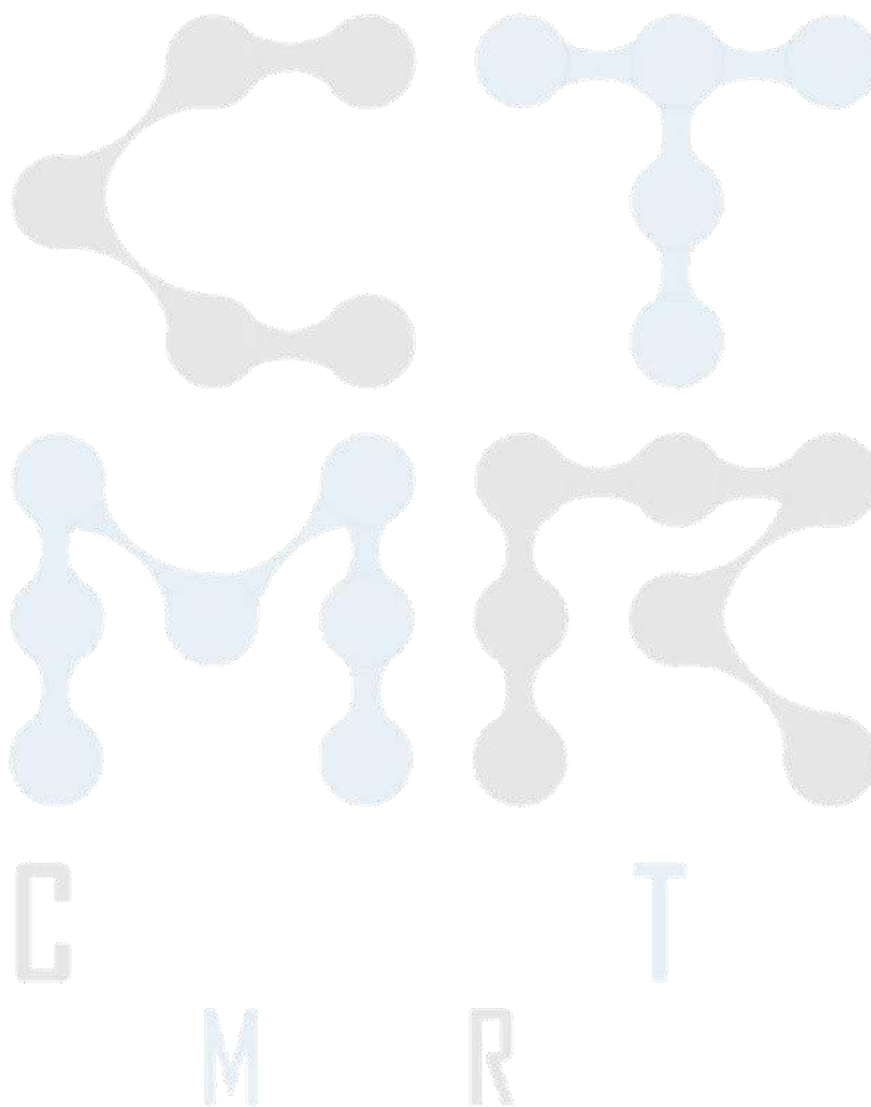
THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

21. Khatib R., Mckee M., Shannon H., et al. Availability and affordability of cardiovascular disease medicines and their effect on use in high-income, middle-income, and low-income countries: an analysis of the PURE study data. *Lancet* (London, England) 2016;387(10013):61–69.

22. Panta R., Dahal K., Kunwar S. Efficacy and safety of mipomersen in treatment of dyslipidemia: a meta-analysis of randomized controlled trials. *J Clin Lipidol* 2015;9(2):217–225.

23. Chapman J., Stock J.K., Ginsberg H.N. et al. PCSK9 inhibitors and cardiovascular disease: heralding a new therapeutic era. *Curr Opin Lipidol* 2015; 26:511–520.



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Annotation: this article covers the life and scientific work of the great scientist and statesman, a bright representative of the Timurid dynasty, the great thinker Mirzo Ulugbek, whose name is inscribed in gilded letters on the pages of World Science. His outstanding contribution to the development of astronomy, mathematics, geometry, geography and a number of other sciences, the accuracy of the calculations he carried out in the Middle Ages, has still left the people of modern science lol.

Keywords: Temurians, scientific heritage, astronomy, mathematics, historian, geographer, Observatory, madrasa, Movaraunnahr.

The 14th – 15th century thinker who entered World Science with the definition of the second renaissance of the East-he, among the allomas, was the Timurid ruler Mirzo Ulugbek. The focus on science, art in Amir Temur can also be seen in his children and grandchildren. At the beginning of the 15th century, the Movaraunnahr throne in Samarkand was ruled by The King and scholar Mirzo Ulugbek (1409-1449). During this period, Samarkand became a major political, Scientific, Cultural Center. As a scholar, educator, ulughbek paid great attention to science and tried to concentrate major scientists in Samarkand. He built many madrasas in Samarkand, Bukhara, Gijduvan. Mirzo Ulugbek also became a patron of Science in conjunction with state affairs¹.

The scientific heritage of the great thinker and the study of state activities are of great interest. Many scientific works and studies in this regard have been carried out by scientists from different countries. The tradition of studying the scientific and historical heritage of Mirzo Ulugbek has a centuries-old history. Issues related to his life and work are reflected in the research carried out by representatives of the schools of Oriental Studies and history of Western Europe, Russia and Uzbekistan².

The first - born son of Shahruh Mirza, the fourth son of the Timurid ruler Muhammad Taragai sahibqiran Amir Temur, was born on 22 March 1394 (19th Sunday of the month before jumodul, 796 ah) in Sultonion, Iraqi Ajam. He is named Muhammad Taragai. The name was the name of Temür's late father and had not yet been given to any of the Temüri Princes. But since he is called "Ulugbek" by his grandfather with special affection, his main name remains

¹ Mirkhanova, M. A. The great scientist and statesman Mirzo Ulugbek / // Young Scientist — 2016. No. 8 (112). p. 821.

² <https://www.google.uz>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Ulugbek². Ulughbek Mirzo was raised at the court of his grandfather Amir Temur from an early age, and was influenced by the olimu fuzalos who gathered at the court and became interested in science. Ulugbek has always been near his grandfather, including when walking and receiving ambassadors. Ulugbek, like other princes, had the best teachers.

At the top of the Temüri dynasty of 1405 sits the son of Temür - Shahruh, who was elected at the residence of Herot. The administration of Movaraunnahr is handed over to Ulugbek, the eldest son of Shohruh, grandson of Amir Temur. 1409 year Ulughbek is proclaimed governor of Samarkand. Mirzo Ulugbek ascended the throne of Movarounnahr at a very young age, that is, at the age of 15, and ruled the state for 40 years. Mirzo Ulugbek was at the same time a just king, and reason-a scientist who had no equal in thought and a great personality who embodied many spiritual qualities. Mirzo Ulugbek is not very fond of military campaigns, his military campaigns were organized only to eliminate the impending danger. He was obsessed with science, occupied with urban and Rural Improvement. Mirzoulugbek establishes madrasas in Bukhara in 1417, Samarkand in 1420, and Gijduvan in 1432-1433. Ulughbek built two madrasas in Samarkand: one as part of the Registan ensemble and the other as part of the Ghor Amir ensemble. Ulughbek himself delivered weekly lectures at each of these madrasas, among other scholars.

The observatory built by Mirzo Ulugbek in Samarkand in the 15th century had a large globe. It showed climatic boundaries, and you could also see mountains, deserts, seas and rivers in it. Therefore, the second Globe in the world was created by Samarkand astronomers. According to historical sources, Ulughbek built a sundial in Samarkand with a height of 50 meters. These rare watches are also not preserved. In addition to improving the quality of education, he began to build his Samarkand Observatory. In the implementation of this huge project, he was helped in scientific activities by the colleagues of Mirzo Ulugbek. These are Rumi, Jamshid Al-Koshiy and Ali birders can be said in Kazizo. Ali Qushchi, like Ulughbek's son, was his closest disciple. They were always with Mirzo Ulugbek³.

If the above-mentioned scientists, led by Mirzo Ulugbek, conducted theoretical studies on astronomy in madrasa, in practice these studies were examined at the Observatory. The result of this and other studies is, of course, his famous main work "Zij-I jadidi Guragani", that is, the catalog of astronomical tables of Ulugbek, which glorified the Samarkand Academy all over the world. The fact is that when Mirzo Ulugbek studied the astronomical tables of his predecessors, noticing that not all calculations were correct, he decided to recalculate the coordinates and make new more accurate tables⁴.

³ <https://upl.uz>.

⁴ Mirza Ulugbek at the observatory and museum. <https://samarkand.uz>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

The work "Ziji Koragani" is the most famous work of Ulugbek's pen. It identifies the position and holotype of 1,018 sobita (non-excited) stars. The coordinates of 683 georgafic points located throughout the middle and Middle Eastern countries of Central Asia with respect to the latitude of Samarkand are defined. A number of rare works on mathematics and astronomy, created on the basis of the results of the research of the Ulugbek Observatory, are still gaining the attention of scientists today.

In 1941, he wrote a brochure about the Ulugbek Observatory. E. Masson wrote, " the Observatory, in which the best artistic and architectural forces were involved in the creation of the capital, was undoubtedly distinguished from other large public buildings of the time not only by its unusual forms, but also by a slightly different ratio of color combinations in the exterior decoration. At the same time, in connection with the observations of astronomers covered with a mysterious fog, it was impossible to evoke the involuntary respect of contemporaries, which was reflected in the noble or high-rise building "imati olia". His scientific work was evaluated in this way, which glorified him and Samarkand all over the world. By nature, he was a peaceful man, a patriot, a man with a high love for Science, for building. After the death of his father Shohruh, 1447 would be the head of the Timurid dynasty.

In addition to the secular sciences, history, literature and art, especially fine arts, flourished in Muvarounnahr during the time of Mirzo Ulugbek. Ulugbek's younger brother Boysunqur is also known to have engaged in mutual correspondence on topics of scientific literature. While ulughbek wanted to prove in poetry that the great Nizami Ganjavi style and School of the Azerbaijani poet was superior, Mirzo Boysunqur argued as a true product of the creativity of the great poet and thinker Amir Khusrav Dehlavi. Ulugbek knew Arabic and Persian perfectly, in addition to his native language (the chigatoy-Turkic language of that time). In his famous work "Historia Rashidi", Muhammad Haydar writes that Mirzo Ulughbek was "a historiographical sage and had also written down the history of the "four ulus"". The work was Ulugbek's "Historia arba' ulus", which reflected the political life of the countries once occupied by Genghis Khan in the 13th century – the first half of the 14th century⁵.

Mirzo Ulugbek made many scientific observations at the observatory he founded. These observations resulted in the completion of "Ziji jadidius Koragonius" in 1437. Composed in four movements, Part 2 of the work consists of 22 chapters and presents a stationary state of 1,018 stars. This work is a large scientific resource that contains very valuable information about astronomy. This work has been widely used in the science of astronomy for many centuries.

⁵ Mirzo Ulugbek hakida – buyuk alimning biography. <https://sputniknews-uz.com>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Let us briefly dwell on his copies. There are currently four abridged copies of which two are in England, one copy is in the library of the city of Bankupur, India, and a fourth copy is in the United States at Harbard University.

Mirzo Ulugbek's great discoveries in science were appreciated by many scientists, historians and expressed their warm opinion.

According to the description of the Great Alisher Navoi, Ulughbek was also an excellent poet. And the book "Tuxfatu surur" is a sign that he is a great music connoisseur. In "Muhit attafviq", Ulughbek's Bilujiy "is shown to have composed large pieces of music such as" Shadiyya "(which has come down to us)," morals", "Tabrizi", "Usuli ravon", "Usuli bahriy". According to "Muhit ut-tavorix", Ulugbek Mirzo Zari was also a musicologist in shinawan. He created musical works such as bulujiy, shoddy, moral, ulusiy and usuli Ravan, performed in large and small naqoras. Muhammad Haydar Mirzo, author of "Historia Rashidi", also describes Ulugbek Mirzo as a mature scholar, saying that "Mirzo Ulugbek was a historiographical sage and had written down the history of "Historia arba' ulus" (the four ulus)". This was also reported by historian Fiosiddin Khondamir (1475-1534).

Another great Uzbek scientist, Qori Niyazi, wrote: "the appearance of any historical person on the world arena, without any coincidence, but his creation is born on the basis of a certain heritage and a certain ground. Therefore, the floor of Ulughbek's work is not accidental". Indeed, Mirzo Ulugbek had no equal in scholarship and phosilm⁶.

In conclusion, the academy created by Mirzo Ulugbek is considered proud of its scientific activities and for today in return for the work of a number of scientists who have worked in it. A number of works created at that time are vivid evidence of our opinion that even from the point of view of today it does not lose its relevance. Therefore, great people who lived in the historical turning point are always proud of what they have done. Mirzo Ulugbek can rightfully be called the leader of the science of stars. And his outstanding contribution to the science of his time as both a ruler and a scientist lives for life in the memory of generations, and they still refer to Ulugbek's rich scientific heritage many times in their scientific work.

⁶ Come on! <https://uza.uz/uz/posts/daho-tugilgan-kun>.

List of bibliography

1. Mirkhanova, M. A. The great scientist and statesman Mirzo Ulugbek / // Young Scientist — 2016. No. 8 (112). p. 821.
2. <https://www.google.uz>
3. <https://upl.uz> .
4. Mirza Ulugbek at the observatory and museum. <https://samarkand.uz>
5. Mirzo Ulugbek hakida – buyuk alimning biography. <https://sputniknews-uz.com>
6. Come on! <https://uza.uz/uz/posts/daho-tugilgan-kun>.

Stylistic Features of Poems Reflecting the Image of a Woman by Halima Khudoyberdiyeva

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Abstract: This article analyzes the stylistic features of the female image in the work of the poetess and her place in society, social role, inner world, feelings, and dreams. The poetess describes the woman through metaphors, symbolic images and realism, clearly and inspiringly reflects her love, sorrow and changes. Khudoyberdiyeva sheds light on a woman's spiritual quest, family relationships, and place in society, as well as her social struggles and dreams.

Key words: woman, stylistics, social attitude, image, poem, context, symbolic image

Halima Khudoyberdiyeva is a writer who occupies an important place in Uzbek literature, with her own refined and spiritual artistic world. Her work, while glorifying the inner world of a woman, her spiritual states, her natural and social role, is aimed at bringing out national and universal values. Similarly, in Halima Khudoyberdiyeva's poems, the image of a woman has become a special symbol.

The image of a woman occupies a central place in Halima Khudoyberdiyeva's poems and in her general work. She vividly describes various situations in a woman's life, her inner sorrows, feelings and her social role. Khudoyberdiyeva not only shows a woman in such a historical and social context, but also creatively illuminates her inner world, love and at the same time acute sorrows.

The image of a woman in poems, her passion for children, her attitude to family, her attitude to society and man, as well as the spiritual stability and patience of a woman, occupy a special place in many of her poems. Through the image of a woman, Khudoyberdiyeva tries to show the expected and or hindered relationships, problems related to close literature and society.

The inner world of a woman plays an important role in H. Khudoyberdiyeva's poems. Her poems present a woman's feelings, changes and problems in life. Her ability to clearly and inspiringly describe a person, a woman and her dreams helps to fully illuminate the qualities of a woman's image.

At the same time, Halima Khudoyberdiyeva also shows the natural states of a woman, her miraculous and noble sides in their place. The level and place of a woman are determined through spiritual changes, independence, national values and family relationships. Khudoyberdiyeva presents a woman not only as a person who exists to play the role of a woman, but also as a person with a social, spiritual and inspiring heart.

The theme of a woman's social role and her place in life is also important in Halima Khudoyberdiyeva's work. In her poems, the ability of a woman to raise her family, provide her children with adequate education, make big decisions in her life, and create innovations for herself in society is repeatedly highlighted. This, of course, is associated with the social restrictions and syndicates imposed on her, and the ability of a woman to work according to her own desires.

The poems promote the sacred purpose of a woman and her struggle to demand her rights. In addition to decisions that are never prevented from moving forward, the image of a woman also tries to come up with new definitions.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

At the same time, let us dwell on the stylistic features of Halima Khudoyberdiyeva's poems, which reflect the image of a woman.

In Halima Khudoyberdiyeva's poems, the interpretations of the image of a woman have not only aesthetic, but also spiritual and philosophical content, and their "stylistic features" also reveal a full-fledged portrait of this person.

Let's say, revealing the world of a woman through metaphors and images:

In the poet's poems, the image of a woman is often reflected in deep, formed and at the same time changing states through "metaphors" and "symbolic images". In her poems, a woman is expressed through symbols such as a vision, light, stranger, moon, shadow. These symbols symbolize the true nature of a woman, her inner suffering, needs and life.

For example, using specific metaphors, the poetess explains in a unique way the difficulties in a woman's life and her attitude towards her in such situations:

"I spin, although it is light,
My light, its peak is a cloud..."

Here, the inner suffering or emotion of a woman, the expression of her condition through deep metaphors should be visible. Also, the negative and positive aspects of the social environment are expressed in parallel through the image of a woman.

Revealing the world of a woman through naturalness and realism:

The image of a woman depicted with "realism" in the poems of Halima Khudoyberdiyeva is aimed at showing the daily life, life and mental states of a woman, as well as her active social role. In the poems, a woman's family relationships, needs, and feelings are shown in real and complete situations of every day of life. This naturalness connects the image of a woman with the real world and shows her naturalness at the level of real life, her attitude to life in a personal and social context.

For example:

"Great work, this is the definition at hand,
Life is hard though..."

This writing deeply interprets real life events by describing a woman's social activities and family processes. The poem shows a woman's internal decisions, relationships to living conditions and life values.

Illumination of tone and emotions

The formation of "tone" and "emotion" in the poet's poems is closely related to the internal and external details of the woman's image. The poems express a woman's inner sadness, love, old age and youth in a clear and simple language. Halima Khudoyberdiyeva tried to creatively illuminate a woman's inner feelings, heartfelt words and personal circumstances through hostility or loyalty through new phrases and images.

"The path of love for you,
In every point of the heart..."

Here, a woman's unique inner world and love for a specific person are expressed through love and Islam. The woman's feelings and specific situation are defined in the poem through a special rhythm and syntax.

Reflection of the image of a woman through repetition and affects

In Halima Khudoyberdiyeva's poems, especially in poems that reflect the image of a woman, "repetition" and "affective" or expressive states are implemented in a unique and important way.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Through this, she reflects the mental states of a woman, her changes, her struggle with grief and love through her own limitations and aspirations.

"We turn, we turn,
Words sound in all directions..."

In this verse, through repetition, the woman's thoughts about her personality and renewal, traces of the changes that have occurred with the passage of time, are expressed.

Formation of questions and problems

Through the image of a woman in her poems, Khudoiberdiyeva tried to raise "questions" and "problems", and the social and spiritual interpretations that are put to her. The place of a woman in society, her life goals, are clarified, especially through changes and transitions.

"Why did I love you,
And you don't know me at all?"

This question illuminates the spiritual changes of a woman and her internal conflict in love, grief and tears.

Conclusion

The stylistic features of Halima Khudoiberdiyeva's poems, which reflect the image of a woman, include a number of writing techniques and methods, such as the use of metaphors, affective expressions, realism, naturalness and symbolism. Khudoiberdiyeva examines the themes of the spiritual and social world of a woman, her spiritual stability, love and grief, stability and change through the image of a woman. Her poems are designed to act out clear and illuminated themes and ideas by realistically and metaphorically depicting the inner world of a woman and her role in society.

References:

1. Xudoyberdiyeva H. (1994). O'zbek adabiyotida ayol obrazi. Toshkent: O'zbekiston Respublikasi Matbuot va axborot agentligi.
2. Gulyamova, M. (2012). Halima Xudoyberdiyeva ijodi va ayol obrazi. Toshkent: Sharq.
3. Halima Xudoyberdiyeva ijodining umumiy tavsifi va ayol obrazining adabiyotdagi o'rni haqida tahliliy maqola.
4. Abdullayeva, S. (2008). O'zbek adabiyotida simvolizm va uning ijodi. Toshkent: Fan.
5. Simvolizmning adabiyotdagi o'rni va Halima Xudoyberdievaning ushbu yo'nalishdagi asarlari tahlil qilinadi. Ayniqsa, ayol obrazining ramziy tasvirlari.
6. Mirzoxo'jayeva, L. (2015). Halima Xudoyberdiyeva she'rlarida ayol obrazi: tarzi va mazmuni. Toshkent: Uzbekiston milliy ensiklopediyaasi.
7. Halima Xudoyberdievaning she'rlari tahlil qilinadi, unda ayol obrazining psixologik va ruhiy holatlari haqida so'z boradi.
8. Nosirova, T. (2010). Turk adabiyoti va ayol obrazi. Samarqand: SamDU.
9. O'zbek adabiyotida va turk adabiyotida ayol obrazining o'rni va uning tahlili. Azamov, A. (2017). O'zbek adabiyotida ayolning psixologik portreti. Toshkent: Yangi Nashr.
10. Toshmatova, R (2000). She'riyatda simvolizm: o'zbek va jahondagi ta'sirlar. Toshkent: O'zbekiston matbuoti.
11. She'riyatdagi simvolizm va uning o'zbek adabiyotidagi ifodalari, ayniqsa ayol obrazini simvolik tarzda tasvirlashga oid tahliliy ish. Xudoyberdiyeva. H. (1986). She'rlar. Toshkent: Fan.

**Methods, techniques of hand placement on violins,
basic change of position and pure intonation**

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Abstract

The article forms a position implies the position of the left hand and fingers in one or another part of the fingerboard within one position, the most different positions of the hand and fingers are possible. On the other hand, the same position of the hand and fingers in the same part of the fingerboard can be considered in different positions. The relativity of the concept of position becomes even more obvious when considering numerous examples from violin literature, which use narrowed and expanded finger positions (fifth coverage of the position, decimals, double octaves, etc.).

Keywords: methods / techniques / hand position / double octaves / intonation / violin / change of position / hand position / teacher / pedagogical technology.

Методы, приёмы постановки рук на скрипки,

основные смена позиции и чистое интонирования

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Аннотация в статье формируется позиция подразумевается положение левой руки и пальцев в той или иной части грифа в пределах одной позиции возможны самые различные положения руки и пальцев. С другой стороны, одно и то же положение руки и пальцев в одной и той же части грифа может рассматриваться в разных позициях. Относительность понятия позиции становится еще более очевидной при рассмотрении многочисленных примеров из скрипичной литературы, в которых используются суженные и расширенные расположения пальцев (квинтовый хват позиции, децимы, двойные октавы и др.).

Ключевые слова: методы/ приёмы/ позиция рук/ двойные октавы/ интонирования/ скрипка/ смена позиции/ положения руки/ педагог/ педагогическая технология.

Since time immemorial, music has occupied an important place in human culture. It formed personal qualities in a person, helped him to understand his attitude to the world around him, and also contributed to the reflection of his spiritual world. And this is no accident, because music has the ability to reflect subtle shades of human experiences, can emotionally affect people, influence the development of thinking, consciousness, musicality. In order for a person to be more receptive to beauty, art, feelings and experiences, it is necessary to form this perception from an early age. Singing plays an important role in the development of a child, in the formation of both his musical and personal qualities. It is in singing that a child can show his attitude to music and to what he sings about. But a child is not always able to express all his feelings with the help of his voice. Sometimes something prevents him from revealing his experiences to the fullest. And one of the obstacles to achieving this goal is incorrect vocal performance. A child needs to correctly convey the melody with the help of his

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

voice, it is necessary to know how to do this. Not all children can sing cleanly. The most common problem among children is impure intonation, that is, when a child plays the violin as if he is singing notes inside himself, incorrect thinking is formed inside the child and he does not hit the notes. Incorrect internal singing of notes appears in the head because he himself thinks about it incorrectly. Vocal performance prevents the child from expressing all his feelings and experiences with the help of the voice of the violin. In recent years, the problem of impure intonation in children has been growing. A rare child, learning music, is able to hit the notes right away. Based on this, we can say with confidence that impure intonation is the main problem of beginning musicians. Any music teacher or violin teacher on his professional path encounters difficulties working with children who intonate incorrectly.

The problem of conscious intonation in the violin class in institutions of additional education for children. The main aspects that affect the intonation of the violin were considered: the design of the instrument, musical ear and performance technique. The specifics of the formation of intonation are considered using the example of working on scales. The object of the study of this article is the artistic and pedagogical process in the violin class, the subject of the study is the formation of intonation skills of student violinists. The objectives of the study were to determine the structure and content of intonation skills, establish pedagogical conditions and the specifics of the formation of intonation skills of students in the violin class. The purpose of the study was the theoretical and methodological substantiation of the formation of intonation skills. The greatest music master of the 19th century, Adolphe Sax, sought to eliminate intonation discrepancies between wooden and brass instruments of the brass band, as a result of which a unique musical instrument was born - the violin. Each musical instrument, regardless of the price and country of manufacture, will have its own shortcomings, which will cause deviations in sound. Therefore, knowledge of discordant sounds and the ability to smooth out intonation irregularities of the instrument's scale before and during playing are especially valuable for a performer. In a word, this can be called the skill of intonation, the development of which should be given sufficient attention, the same as work on staging, breathing, sound and technique. This skill will help a future soloist or orchestra (ensemble) artist to comfortably carry out their professional activities and be in demand on the labor market.

Intonation (from the Latin "intono" - "I pronounce loudly") is the embodiment of an artistic image in musical sounds. To intonate (to pronounce, to perform) is one of the forms of human thinking, which shows what is happening in reality. The intonation of violin performers depends on: the design features of the instrument, musical ear and performing technique. 1. Design features of the instrument. Each violin already has its own precise tuning of notes. Each factory that produces a musical instrument has its own feature, for example, different additional fingering, which helps to eliminate inaccuracies in the intonation of this instrument. Different options for mouthpieces and reeds also affect the precise intonation of the instrument. An important step before practicing on the instrument is the ability to tune it. To do this, you need to check that the metal has warmed up to room temperature. Next, you need to turn on such a device so that the sound is in the center and in the green field, by adjusting the fingers. Pressing with oscillation increases intonation, as does an instrument that has heated up during practice. A very important fact to note is that there is a single tendency, due to which certain notes sound too high or too low. The sounds of B flat and B of the small octave, C, C sharp of the second octave sound below the general tuning, and the note D of the second octave sounds above. Every good musician who wants to play in tune should know the features of his instrument and help himself to align the scale with the help of the embouchure muscles and additional fingering. Also, using a tuner and checking

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

certain sounds for an instrument with a fixed tuning (piano, button accordion, accordion) will help in solving this issue.

2. Musical ear. Musical ear includes the ability of a person to perceive a wide variety of sound properties: pitch, volume, color, etc. The determining factor in the purity of intonation is pitch hearing. Most musicians have relative pitch. Absolute pitch is much less common. Relative pitch allows one to determine the pitch of a sound by comparing it with a sound whose pitch is known, as well as to recognize and reproduce intervals. Absolute pitch allows one to determine the pitch of individual sounds without comparing them with other sounds. Of decisive importance in intonation is relative pitch, the basis of which is the modal sense and interval pitch. Modal sense is the performer's ability to determine the modal function of a particular sound. Interval pitch is the ability to sense and reproduce pitch relationships between two sounds taken simultaneously or sequentially. Interval pitch, which develops on the basis of modal sense, in turn contributes to the development of the latter. When performing melodies that do not go beyond the limits of the modes familiar to him, the musician relies mainly on his modal sense. The importance of interval pitch increases sharply when he is faced with the need to master new modes, chromaticisms, and various modulations. Hearing carries out its intonation functions in two main directions: precise representations of the pitch of sound and control of the extracted sound. It is difficult to overestimate the importance of intonation prehearing. Clear auditory representations largely determine the correct work of the muscles of the performing apparatus, on which, ultimately, the purity of intonation depends. When the sound is already produced, its intonation is controlled by hearing. Thanks to this control, if necessary, the central nervous system sends a signal to the corresponding muscles of the sound apparatus, prescribing to make certain adjustments to their work - inaccurate intonation is corrected. Human hearing is capable of developing. Special exercises for the development of hearing, as well as concentrated practice on the instrument, can bring it to a high degree of perfection. This is exactly the kind of hearing that a violinist needs. Hearing is developed in solfeggio lessons, in the class of ensemble and orchestra. In order to develop melodic and intervallic hearing, to determine the mode in music well - it is necessary to practice solfeggio and write monophonic dictations. Harmonic hearing is developed through polyphonic dictations and exercises where it is necessary to determine the chord or harmonic sequence. The development of inner hearing is impossible without the selection of a melodic pattern, improvisation, transposition of a melody into other keys.

3. Performance technique and purity of intonation. The basis of pure intonation on the violin is the correct work of the performing apparatus, that is, the fingers. All its elements must be correctly placed and developed. In addition, between them and the entire acoustic system of the instrument, that finest coordination must be established, without which pure intonation is impossible. The terms "hand positioning", "finger positioning", "resonator positioning" contain the idea of a certain stativity, which does not correspond to the essence of the work of the performing apparatus, that is, the fingers, because it must be not only strong and hardy, but also mobile and flexible. Exceptional muscle work is necessary for the correct extraction of sounds of different pitches. In essence, each step of the scale requires its own "micro-positioning", an unmistakably felt position of the fingers, resonators. Extraction of sounds of the upper register is especially difficult in this sense. It is often necessary to observe the following picture: the student forms the fingers of the hands absolutely correctly when extracting sounds of the lower and middle registers, the sound quality is quite satisfactory, but as soon as he reaches the upper register, the sound quality deteriorates sharply. To place the fingers of the hands means not only to give them the correct external form, but also to teach

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

the young musician to accurately control the tension and interaction of the muscles of the fingers of the hands - the apparatus in strict accordance with the changing pitch of the extracted sounds. A correct understanding of the tessitura technique helps to solve this problem. When the tessitura increases, the performing apparatus must make the following rearrangements:

1. Increase the density of the finger support. Increasing the density of the finger support increases the sound position, which allows you to relieve the fingers somewhat. Thanks to this, it is possible to produce high sounds without overstraining the fingers and clamping the strings.

2. Increase the internal tension. The internal tension is most easily detected in the apparatus of violin performers. The sound exciter here is the central parts of the fingers. In order to excite the sound, they must be in an elastic state. A relaxed state of the fingers creates the prerequisites for extracting low sounds. Their more elastic state makes it easier to extract high sounds. Similarly, a weakly stretched string produces a lower sound, while in a taut state it sounds higher. The sound exciter on the violin is the complex formed by the fingers, grasping the string and controlling it. By changing the degree of internal tension of the finger muscles, as well as opening and closing the hands of the fingers, the musician can influence the frequency of the sound, therefore, influence the frequency of intonation. A well-placed and strong finger apparatus will allow the violinist, by creating the necessary elasticity in the fingers, to extract sounds in the upper register with a relatively small impact on the string itself. If the fingers are poorly placed, if they are underdeveloped or tired, high sounds will have to be extracted by excessively activating the hands, leading to a clamp, the string. In this case, the sound of the upper register becomes narrow, high-pitched, clamped and dull, the sound breaks, and the finger muscles get tired.

Methodology for working on intonation. Intonation work will be successful only if the teacher is able to convey to the consciousness of his students the full significance and complexity of the problem facing them. After all, performing skills directly depend on intonation. Intonation work should be subordinated to a strict regime and conducted according to a clear plan, and not from time to time. Auditory control over intonation should not stop for a minute. It is absolutely unacceptable to play an instrument with a "loose" or, even worse, "switched off" ear.

A great expert on musical ear S. Maykapar: "It is necessary to take into account the basic requirement of the ear: to give an artistic sound for the starting point, that is, a definitely and beautifully nuanced one. This is necessary so that the ear receives a clear impression, is not irritated, and so that this impression is as deep as possible and remains in the memory for a long time, until we find the correct intonation of the sound. Otherwise, it is difficult for the ear to find a pure, precise interval from a sound that is poor in color. If the original sound is poor in its initial qualities, colorless or ugly in color, then, even with the accuracy of its pitch, finding another sound from it that is precise in pitch will be difficult for the ear." It is advisable to work on intonation on relatively complete musical constructions. The accuracy of intonation of a particular sound or interval should not be sought in isolation from other sounds and intervals of the performed structure, but always in connection with them, in the general intonation context. Only then will the performer be able, relying on the modal-meaningful interrelation of the sounds of the melodic structure, to achieve intonation accuracy, expressiveness and harmony as a whole. In particularly difficult cases, interval control should be called for help. In this case, it is necessary to pay attention not only to adjacent sounds, but also to the intervals between non-adjacent sounds, especially if these intervals form octaves, fifths, fourths, minor seconds,

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

which constitute the intonation basis of the performance. Work on conscious intonation is mandatory for every musician, and it should be started from the first stages of training. It is necessary to observe the accuracy of intonation, be attentive to each false sound, work with the tuner, tuning each sound, this is the only way to develop the musician's ability to correct intonation inaccuracies. It is also important that the student can listen to the music being performed (himself and the musical accompaniment), and find support for precise intonation in the sounding harmony. Some teachers, fighting for the purity of the student's intonation, follow the line of excessive care. Continuous instructions gradually dull the performer's own attention. Entirely relying on the teacher's hearing, he begins to treat his own intonation passively. Thus, it is necessary to ensure that the young musician learns to independently control and change the sound, that is, to work on conscious intonation. The extensive performing and pedagogical practice of violinists clearly demonstrates to us that the performance of long sounds, scales, exercises and etudes directly affects the development of pure intonation.

Использованные литературы:

1. КБ Холиков. Проблематика музыкальной эстетики как фактическая сторона повествования. Science and Education 3 (5), 1556-1561
2. КБ Холиков. Тяготение основа-основ в музыкальной композиции. Scientific progress 2 (4), 459-464
3. КБ Холиков. Вокальная культура как психологический феномен. Актуальные вопросы психологии, педагогики, философии 2 (11), 118-121
4. КБ Холиков. О принципе аддитивности для построения музыкальных произведений. Science and Education 4 (7), 384-389
5. КБ Холиков. Важнейшие полифонические формы многоголосных произведений. Scientific progress 2 (4), 557-562 2 (4), 557-562
6. КБ Холиков. Уровень и качество усвоения предмета музыки, закрепление памяти и способности учащихся. Science and Education 5 (2), 452-458
7. КБ Холиков. Обученность педагогике к освоению учащихся сложным способом деятельности. Science and Education 5 (2), 445-451
8. КБ Холиков. Обязанности миелина, о левом и правом пороге миелина. Science and Education 5 (2), 33-44
9. КБ Холиков. Эффективные действия сквалан-углеводород тритерпенового ряда и амаранта к заболеваниям рака, опухоли. Science and Education 5 (2), 27-32
10. КБ Холиков. Педагогическое корректирование психологической готовности ребенка к обучению фортепиано в музыкальной школе. Science and Education 4 (7), 332-337
11. КБ Холиков. Защитный уровень мозга при загрузке тренировочных занятиях и музыкального моделирование реальных произведений. Science and Education 4 (7), 269-276
12. КБ Холиков. Прослушка классической музыки и воздействия аксонов к нервной системе психологического и образовательного процесса. Science and Education 4 (7), 142-153
13. КБ Холиков. Новые мышление инновационной деятельности по музыкальной культуры в вузах Узбекистана. Science and Education 4 (7), 121-129

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

14. К.Б. Холиков. Отличие музыкальной культуры от музыкального искусства в контексте эстетика. Science and Education 3 (5), 1562-1569.
15. КБ Холиков. Модели информационного влияния на музыку управления и противоборства. Science and Education 4 (7), 396-401
16. КБ Холиков. Измерение эмоции при разучивании музыки, функция компонентного процессного подхода психологического музыкального развития. Science and Education 4 (7), 240-247
17. КБ Холиков. Манера педагогической работы с детьми одарёнными возможностями. Science and Education 4 (7), 378-383
18. КБ Холиков. Внимания музыканта и узкое место захвата подавление повторения, сходство многовоксельного паттерна. Science and Education 4 (7), 182-188
19. КБ Холиков. Сравнение систематического принципа музыкально психологического формообразования в сложении музыки. Science and Education 4 (7), 232-239
20. КБ Холиков. Мозг и музыкальный разум, психологическая подготовка детей и взрослых к восприятию музыки. Science and Education 4 (7), 232-239
21. К.Б. Холиков. Музыка как релаксатор в работе мозга и ракурс ресурсов для решения музыкальных задач. Science and Education. 3 (3), 1026-1031.
22. КБ Холиков. Характеристика психологического анализа музыкальной формы, измерение ракурса музыкального мозга. Science and Education 4 (7), 214-222
23. КБ Холиков. Абстракция в представлении музыкально психологического нейровизуализации человека. Science and Education 4 (7), 252-259
24. КБ Холиков. Ответ на систему восприятия музыки и психологическая состояния музыканта. Science and Education 4 (7), 289-295
25. КБ Холиков. Проект волевого контроля музыканта и воспроизводимость музыкального произведения. Science and Education 4 (7), 189-197
26. КБ Холиков. Психика музыкальной культуры и связь функции головного мозга в музыкальном искусстве. Science and Education 4 (7), 260-268
27. КБ Холиков. Внимание и его действие обученному музыканту и оценка воспроизводимости тренировок. Science and Education 4 (7), 168-176
28. КБ Холиков. Рост аксонов в развивающийся музыкально психологического мозга в младшем школьном возрасте. Science and Education 4 (7), 223-231
29. КБ Холиков. Аксоны и дендриты в развивающийся музыкально психологического мозга. Science and Education 4 (7), 159-167
30. КБ Холиков. Фокус внимания и влияние коры височной доли в разучивании музыкального произведения. Science and Education 4 (7), 304-311

INTERACTIVE PROGRAMS FOR FITNESS TRAINING WITH WOMEN:
ADVANTAGES

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Abstract

This article analyzes the role of modern technologies in the correct implementation of sports exercises and the promotion of a healthy lifestyle. The possibilities of monitoring and optimizing physical activity using interactive applications and smart devices are considered. The article also provides information on the state policy of Uzbekistan aimed at developing a healthy lifestyle and the role of technologies in this process. This study aims to study the possibilities of using technologies in the fields of health care and sports, and highlights practical aspects aimed at popularizing a healthy lifestyle among the population, especially women.

Keywords: Interactive programs, fitness applications, exercise techniques, women's health, smart devices, Uzbekistan's sports policy, motivation, innovation, healthy lifestyle.

Introduction

Modern technologies play a crucial role in supporting sports and a healthy lifestyle. Fitness applications and smart devices offer expanded opportunities to monitor exercise techniques, track results, and increase motivation. This article explores the significance of interactive programs and devices in promoting physical activity and their role in shaping a healthy lifestyle for women.

Main Body. Many scientists in Uzbekistan are conducting research on the development of physical education and sports. Naturally, the modern age demands advanced knowledge and widespread use of innovative technologies in all areas. The works of some Uzbek scholars on sports and technologies can be cited as follows:

1. Shohrukhova, M. (2023): In her article "Sports and Technologies: Innovative Approaches to Shaping a Healthy Lifestyle for Women", Shohrukhova analyzes the role of innovative technologies in promoting a healthy lifestyle among women. She discusses methodologies aimed at improving women's health through interactive programs and smart devices. Shohrukhova emphasizes that technologies offer opportunities to engage women in sports while enhancing their physical and mental well-being through new approaches.

2. Ismoilov, A. (2021): In his article "The Impact of Technologies on Sports Training: Theoretical and Practical Approaches", Ismoilov explores the connection between technologies and sports. He highlights how smart devices and sports applications help users better understand their bodies and assist athletes in conducting their training more efficiently and safely.

3. Karimova, D. (2022): In her article "Directions for Developing Digital Technologies in Sports", Karimova examines the benefits of using digital technologies in sports and the challenges

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

encountered in the process. She focuses on Uzbekistan's international experience in introducing and advancing technological innovations in sports science.

Opportunities offered by technologies include:

1. Monitoring with Applications

Applications like Nike Training Club provide clear video instructions on how to perform exercises correctly. Users can compare their movements with the instructions and correct their mistakes.

2. Smart Devices and Sensors

Devices such as Fitbit, Garmin, or Apple Watch track activities and provide real-time data on heart rate, calories burned, and exercise duration. This information helps users avoid technical errors.

3. Motivation and Progress Tracking

Interactive platforms offer reward systems that motivate users, such as earning points for successful exercises, setting goals, and achieving them step by step. This makes workouts not only effective but also enjoyable.

4. Opportunities for Women's Health

Specialized applications for women (e.g., programs for pregnancy exercises or body strengthening routines) contribute to improving health and quality of life.

5. Uzbekistan's Initiatives in Sports and Technology

The government of Uzbekistan pays great attention to promoting a healthy lifestyle among the population, especially women and youth. As part of the "Healthy Generation Development Program" adopted in 2023, new sports facilities are being constructed, and digital technologies are being implemented. Additionally, the government supports the integration of sports and technologies by encouraging local producers to develop fitness applications and devices. These programs aim not only to increase physical activity but also to drive the development of national sports.

6. Future Prospects of Sports Technologies

The role of technologies in supporting sports and a healthy lifestyle is expected to expand further in the future. Innovative technologies, particularly artificial intelligence and data analysis, can optimize exercises, enhance athlete preparation, and develop personalized training plans more effectively. These technologies can further advance physical activity monitoring, improving public health. Uzbekistan's sports sector is also making significant strides in adopting digital technologies, and this progress is expected to continue in the future.

7. Social Impact of Technologies

The integration of sports and technologies holds significant social importance. Through digital platforms, sports and physical activity can be promoted to women, youth, and the broader public, helping to establish a healthy lifestyle. Uzbekistan's state policy also aims to popularize sports and strengthen public health, placing significant emphasis on this goal.

Conclusion. Teaching fitness classes using interactive programs and smart devices demonstrates the positive impact of modern technologies in sports. Promoting a healthy lifestyle is a key priority of Uzbekistan's state policy, and significant achievements are being made in this area through digital solutions. With continued technological advancements, these solutions are expected to further contribute to popularizing a healthy lifestyle among the population.

References

1. "State Program for Developing a Healthy Lifestyle in the Republic of Uzbekistan." Official Government Source, 2023.
2. Shohrukhova, M. (2023). Sports and Technologies: Innovative Approaches to Shaping a Healthy Lifestyle for Women. *Uzbekistan Sports Academy Journal*, N3
3. Ismoilova, A. (2021). The Impact of Technologies on Sports Training: Theoretical and Practical Approaches. Center for Innovative Research.
4. Information on the Nike Training Club application. Online source.
5. Features and functions of Fitbit products. Official Fitbit website.
6. Khan, A., & Peterson, L. (2021). Digital Fitness Tools: The Role of Technology in Modern Exercise Practices. *HealthTech Review*.
7. Smith, J. (2020). *Interactive Platforms for Fitness and Well-being*. New York: Health Publishers.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Subsidy Association of the Republic of Uzbekistan

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Abstract

In order to effectively organize housing reforms in the country, expand the scale of construction of New Uzbekistan housing estates and modern apartment buildings, further develop the mortgage lending market, and widely introduce into practice mechanisms for refinancing loans issued by banks using their own funds.

Keywords: Subsidy, budget, loans, law, finance, payment, free, lending, expand, building.

What is a subsidy?

Subsidies are funds from the state budget issued free of charge to low-income individuals to cover part of the down payment or interest payments on a loan for the purchase of housing based on mortgage loans.

A down payment is funds allocated for the purchase of housing on the primary market (that is, new built houses). In cities and rural areas, its size will vary.

Who will receive subsidies?

These funds are allocated only to families in need of improved housing conditions, women in difficult social situations, youth taking an active part in the social life of the country and other citizens of Uzbekistan included in this category.

To receive a subsidy, a citizen must be 18 years old. If a citizen is a labor migrant, family members can submit an application on his behalf.

To approve the proposals of the Ministry of Economy and Finance, the Ministry of Construction and Housing and Communal Services, the Central Bank, the Ministry of Employment and Poverty Reduction, and the Association of Mahallas of Uzbekistan, which provide for, within the framework of the Program for Providing the Population with Housing through Mortgage Loans Based on Market Principles (hereinafter referred to as the Program):

- construction in the regions, in accordance with [Appendix No. 1](#), of multi-storey residential buildings with a modern architectural appearance, consisting of 100 thousand apartments;
- for the purpose of further financial support for construction organizations, providing them with compensation and guarantees for loans issued on the basis of market principles;
- widespread introduction of “green” housing standards into the construction processes of multi-storey buildings;

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

- allocation of at least 17 trillion soums for financing mortgage loans from the republican budget of the Republic of Uzbekistan “Uzbekistan Mortgage Refinancing Company” (hereinafter referred to as the Company) and banks’ own funds;
- allocation of mortgage loans in the amount of up to 120 million soums for the construction, reconstruction and repair of individual housing to individuals included in the Poverty Relief Program and in need of improved housing conditions;
- the widespread use by the Ministry of Economy and Finance of mechanisms for refinancing mortgage loans allocated from banks’ own funds.

Establish that, starting from June 1, 2024, the practice of allocating, based on the recommendation of the "mahalla seven" and at the expense of the Ministry of Economy and Finance, mortgage loans to persons included in the Program for the Elimination of Poverty and in need of improving their housing conditions will be introduced. At the same time mortgage loans are allocated in the amount of up to 120 million soums for a period of up to 20 years at a rate exceeding the Central Bank’s base rate by four percentage points for the purposes of construction, reconstruction and repair of individual housing. For mortgage loans, subsidies are paid to compensate for part of the initial payment in the amount of 15 percent of the allocated loan, and to cover, during the first five years of the loan term, part of the interest payments exceeding 12 percent.

The Ministry of Employment and Poverty Reduction (B. Musayev) shall, within one month, create in the electronic platform “Online Mahalla” the ability to maintain a list of families included in the Program for Removing Families from Poverty and in need of improved housing conditions.

The Chairman of the Council of Ministers of the Republic of Karakalpakstan, the khokims of the regions and the city of Tashkent, together with the “mahalla seven”, shall ensure employment of citizens included in the Program for ending poverty and who have received a loan for the construction, reconstruction and repair of individual housing, in types of activities that provide the opportunity to receive a regular income.

a) refinancing of mortgage loans allocated from banks’ own funds is carried out by the Ministry of Economy and Finance monthly no later than the 25th day of the month following the reporting month, at the Central Bank’s base rate in the amounts specified in [Appendix No. 2](#) .

Moreover, if the size of the mortgage loan required for the borrower to purchase an apartment exceeds the amounts specified in [Appendix No. 2](#) , banks are allowed to finance the missing portion of the loan by allocating mortgage loans based on market principles from their own funds;

b) mortgage loans are refinanced by the Ministry of Economy and Finance, provided that: mortgage loans are allocated to individuals for the purchase of apartments on the primary housing market (including those built on the basis of shared participation), as well as for the construction, reconstruction or repair of individual housing; the borrower uses mortgage loans allocated under the Program for the first time. This rule applies to loans allocated starting with the 2024 Program; mortgage loans are issued for a term of no more than 20 years and at a rate exceeding the Central Bank’s base rate by no more than four percentage points (with the exception of loans issued to individuals who are equity holders);

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

c) mortgage loans allocated to individuals who are equity holders are refinanced by the Ministry of Economy and Finance regardless of the interest rate.

The Ministry of Economy and Finance (I. Norkulov) should take measures to refinance mortgage loans that meet established requirements and ensure uninterrupted provision of financial resources to banks. To approve the proposal of the Ministry of Economy and Finance to allocate resources to the Company from the State Budget in the amount of 1.2 trillion soums for a period of 20 years at a rate exceeding the Central Bank's base rate by three percentage points. Establish that these resources are directed to refinancing mortgage loans that meet the requirements established by the Company and are provided to individuals for the purchase of apartments on the primary housing market for a period of up to 20 years at a rate that exceeds the Central Bank's base rate by no more than eight percentage points. To make the following changes to the current procedure for paying subsidies under the Program, in accordance with which:

- applications for the allocation of subsidies within the approved parameters will be accepted from May 15 to November 1, 2024;
- subsidies to compensate for part of the interest payments on loans allocated under the 2024 Program are paid in the part exceeding 12 percent, and for loans allocated under the 2025 Program and subsequent years - in the part exceeding the Central Bank's base rate;
- subsidies to compensate for part of the down payment on mortgage loans allocated for the purchase of apartments in the primary housing market, starting with the 2024 Program, are paid in a fixed amount - 30 million soums.
- To establish a Mortgage Support Fund under the Ministry of Economy and Finance (hereinafter referred to as the Fund) without the status of a legal entity, opened in the form of a separate treasury account.

Establish a procedure according to which, from May 1, 2024:

a) when issuing mortgage loans for the purchase of apartments on the primary housing market, the requirement to insure the subject of the mortgage against insurance risks is cancelled;

b) the right to construct multi-storey residential buildings is also granted to construction organizations that have an electronic rating assessment of "C" and "CC" in the National Information System "Transparent Construction".

At the same time, organizations with an electronic rating assessment of "C" are allowed to build housing with no more than five floors, while those with an electronic rating assessment of "CC" are allowed to build housing with no more than nine floors;

c) until January 1, 2025, when importing new construction and special equipment, the list of which is specified in [Appendix No. 6](#), a zero customs duty rate shall apply;

d) to replenish the working capital of construction organizations participating in the construction of multi-storey residential buildings in the Yangi Uzbekistan housing estates, funds in the amount of 500 billion soums are allocated from the republican budget of the Republic of Uzbekistan. At the same time:

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

The Ministry of Economy and Finance places the said funds in banks for a period of 18 months, including a grace period of 12 months, at the Central Bank's base rate, and the banks allocate the above-mentioned funds as loans to construction organizations using a two percent margin; the list of construction organizations for which loans are allocated to replenish working capital is compiled by the Ministry of Construction and Housing and Public Utilities and the Central Bank based on the rating of construction organizations;

e) for loans allocated to construction organizations in national currency for the construction of residential buildings with 9 or more floors in the city of Tashkent, 7 or more floors in other cities, 5 or more floors in rural areas, JSC "Company for the Development of Entrepreneurship" provides guarantees and compensation for a period of no more than 24 months on the principle of "1+1" based on the category of regions. In this case: guarantees and compensations are provided regardless of the loan amount; compensation is paid for a portion of the loan not exceeding 5 billion soums for each multi-apartment residential building at a rate exceeding the Central Bank's base rate by four percentage points, but not more than 1.75 times the base rate; The guarantee is provided in an amount not exceeding 2.5 billion soums for each apartment building. Determine that, from January 1, 2025, construction organizations will be allocated loans for the construction of multi-apartment residential buildings based on "green" housing standards at a rate that exceeds the Central Bank's base rate by one percentage point introduce the practice of providing individuals with "green" mortgage loans for the purchase of housing built in accordance with the requirements of "green" housing standards; take measures to attract funds from international financial institutions for the purpose of financing "green" mortgage loans.

Work on the construction of pedestrian paths, lighting systems and parking lots, landscaping and greening of territories, including tree planting, in the New Uzbekistan massifs is carried out by the Council of Ministers of the Republic of Karakalpakstan, regional and industry organizations at the expense of local budgets, the own funds of industry organizations, as well as other sources not prohibited by legislative acts; compensation payments for the reimbursement of losses in agricultural and forestry production in connection with the seizure of agricultural land plots in accordance with this Decree shall not be collected as an exception; losses caused to owners, users and tenants of land from whom land plots are seized are compensated in accordance with the procedure established by law;

In this case, new agricultural land plots are considered developed after they are registered by the Cadastre Agency in accordance with the established procedure.

The Ministry of Economy and Finance, together with other interested ministries and departments, shall submit to the Cabinet of Ministers proposals on amendments and additions to legislative acts arising from this Decree.

Deputy Prime Minister A.Zh. Ramatov, together with the Deputy Chairmen of the Council of Ministers of the Republic of Karakalpakstan shall ensure the placement of relevant land plots at electronic auctions, the completion of the construction of multi-storey residential buildings and engineering and transport communication networks within the established timeframes, the use of energy-efficient materials in the construction of multi-storey residential buildings, as well as the presence of renewable energy sources in these buildings;

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Deputy Prosecutor General S.I. Samadov - to take the necessary measures to prevent the indication of an inflated volume of work and the inclusion of unreasonably inflated prices in design and estimate documentation for the construction of multi-apartment residential buildings, and to prevent unnecessary bureaucracy, cases of corruption and violations of the law in the processes of construction and commissioning of residential buildings;

Deputy Prime Minister D.A. Kuchkarov, together with the Chairman of the Central Bank M.B. Nurmuratov, the First Deputy Chairmen of the Council of Ministers of the Republic of Karakalpakstan, the khokims of the regions and the city of Tashkent, shall ensure the timely allocation and financing of mortgage loans and subsidies.

Conclusion

Subsidies are issued for the purchase of housing at market value. That is, subsidies and “affordable houses” are two concepts that have nothing to do with each other. Also, with the approval of the decree on subsidies, the Affordable Housing Program does not end. Changes regarding the refusal to citizens to accept applications under this program have not been introduced into the legislation.

The subsidy does not mean that every applicant will be allocated funds. To do this, you must meet a number of requirements. A special commission, consisting mainly of representatives of the authorities responsible for providing the subsidy, will evaluate applicants according to the criteria and assign points according to them.

Responsible bodies are departments of internal affairs, department of finance, state tax inspectorate, employment promotion center, cadastre, department of family support, district council of the Youth Union, district, participating commercial banks. All of them are necessary to verify the authenticity of the documents provided when submitting the application.

References

1. www.sport.uz
2. www.My.gov.uz
3. www.lex.uz
4. www.gazeta.uz
5. [www.Yoshlar portali](http://www.Yoshlar_portali)

The role of superplasticizers in improving the quality and properties of construction materials

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Аннотация

Ушбу мақолада юқори мустаҳкамликка эга бўлган боғловчи моддалар олишнинг муаммоларини бартараф қилиш яъни цементнинг муҳим экологик нуқсон ва камчиликлари, уларни ишлаб чиқаришда кўп энергия талаб қилиниши, CO₂ ва чангнинг катта чиқиндилари ажралиб чиқиши, экологияга зарарлари ва буларни олдини олиш бўйича қилинган ишлар ёритилган.

Калит сўзлар: боғловчи моддалар, клинкер, цемент, суперпластификатор, механик фаоллаштириш, модификация.

Аннотация: В данной статье освещены работы по устранению проблем получения высокопрочных вяжущих, т.е. важных экологических дефектов и недостатков цементов, необходимости использования большого количества энергии при их производстве, выделения больших выбросов CO₂ и пыли, нанесения ущерба окружающей среды и их предотвращению.

Ключевые слова: вяжущие вещества, клинкер, цемент, суперпластификатор, механоактивация, модификация.

Annotation: The article covers work to eliminate the problems of obtaining high-strength binders, i.e., important environmental defects and disadvantages of cements, the need to use large amounts of energy in their production, the release of large CO₂ and dust emissions, environmental damage and their prevention.

Keywords: binders, clinker, cement, superplasticizer, mechanical activation, modification.

At present, the application of modern local materials and technologies plays an important role in construction and housing-utility complexes. This is especially related to the creation of import-substituting materials and technologies. The most important direction in the building materials industry is the production of mineral binders and various materials based on them. Due to the increase in the volume of construction, the demand for cement in the Republic of Uzbekistan is growing. Saving resources and energy, using innovative technologies and solving environmental problems in the production of hydraulic binder cement are the requirements of today and the future. At the same time, one of the main tasks is to develop new compositions of binders using various local raw materials and industrial waste. The decision of the President of the Republic of Uzbekistan PD-4335 "On additional measures for the rapid development of the construction materials industry" sets the target parameters for the production of construction materials in 2019-2025 and envisages the amount of cement produced, including the production of building materials based on high-quality and energy-efficient technologies

At present, the most important research priority is the development of nanotechnology and innovative methods in the production of cement and binders. High-grade binders are effective binders based on Portland cement clinker, which have the lowest water demand among existing mineral

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

binders. The normal density of high-grade binders is 16-20%, and that of ordinary Portland cement is 24-30%.

High-grade binders are composite hydraulic binders obtained by grinding Portland cement clinker or ordinary Portland cement with mineral powder fillers (quartz sand, slag, limestone, industrial waste or other natural raw materials) and dry organic modifier, e.g., plasticizers of various nature.

One of the ways to improve the quality of reinforced concrete products and structures, speed up the production of concrete works and save cement is the use of chemical additives. Here, the use of highly effective superplasticizers allows to significantly reduce the material, energy and labor costs of production, save 25% of cement, obtain high-strength concrete in ordinary cements by reducing the water-cement ratio, and increase the quality and durability of structures.

The increase in strength of concrete prepared on the basis of traditional technology using superplasticizers and concrete based on high-quality binders is significantly different from each other. After a certain time from the time of preparation of the KTSB-based concrete mixture, its mobility is sharply lost, which leads to an intensive increase in the hardening of concrete (after 6 ... 8 hours). Under normal conditions, the strength of concrete based on high-quality binders is 15...25 MPa after 16 hours, and 20...60 MPa after 1 day, or it allows to significantly reduce the time of wet heat treatment. Researchers explain this by the fact that cement particles are "preserved" by a dense molecular shell of superplasticizer, which prevents moisture from the environment from penetrating into the cement particles. During the production of high-quality binders, superplasticizer molecules are not simply "mechanically" attached to cement particles, but form a "shell" on their surface layer up to 1...2 microns. As a result, the active zones of cement particles become hydrophobic.

Mineral additives included in mechanically activated cements should be characterized by a high amount of silicon and its compounds and low moisture content. It should be noted that in order to reduce the cost of high-quality binders, a third component is often added - a mineral soft filler with inert or pozzolan activity of natural and anthropogenic origin. The use of anthropogenic raw materials in the production of Portland cement should not only prevail over the use of natural raw materials in the production technology of Portland cement clinker, and even completely replace them, and in the second stage, they should be the second main component in the production of mixed cement. By using the complex additive, it was possible to obtain fast-hardening concrete by replacing cement with sour fly ash of thermal power plants by up to 30%. When using a complex admixture, 40% replacement of cement with fly ash was achieved without reducing the strength of concrete compared to the strength of concrete without admixture. According to the information provided by the researchers, reasonable areas of use are identified as a result of pilot-production tests of effective concrete prepared using high-quality binders and fine-grained multi-component cements.

Production of high-strength concrete (500-800 grade) or low-strength concrete with a cement saving of up to 80% from a binder based on M400 Portland cement and granulated blast furnace slag, as well as the use of finely dispersed high-grade binders based on construction sand allows to save up to 50% of Portland cement for 1 m³ of 200-300 grade concrete. The use of high-quality binders - finely divided multi-component cements provides a saving of 40-70% of cement, taking into account the consumption of cement in the production of building materials.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

At the same time, concretes made from high-quality binders obtained using slag are characterized by increased sulfate resistance, frost resistance and a number of other positive properties. This allows to significantly save cement. The use of electric steel melting slag in making high-grade binders leads to an average reduction of 30% in water demand of the binder. These factors allow to obtain high-grade binders with a strength of 57.4 MPa with 50% electric steel melting slag in 28 days. An increase in the amount of electric steel melting slag in high-grade binders inevitably leads to a sharp reduction in the setting time of the cement paste and a decrease in the initial strength. Mineral additives are classified as active and inert according to the nature of their influence on the hardening process of cement. Active additives are artificial silicate materials with hydraulic properties in volcanic or sedimentary rocks, including Ca(OH)_2 .

As a result of research conducted by researchers, using limestone powder, volcanic ash, thermal power plant ash and quartz powder to obtain high-quality binders from active mineral additives of different origins, it is possible to obtain high-quality concretes from strength class V60 to V100, while preparing concretes with the same performance reduces the water requirement of the mixture and concrete by 25-30%. In addition, the high rate of increase in the strength of concrete based on high-quality binders led to the conclusion that the strength of the products can be removed from the mold in 18-24 hours. It was found that grinding cement with a plasticizer accelerates the process. This indicates that, in addition to the plasticizing effect, during grinding, the effect of the additive to penetrate into the cracks of the material being crushed is explained by the effect of pushing as a quoin. In addition, it can be seen that the kinetics of crushing granite in obtaining high-grade binders is the same as that of previously studied anthropogenic raw materials. It has been found that the use of complex binders and the arrangement of filler grains at a high density significantly increase the strength properties. An optimal choice of filler, using anthropogenic sands in mechanically activated compositions allows to obtain fiber concrete with a compressive strength of 160.2 MPa and a bending strength of 31.2 MPa. As a result of the work carried out, effective multi-functional modifying additives on the basis of high-grade concrete were obtained for monolithic concrete mixtures, which ensures acceleration of hardening by 120...150%, the strength of hardened concrete under normal conditions was more than 30 and 50 MPa on the 1st and 3rd day, respectively.

At a temperature of 10 ± 2 °C, the increase in strength with the addition of the additive was 200 ... 250% (more than 20 and 40 MPa in 1st and 3rd days) and at a temperature of 2 ± 2 °C more than 300% (more than 2 and 15 MPa). At the time of 28 days, the use of the developed additive ensures the production of concrete of grade V60. Concrete mixtures using high-quality binder additives up to 15% in the cement mass are characterized by a high mobility class P5 and belong to the class of self-compacting concrete mixtures. At the same time, the mechanism of action of the additive consists in the rapid formation of a crystal hydrate structure with a low demand for water and an increase in the level of hydration of the main highly active cement. As a complex modifier of cement, during grinding, it is recommended to use a superplasticizer based on polycarboxylates and a grinding process intensifier. The advantages of high-quality binders include the versatility of compositions.

At the same time, high-grade binders, especially ultra-fine cements, can lead to insufficient hydration of the concrete clinker foundation, which affects the strength of concrete products. The strength of ultra-fine cement samples after three years reaches 420 kg/cm², while that of ordinary cement is only 175 kg/cm². Modern studies have shown that it is enough to increase the specific surface

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

area of binders by 5000-6000 cm²/2, because the strength of one-day concrete doubles, but at the same time, cracks may appear in the panels. Another serious obstacle to the complete transition to the use of high-quality fasteners is the versatility of their composition, which can inevitably lead to compatibility problems. The requirement to solve these problems leads to the achievement of our purpose.

References:

1. Decision of the President of the Republic of Uzbekistan "On additional measures for the rapid development of the construction materials industry" No. PD-4335 dated May 23, 2019.
2. Batrakov V.G., Falikman V.R., Babaev Sh.T. Experience in the development and use of effective superplasticizers in the production of reinforced concrete products / Ways of technical re-equipment of the prefabricated reinforced concrete industry. - M., DNTP, 1987. - pp. 112-120.
3. Turdiev Murodjon Obid ugli. Features of modern energy efficient, resource-saving foam concrete based on high-quality binders. Dissertation written for obtaining the Master academic degree. Samarkand – 2022. UDC:666.9
4. Kholova N., Abdullaev R. Censuring the durability of foundations of buildings and structures //IOP Conference Series: Earth and Environmental Science. – IOP Publishing, 2021. – T. 839. – №. 5. – C. 052044.
5. Kholova N. A. Production of Reinforced Concrete Products by Application of Energy Saving Methods is the way of Increasing the Economic Efficiency of National Economy //EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION. – 2022. – T. 2. – №. 3. – C. 297-298.
6. Холова Н.А. МЕТОДЫ УХОДА, ПРИМЕНЯЕМЫЕ С ИСПОЛЬЗОВАНИЕМ СОЛНЕЧНОГО СВЕТА НА ОТКРЫТЫХ ПЛОЩАДКАХ ДЛЯ УЛУЧШЕНИЯ КАЧЕСТВА СВЕЖЕУЛОЖЕННОГО БЕТОНА //Gospodarka i Innowacje. – 2022. – Т. 24. – С. 165-168.
7. Fayzullaevna S. N., Akhmedovna K. N. Significant Technological Methods of Production of Composite Materials //EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION. – 2023. – Т. 3. – №. 2. – С. 36-40.
8. Akhmedovna K. N. Production of Composite Materials by Important Technological Methods //EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION. – 2023. – Т. 3. – №. 4. – С. 102-105.
9. Холова Н. ЮҚОРИ МАРКАГА ЭГА БЎЛГАН БОҒЛОВЧИ МОДДАЛАР ОЛИШ УСУЛЛАРИ //Development of pedagogical technologies in modern sciences. – 2024. – Т. 3. – №. 3. – С. 244-250.
10. Холова Н. А. Меъморий чизмаларнинг асосий турлари //Интернаука. – 2019. – №. 6-2. – С. 47-49.
11. Kholova N. A. MAINTENANCE METHODS USING SUNLIGHT IN OUTDOOR AREAS TO IMPROVE THE QUALITY OF FRESHLY PLACED CONCRETE //Gospodarka i Innowacje. – 2022. – Vol. 24. – pp. 165-168.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

IMPROVEMENT OF TEACHING THE TOPIC “BEGINNING TO WORK WITH ELECTRONIC MAIL” BASED ON SOFTWARE TOOLS

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Abstract

This article discusses the issues of creating multimedia presentations based on modern software tools and organizing lessons using them in teaching the topic “Getting Started with Email” in the 5th grade of “Informatics and Information Technologies” subject in general secondary schools today.

Keywords: Informatics and Information Technologies, Getting Started with Email, software tool, electronic manual, hypertext, sound, graphics, video, test, multimedia, animation, simulation model, general secondary education, software tool.

Introduction. The use of modern information technologies in education is certainly effective. Some opinions are critical of the impact of modern information technologies on the minds of young people, which is explained by the fact that young people are naturally attracted to the Internet and mobile communication devices. We all know that the problem cannot be solved by restricting mobile technology and the Internet, but young people still remain under criticism. Nowadays, when raising a well-rounded generation, it is necessary to teach the culture of using information on the Internet (information immunity). Directing interest in these technologies to the right goal is associated with increasing the national database. In particular, the increase in the national database in electronic applications and virtual educational systems in the education system serves as an effective tool for young people to learn.

It is known that about 25% of students can master the usual - traditional passage of the lesson, it has been proven by pedagogical scientists. Experience shows that simultaneously listening to the lecture, viewing the material on the computer screen and actively controlling its output on the screen increases the quality of mastering.

Pedagogical software is a didactic tool designed to partially or completely automate the educational process using computer technologies. They are promising for increasing the efficiency of the educational process. In the teaching of the subject "Informatics and Information Technologies" is considered one of the forms of using pedagogical software tools and is used as a means of teaching modern technologies. Pedagogical software tools include: a software product (a set of programs) aimed at achieving specific didactic goals in the subject, technical and methodological support, additional and auxiliary tools. When developing pedagogical software tools, the intellectual level, motivation, functional state and level of work of the students of the corresponding audience should be taken into account. The concept of motivation means the process of the individual acquiring significance for the activity being carried out, creating a stable interest in it, and transforming externally defined goals into internal needs. Thus, motivation can be recognized as an internal driving force that ensures the active

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

involvement of a person in the educational process. It should be noted that the motivational qualities of a person form the basis of cognitive activity, in this process the student sets appropriate educational goals, manages the process and evaluates the level of its success. In this case, the need leads to the development of different levels of motivation for the student's professional formation in the process of independent learning. In the process of the student's professional formation, the following three levels of motivation can be distinguished: The initial level of motivation is associated with the need for professional development and arises on the basis of external social and personal motivations. The average level of motivation arises in the process of acquiring professional knowledge and creates the necessary foundations for further professional activity. A high level of motivation reflects the student's needs for development and the realization of his creative potential. The development of creative potential leads to the creation of optimal conditions for satisfying the student's needs for self-development.

In the study, we will consider improving the teaching of the topic "Starting Programming" using software tools, unlike the school textbook, to make it easier for teachers and students to learn, with animated actions.

The next topic given in the 5th grade "Informatics and Information Technologies" textbook of general secondary schools is the topic "Starting to Work with Email", and the following texts and images are given in the school textbook:

In this module, you will develop your skills in working with email to develop your project. In this project, you will work with your friends to write messages that are written and sent via email.

In addition, you will learn the following:

- how to send one email to several people;
- how to reply to emails;
- how to format text in emails (for example, change font type, size, and color);
- how to organize emails into folders;
- how to stay safe when using email.

Before you start You need to know the following:

- what email is and how to use it (you may not have used it yet);
- that you need to have an email account;
- how to log in to an email account;
- how to control the cursor and use the mouse buttons on a computer;

Introduction Email is email.

You need an email account to send and receive emails.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

You can get an email address from different email providers. For example, you can use Gmail or Microsoft Outlook. In this module, you will learn how to use Gmail. All providers have almost the same tools, but the buttons may be located in different parts.

When you have an email account, you also get an email address. In general, no two email addresses are the same. That is, each person's email address is unique. If two people had the same email address, they would receive your emails and you would receive their emails (see Figure 1).

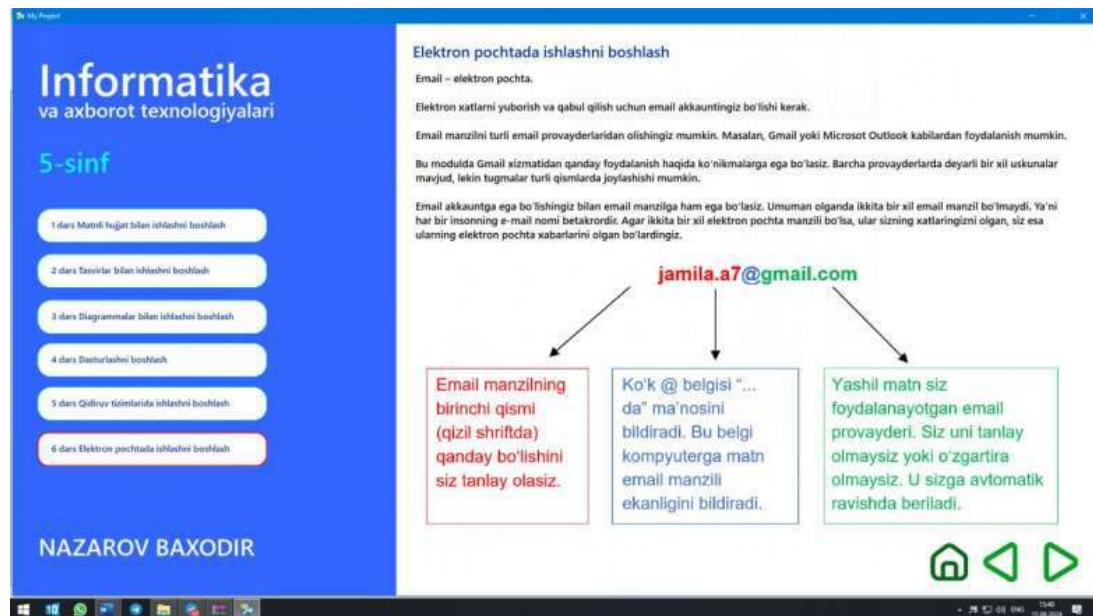
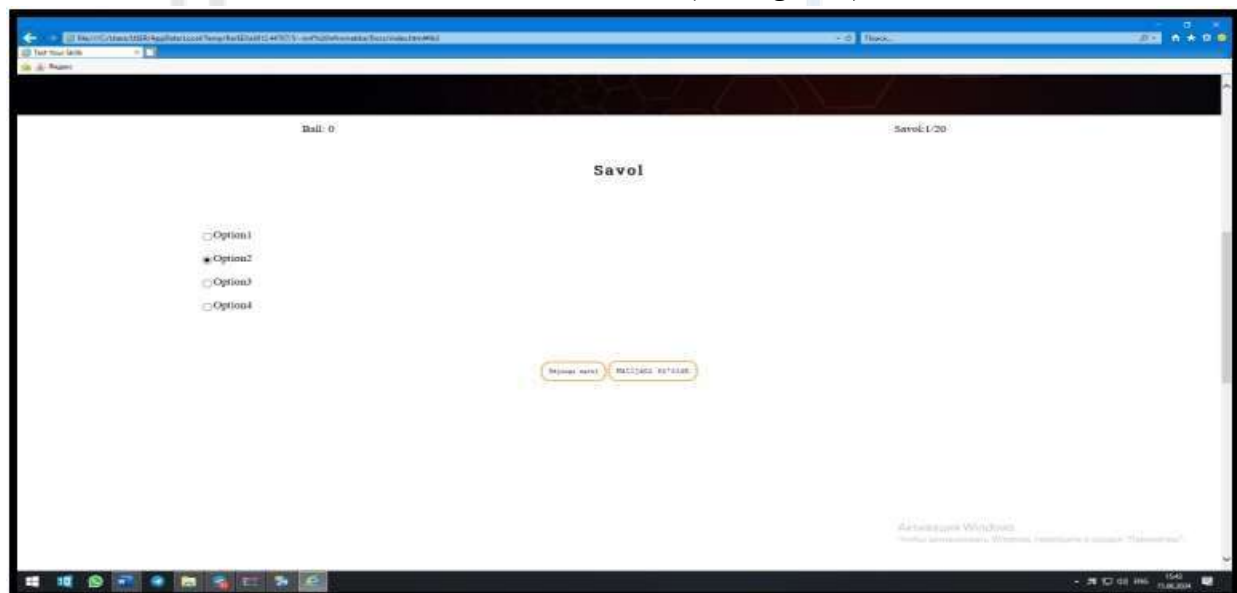


Figure 1. Email Work Window

If the email address you selected already exists, you will need to change the first part (in red). For example, you can add meaningful numbers at the end. For example, your favorite number.

When you click the transfer button in the window above, the following Email Work Window will open on the screen, which also contains the relevant buttons (see Figure 2).



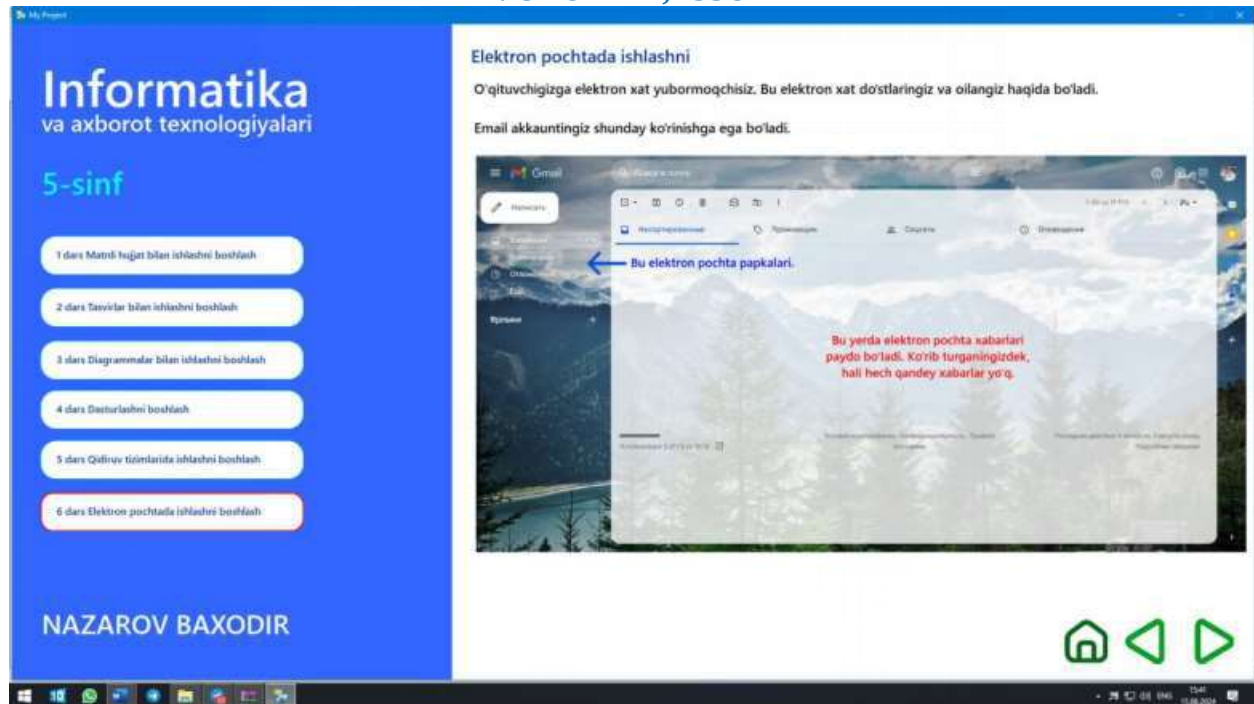


Figure 2. Email window

In addition to the information provided in the 5th grade "Informatics and Information Technologies" textbook, the study also presents animations on topics of interest to students based on software tools that they can understand and repeat over and over again.

After studying the topics given above, they can complete test tasks on the topics to consolidate their knowledge (see Figure 3).

Figure 3. Test work window

Before working on the tests in the given window, the test selection window opens and in this window there is a sequence of topics, from which students can choose the one they like.

Similarly, the elements of the remaining sections and topics in the subject "Informatics and Information Technologies" of general secondary schools for the 5th grade, as well as the process of solving the relevant problems and the tasks to be performed are illustrated one by one in the multimedia electronic manual using animated developments.

In conclusion, it can be said that the use of a multimedia electronic manual in teaching all topics of the subject "Informatics and Information Technologies" of general secondary schools for the 5th grade not only increases the efficiency of students' mastery, but also increases their opportunities for independent work.

List of used literature

1. Lutfullayev M.X. Multimediali didaktik vositalar asosida ta'lim tizimi samaradorligini oshirish // Ta'lim va tarbiya. – Toshkent: -2003-y. -№3-4. B. 55 - 57.
2. Lutfillayev M.H., Fayziyev M.A. Multimediali elektron darsliklarda o'qitish metodikasi // Uzluksiz ta'lim. – Toshkent, 2002-y. -№4. -B. 79-81.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

3. Lutfillayev M.H. Elektron darsliklardan o'quv jarayonida foydalanish // Xalq ta'limi jurnali. - Toshkent: -2003-y. -№4. -B. 92-93.
4. Lutfillayev M.H. Multimediali elektron darsliklar yaratish talablari // Boshlang'ich ta'lim. - Toshkent: -2003-y. -№4. -B. 20-21.
5. Asfandiyorovich F. N. et al. BASICS OF PROGRAMMING FROM THE TEXTBOOK OF INFORMATICS AND INFORMATION TECHNOLOGIES CHAPTER PYTHON PROGRAMMING LANGUAGE METHODOLOGY OF MULTIMEDIA //Galaxy International Interdisciplinary Research Journal. – 2022. – T. 10. – №. 1. – C. 778-781.
6. Xasanovich, Prof L. M., et al. "Development of Computer Simulation Model Develops Creative Thinking of the Student." *JournalNX*, vol. 7, no. 03, 2021, pp. 167-171.
7. Asfandiyorovich F. N. Teaching the Subject of Repetitive Algorithms Based on Multimedia Electronic Manuals //Eurasian Journal of Learning and Academic Teaching. – 2023. – T. 16. – C. 42-45.
8. Fayziyev Nozim Asfandiyorovich. (2022). TARMOQLANUVCHI ALGORITMLAR MAVZUSINI DOIR KOMPYUTER IMITASION MODELI ASOSIDA TAKOMILLASHTIRISH. *RESEARCH AND EDUCATION*, 1(2), 273–278.
9. Fayziyev, N. (2023). UMUMTA'LIM MAKTABLARIDA "INFORMATIKA VA AXBOROT TEXNOLOGIYALARI" FANINI MULTIMEDIALI ELEKTRON QO'LLANMA ASOSIDA O'QITISH SAMARADORLIGINI ANIQLASH. *International Scientific and Practical Conference on Algorithms and Current Problems of Programming*, 1(01). Retrieved from <http://ojs.qarshidu.uz/index.php/con/article/view/175>
10. Fayziyev Nozim Asfandiyorovich, & Toxirqulov Zufar Jurabek o'g'li. (2023). Registering and Creating Presentations on prezi.com. *World of Semantics: Journal of Philosophy and Linguistics*, 1(1), 66–71. Retrieved from <http://wos.semanticjournals.org/index.php/JPL/article/view/11>
11. Fayziyev N. THE IMPORTANCE OF IMPLEMENTING DIGITAL TECHNOLOGIES IN THE EDUCATIONAL SYSTEM //Multidisciplinary Journal of Science and Technology. – 2024. – T. 4. – №. 10. – C. 172-175.
12. Asfandiyorovich F. N., O'g'li T. Z. J. ZAMONAVIY DASTURIY VOSITALAR ASOSIDA XORIJIY TILLARGA OID TAQDIMOTLAR YARATISH //Science and innovation. – 2024. – T. 3. – №. Special Issue 19. – C. 359-363.
13. Asfandiyorovich F. N. UMUMIY O'RTA TA'LIM MAKTABLARIDA "INFORMATIKA VA AXBOROT TEXNOLOGIYALARI" FANINI TAKOMILLASHTIRILGAN METODIKA ASOSIDA O'QITISHNI TAKOMILLASHTIRISH //Multidisciplinary Journal of Science and Technology. – 2023. – T. 3. – №. 5. – C. 198-200.
14. Asfandiyorovich F. N. TARMOQLANUVCHI ALGORITMLAR MAVZUSINI MULTIMEDIALI ELEKTRON QO'LLANMALAR ASOSIDA TAKOMILLASHTIRISH //ЎЗБЕКИСТОННИНГ МУСТАҚИЛЛИК ДАВРИДАГИ ЯНГИ ТАРИХИ ВА ФАЛСАФИЙ ТАФАККУРИНИНГ ДОЛЗАРБ МУАММОЛАРИ. – 2022.

PEDAGOGICAL SKILLS IN PROMOTING ENGLISH AMONG YOUNG PEOPLE

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Abstract: This article examines key pedagogical skills for promoting English learning among young people, including effective communication, classroom management, and innovative teaching methods. It highlights the importance of cultural awareness and technology integration in engaging students and enhancing language acquisition, helping them achieve success in both academic and professional settings.

Key words: Pedagogical skills, English language learning, young learners, communication, classroom management, innovative teaching methods, cultural awareness, technology integration, language acquisition.

Introduction

In today's interconnected world, English serves as a bridge for communication, education, and professional advancement. For young people, mastering English is not only a tool for personal development but also a gateway to greater opportunities in a globalized economy. As the importance of English continues to rise, the role of educators in fostering language acquisition becomes increasingly vital. Effective teaching goes beyond merely imparting language skills; it involves engaging students in a way that motivates them, nurtures their interest, and ensures their steady progress. Pedagogical skills are the foundation of successful English teaching, particularly for young learners who require a tailored approach to language instruction. These skills include the ability to communicate clearly, manage diverse classroom dynamics, and employ innovative teaching methods that make learning both interactive and enjoyable. Furthermore, integrating cultural awareness into the curriculum allows students to connect with the global context of English, while the use of modern technologies helps to adapt learning to various needs and preferences. For many educators, the challenge lies in not only mastering these skills but also applying them in a way that resonates with young learners. Creating a positive, supportive, and dynamic learning environment can significantly impact how students perceive and engage with the English language. This article will delve into the essential pedagogical skills that promote English learning, examining how effective communication, classroom management, creative teaching strategies, cultural sensitivity, and technology can be harnessed to shape young learners' English proficiency and enthusiasm for the language. By equipping teachers with these skills, we can enhance their ability to not only teach English effectively but also to inspire a lifelong interest in learning the language. The goal is to empower educators to meet the unique needs of young learners while fostering a love for the English language that extends beyond the classroom.

Materials and Methods

To explore the pedagogical skills necessary for promoting English among young learners, this study utilizes a combination of qualitative research methods, including classroom observations, teacher interviews, and a review of existing literature on language pedagogy. The primary focus is on identifying the key strategies that foster effective English language learning in various educational contexts.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Participants: The study involved 30 English language teachers from primary and secondary schools, each with varying levels of experience in teaching young learners. These teachers were selected based on their use of diverse teaching methods and their experience with integrating technology and innovative practices in their classrooms.

Classroom Observations: Over a period of three months, classroom observations were conducted to assess the use of specific pedagogical skills in real teaching environments. Teachers' methods for classroom management, communication, and engagement were closely monitored, with a focus on how these approaches impacted students' participation and language acquisition. A standardized observation guide was used to ensure consistency in data collection across different classrooms.

Teacher Interviews: In-depth semi-structured interviews were conducted with the participating teachers to gain insights into their approaches to teaching English. Teachers were asked about their experiences, challenges, and strategies for motivating young learners, as well as their use of technology and cultural elements in lessons. The interviews also explored their views on the most effective teaching methods and how they adapt their strategies to meet the needs of diverse learners.

Review of Literature: A comprehensive review of academic literature was conducted to analyze existing research on effective pedagogical skills in language teaching. This review focused on studies related to communication techniques, classroom management, the use of games and interactive activities, and the integration of technology in language education. Sources included peer-reviewed journal articles, books on language pedagogy, and case studies from various educational settings.

Data Analysis: The data collected from classroom observations and interviews were analyzed using thematic analysis to identify recurring patterns and themes. Key pedagogical skills were categorized based on their impact on student engagement and language learning outcomes. The findings from the literature review were also synthesized to compare and contrast with the results from the field study.

This mixed-methods approach enabled a thorough examination of the practical and theoretical aspects of pedagogical skills in promoting English among young learners, providing a comprehensive understanding of best practices in this field.

Results and discussion

Results

The study's findings revealed several key pedagogical skills that positively influence the promotion of English learning among young learners:

Effective Communication: Teachers who employed clear, simplified communication techniques saw higher levels of student participation. Visual aids and simplified instructions allowed students to grasp difficult concepts more easily, leading to improved engagement in classroom activities.

Classroom Management: Structured yet flexible classroom management approaches resulted in better student behavior and increased time for language practice. Cooperative learning and peer interaction contributed to a more collaborative learning environment, encouraging active participation.

Innovative Teaching Methods: The use of interactive methods such as games, role-playing, and project-based learning significantly enhanced student engagement. These creative approaches

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

also improved language retention and concept understanding, as students were more responsive to hands-on and dynamic activities.

Cultural Awareness: Incorporating cultural elements into lessons, such as English-speaking traditions and stories, increased student interest in the language. This approach provided context and relevance, helping students understand the broader application of English in global settings.

Technology Integration: Digital tools such as language apps, multimedia presentations, and online games positively impacted student engagement. Teachers who utilized technology observed higher participation rates, particularly among students with different learning styles.

Discussion

The results highlight the critical role that specific pedagogical skills play in fostering English learning among young students:

Effective Communication: Clear communication between teachers and students ensures that learning objectives are understood, building students' confidence in using English. These findings align with research that emphasizes the importance of scaffolded communication for developing language skills in young learners.

Classroom Management: Effective classroom management not only maintains order but also maximizes time for English language practice. Well-structured classrooms create a conducive environment for cooperative learning, allowing students to work together and practice language use in a supportive setting.

Innovative Teaching Methods: Interactive and experiential methods like games and role-playing provide real-life contexts for language use, making learning more enjoyable and relevant. These findings support previous research, which shows that active learning techniques significantly improve student motivation and retention of language skills.

Cultural Awareness: Incorporating cultural content enhances students' understanding of English as a global language. This approach fosters both language proficiency and global awareness, aligning with studies that highlight the role of cultural competence in motivating language learners.

Technology Integration: The strategic use of technology enhances learning by offering diverse, engaging ways for students to interact with English. These findings confirm the value of digital tools in personalizing learning and providing authentic language practice, particularly in classrooms with diverse learning needs.

Mastering these pedagogical skills allows teachers to create a dynamic and engaging learning environment, promoting both language proficiency and a positive attitude toward English learning.

Conclusion

In conclusion, this study highlights the crucial role of pedagogical skills in promoting English language learning among young learners. Key skills such as effective communication, classroom management, the use of innovative teaching methods, cultural awareness, and the integration of technology have been shown to significantly enhance student engagement and language acquisition. Teachers who master these skills create a supportive and dynamic learning environment that motivates students and improves their English proficiency. Moreover, the findings emphasize the importance of ongoing professional development for educators to stay updated on modern teaching strategies and technological advancements. By continuously refining

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

their pedagogical techniques, teachers can better meet the diverse needs of their students, helping them not only to learn English effectively but also to develop a lifelong interest in the language.

References

1. Brown. H. D. 2007. "Principles of Language Learning and Teaching" 5th ed. Pearson Longman. Pp. 1-500.
2. Cook. V. 2016. "Second Language Learning and Language Teaching" 4th ed. Routledge. Pp. 1-300.
3. Harmer. J. 2015. "The Practice of English Language Teaching" 5th ed. Pearson Education. Pp. 1-450.
4. Larsen-Freeman. D. 2014. "Techniques and Principles in Language Teaching" 3rd ed. Oxford University Press. Pp. 1-400.
5. Lightbown. P. M., and Spada, N. 2013. "How Languages Are Learned" 4th ed. Oxford University Press. Pp. 1-250.
6. Nunan. D. 2003. "Practical English Language Teaching" McGraw-Hill. Pp. 1-350.
7. Richards. J. C., and Rodgers, T. S. 2014. "Approaches and Methods in Language Teaching" 3rd ed. Cambridge University Press. Pp. 1-300.
8. Schmidt. R. 1990. "The Role of Consciousness in Second Language Learning." "Applied Linguistics" 11(2) 129-158.
9. Tomlinson. B. 2013. "Developing Materials for Language Teaching" 2nd ed. Continuum. Pp. 1-350.
10. Zhang. D. 2018. "Technology-Enhanced Language Learning: A Review of the Literature." "Journal of Language Teaching and Research" 9(5) 1063-1070 pp. 1063-1070.

IMPROVING THE ORGANIZATIONAL STRUCTURE OF ENTERPRISE MANAGEMENT

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Abstract: Improving the organizational structure of enterprise management is crucial for enhancing efficiency, adaptability, and competitiveness in today's dynamic business environment. This paper explores modern approaches to organizational design, emphasizing the shift from traditional hierarchical frameworks to flexible, technology-driven, and employee-centric models. It examines the impact of globalization, digital transformation, and sustainability on restructuring efforts, highlighting the benefits of agile and hybrid structures. Key challenges, such as resistance to change and aligning structures with strategic goals, are discussed alongside strategies for successful implementation. By adopting innovative frameworks, enterprises can foster collaboration, empower employees, and achieve sustainable growth. The findings underscore the importance of continuous evaluation and adaptation to remain competitive in an ever-evolving global economy.

Keywords: Organizational structure, enterprise management, digital transformation, globalization, sustainability, agile frameworks, employee empowerment.

The effectiveness of any enterprise largely hinges on its organizational structure, which serves as the backbone of its operations, decision-making processes, and overall management efficiency. In a rapidly evolving global economy, marked by technological advancements, shifting market dynamics, and increasing competition, enterprises are compelled to reevaluate and improve their organizational structures to maintain relevance and achieve sustainable growth. An optimized organizational structure not only fosters better coordination and communication within an organization but also enhances its adaptability to external changes, thereby ensuring long-term success. Organizational structure refers to the formal system of tasks, workflows, reporting relationships, and communication channels that connect various units within an enterprise. It provides a framework for defining roles, responsibilities, and hierarchies, thereby enabling employees and managers to work cohesively toward shared objectives. However, traditional structures, such as hierarchical or functional models, often struggle to meet the demands of contemporary business environments, which are characterized by complexity, uncertainty, and a need for rapid decision-making. As a result, enterprises are increasingly exploring innovative approaches to restructure their organizations to align better with strategic goals, enhance employee engagement, and improve operational efficiency.

The need for improvement in organizational structures has gained prominence with the advent of digital transformation and globalization. The integration of digital tools and technologies has fundamentally altered the way enterprises operate, enabling greater collaboration across departments and geographies. However, these advancements also necessitate a shift away from rigid, siloed structures toward more flexible, network-based models that promote agility and responsiveness. Furthermore, globalization has expanded the scope of enterprise activities,

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY**VOLUME-4, ISSUE-11**

necessitating structures that can manage diverse markets, cultures, and regulatory frameworks effectively. Another critical driver for improving organizational structures is the growing emphasis on sustainability and corporate social responsibility (CSR). Modern enterprises are expected to not only generate profit but also contribute to social and environmental well-being. This dual mandate requires organizational structures that integrate sustainability goals into core business strategies, facilitate cross-functional collaboration, and ensure accountability at all levels. For instance, incorporating sustainability committees or cross-departmental teams dedicated to CSR initiatives can help enterprises address these emerging priorities effectively.

Employee-centric considerations also play a pivotal role in the discourse on organizational restructuring. The modern workforce is increasingly diverse, with employees seeking more autonomy, opportunities for growth, and a sense of purpose in their roles. Traditional hierarchical structures often fail to meet these expectations, leading to disengagement and high turnover rates. To counter these challenges, enterprises are adopting flatter, decentralized structures that empower employees, foster innovation, and create a more inclusive workplace culture. Such structures not only improve employee satisfaction but also enhance the organization's ability to attract and retain top talent in a competitive labor market. Despite the numerous benefits of improving organizational structures, the process is fraught with challenges. Resistance to change, lack of clear vision, inadequate resources, and misalignment with corporate strategy are common obstacles that enterprises must navigate. Additionally, the process of restructuring can disrupt operations and create uncertainty among employees, necessitating careful planning and effective change management. Leaders must balance the need for innovation with the stability required to maintain business continuity during transitional periods. This paper seeks to explore the various dimensions of improving organizational structures in enterprise management, focusing on the principles, strategies, and best practices that drive successful outcomes. It will examine the theoretical underpinnings of organizational design, analyze contemporary trends such as digital transformation and agile methodologies, and provide case studies of enterprises that have successfully restructured to enhance performance. Furthermore, the paper will discuss the critical role of leadership in guiding organizational change, highlighting the importance of vision, communication, and stakeholder engagement.

The concept of organizational structure has been central to management theories for decades, evolving in response to changes in business environments and management paradigms. Classical theories, such as those proposed by Henri Fayol and Max Weber, emphasized rigid hierarchies, specialization, and centralized decision-making. These early models were designed to enhance efficiency and control, particularly in industrial-era enterprises where predictability and standardization were paramount. However, as businesses expanded into global markets and faced increasingly complex challenges, the limitations of traditional structures became evident. Modern theories of organizational design advocate for more flexible and adaptive structures. Contingency theory, for instance, argues that there is no one-size-fits-all solution to organizational structure. Instead, the optimal structure depends on factors such as the organization's size, industry, strategy, and external environment. Similarly, systems theory emphasizes the interconnectedness of various organizational components, suggesting that changes in one area can have cascading effects throughout the enterprise. These perspectives underscore the importance of aligning organizational structure with broader strategic goals and external demands.

Drivers of Change in Organizational Structures. The necessity of improving organizational structures arises from several internal and external pressures. Among the most significant are technological advancements, globalization, and changing workforce dynamics.

Technological Advancements: The digital revolution has reshaped how businesses operate, necessitating a rethinking of traditional organizational structures. Technologies such as artificial intelligence (AI), big data analytics, and cloud computing have enabled real-time communication and decision-making, reducing the relevance of hierarchical decision chains. Many enterprises are transitioning to network-based or matrix structures that leverage technology to facilitate collaboration across departments and geographies. For example, the adoption of enterprise resource planning (ERP) systems allows organizations to integrate various functions such as finance, supply chain, and human resources, leading to greater efficiency and coherence.

Globalization: Globalization has expanded the geographic reach of enterprises, requiring them to operate in diverse cultural, regulatory, and economic contexts. This complexity necessitates organizational structures that are not only scalable but also flexible enough to adapt to local conditions. Multinational corporations (MNCs) often adopt transnational structures, which combine global coordination with local responsiveness. Such structures enable MNCs to maintain consistency in branding and operations while tailoring products and services to local markets.

Changing Workforce Dynamics: The modern workforce is increasingly diverse, both demographically and culturally, leading to shifts in employee expectations and workplace norms. Employees today value autonomy, opportunities for professional growth, and a sense of purpose in their work. Traditional hierarchical structures, characterized by rigid reporting lines and limited upward mobility, often fail to meet these expectations. Consequently, many organizations are moving toward flatter structures that empower employees, encourage innovation, and foster a collaborative culture.

Types of Organizational Structures and Their Evolution. Over the years, various types of organizational structures have emerged, each with its advantages and limitations. The evolution of these structures reflects the changing priorities and challenges faced by enterprises.

Functional Structures: Functional structures group employees based on specialized roles or functions, such as marketing, finance, or production. This approach promotes expertise and efficiency within each function but can lead to silos that hinder cross-departmental collaboration. While functional structures remain common in traditional industries, their limitations have prompted many organizations to explore more integrative models.

Divisional Structures: Divisional structures organize the enterprise into semi-autonomous units based on products, services, or geographic regions. Each division operates as a self-contained entity with its resources and objectives. This model enhances flexibility and accountability but can result in redundancies and inconsistencies across divisions. Divisional structures are particularly popular among large, diversified companies that operate in multiple markets.

Matrix Structures: Matrix structures combine elements of functional and divisional models, creating dual reporting lines for employees. For example, a marketing professional in a matrix organization might report to both a functional manager and a product manager. This approach fosters collaboration and resource sharing but can create confusion and conflicts over authority. Matrix structures are often used in project-based industries such as construction and information technology.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Network Structures: Network structures are characterized by decentralized decision-making and a reliance on external partnerships and collaborations. These structures are well-suited to dynamic environments where flexibility and innovation are critical. For instance, technology startups often adopt network structures to leverage external expertise and scale operations rapidly.

Agile and Flat Structures: In recent years, the rise of agile methodologies has inspired organizations to adopt flatter structures that prioritize speed, adaptability, and customer focus. Agile structures often feature self-organizing teams that operate independently while aligning with broader organizational goals. Companies like Spotify and Tesla have successfully implemented agile frameworks to drive innovation and respond quickly to market changes.

Challenges in Restructuring Organizational Structures. While the benefits of improving organizational structures are well-documented, the process of restructuring is fraught with challenges. Resistance to change is perhaps the most common obstacle, as employees and managers may feel uncertain about their roles or fear job loss. Overcoming resistance requires clear communication, transparency, and the involvement of stakeholders in the decision-making process. Another challenge lies in aligning the new structure with the organization's culture and strategic goals. A mismatch can lead to inefficiencies and employee dissatisfaction. For example, adopting a decentralized structure in an organization with a deeply ingrained hierarchical culture may create confusion and conflict. Leaders must carefully assess the organization's readiness for change and provide the necessary training and resources to facilitate the transition. Additionally, the process of restructuring can be resource-intensive, requiring significant investments in time, money, and expertise. Enterprises must weigh the potential benefits of restructuring against the associated costs and risks, ensuring that the new structure delivers tangible improvements in performance.

Several organizations have successfully restructured their operations to achieve remarkable outcomes. For example, Procter & Gamble (P&G) adopted a matrix structure to improve collaboration between its functional and geographic divisions. This change enabled P&G to innovate more effectively and respond to global market trends. Similarly, Google's parent company, Alphabet, implemented a holding company structure to provide greater autonomy to its various business units. This restructuring allowed Alphabet to pursue diverse ventures, such as self-driving cars and healthcare technologies, while maintaining focus on its core business.

Conclusion. The organizational structure of an enterprise plays a pivotal role in its ability to achieve strategic objectives, adapt to changing environments, and maintain a competitive edge. By embracing modern theories of organizational design, leveraging technological advancements, and adopting best practices, enterprises can create structures that promote efficiency, innovation, and sustainability. While the process of restructuring poses challenges, the long-term benefits far outweigh the risks, positioning organizations for success in an increasingly complex and dynamic global economy.

References:

1. Burton, R. M., Obel, B., & Håkonsson, D. D. (2020). Organizational design: A step-by-step approach. *Journal of Organizational Behavior*, 41(3), 265–283. <https://doi.org/10.1002/job.2443>
2. Foss, N. J., & Saebi, T. (2017). Fifteen years of research on business model innovation: How far have we come, and where should we go? *Journal of Management*, 43(1), 200–227. <https://doi.org/10.1177/0149206316675927>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

3. Galbraith, J. R. (2014). Designing organizations: Strategy, structure, and process at the business unit and enterprise levels. *Academy of Management Perspectives*, 28(2), 142–160. <https://doi.org/10.5465/amp.2014.0053>
4. Jacobides, M. G., Cennamo, C., & Gawer, A. (2018). Towards a theory of ecosystems. *Strategic Management Journal*, 39(8), 2255–2276. <https://doi.org/10.1002/smj.2904>
5. Keller, S., & Meaney, M. (2017). Leading organizational transformations. *McKinsey Quarterly*, 53(2), 45–61. Retrieved from <https://www.mckinsey.com>
6. Lee, J., & Edmondson, A. C. (2017). Self-managing organizations: Exploring the limits of less-hierarchical organizing. *Research in Organizational Behavior*, 37, 35–58. <https://doi.org/10.1016/j.riob.2017.10.002>
7. Worley, C. G., & Mohrman, S. A. (2014). Is change management obsolete? *Organizational Dynamics*, 43(3), 214–221. <https://doi.org/10.1016/j.orgdyn.2014.07.007>

C M R T

ISSUES OF USING ARTIFICIAL INTELLIGENCE IN IMPROVING STUDENTS'
LEGAL CULTURE

TALABALAR HUQUQIY MADANIYATINI OSHIRISHDA SUN'IY
INTELLEKTDAN FOYDALANISH MASALALARI

ВОПРОСЫ ИСПОЛЬЗОВАНИЯ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА В
ПОВЫШЕНИИ ПРАВОВОЙ КУЛЬТУРЫ СТУДЕНТОВ

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Annotatsiya: Mazkur maqolada talabalar huquqiy madaniyatini oshirishda sun'iy intellektdan foydalanish masalalari tahlil qilinadi. Sun'iy intellekt texnologiyalarining huquqiy ta'limdagi o'rni, afzalliklari, amaliy qo'llanilishi va dolzarb muammolarni bartaraf etish bo'yicha takliflar keltirilgan. Talabalar orasida huquqiy savodxonlikni rivojlantirish uchun sun'iy intellekt asosida yaratilgan interaktiv platformalar, avtomatlashtirilgan maslahat tizimlari va virtual yordamchilardan foydalanish imkoniyatlari yoritilgan. Shuningdek, ushbu jarayonda duch kelinadigan muammolarni hal etish bo'yicha takliflar taqdim etiladi.

Kalit so'zlar: huquqiy madaniyat, talabalar, sun'iy intellekt, huquqiy ta'lim, texnologiyalar, interaktiv platformalar, virtual yordamchi, avtomatlashtirilgan maslahatlar.

Abstract: This article analyzes the issues of using artificial intelligence to improve students' legal culture. The role of artificial intelligence technologies in legal education, their advantages, practical application and proposals for solving current problems are presented. The possibilities of using interactive platforms, automated consulting systems and virtual assistants based on artificial intelligence to develop legal literacy among students are highlighted. Also, proposals are presented for solving problems encountered in this process.

Keywords: legal culture, students, artificial intelligence, legal education, technologies, interactive platforms, virtual assistant, automated advice.

Абстрактный: В данной статье анализируются вопросы использования искусственного интеллекта в повышении правовой культуры студентов. Представлены роль технологий искусственного интеллекта в юридическом образовании, преимущества, практическое применение и решения актуальных проблем. Освещены возможности использования интерактивных платформ на базе искусственного интеллекта, автоматизированных консультационных систем и виртуальных помощников для развития правовой грамотности студентов. Также представлены предложения по решению проблем, возникающих в этом процессе.

Ключевые слова: правовая культура, студенты, искусственный интеллект, юридическое образование, технологии, интерактивные платформы, виртуальный помощник, автоматизированные консультации.

Talabalar huquqiy madaniyatini oshirishda sun'iy intellektdan foydalanish masalalari bugungi kunning dolzarb masalalaridan biridir. Bugungi globallashuv davrida huquqiy madaniyatni rivojlantirish har bir jamiyat uchun muhim vazifalardan biridir. Ayniqsa, talabalar

orasida huquqiy savodxonlik va madaniyatni oshirish dolzarb ahamiyat kasb etadi. Sun'iy intellekt (SI) texnologiyalari ushbu sohada samaradorlikni oshirishda yangi imkoniyatlar ochib bermoqda. Ushbu maqolada talabalar huquqiy madaniyatini shakllantirish va rivojlantirishda sun'iy intellektning ahamiyati, afzalliklari hamda amaliy tatbiqlari haqida so'z yuritiladi. Huquqiy madaniyat – bu huquqni bilish, unga hurmat bilan qarash va uni amalda qo'llay olish qobiliyatini o'z ichiga oladi. Talabalar yosh avlod vakillari sifatida jamiyatda yetakchi o'rin egallashi sababli ularning huquqiy madaniyati yuksak darajada bo'lishi jamiyat barqarorligi va rivoji uchun muhim omil hisoblanadi. Shu sababli, zamonaviy texnologiyalar, xususan, sun'iy intellektni huquqiy ta'limga integratsiya qilish katta ahamiyatga ega.

Sun'iy intellektning imkoniyatlari juda ham keng. Sun'iy intellekt texnologiyalari ta'lim va huquqiy targ'ibotda bir qancha afzalliklarni taqdim etadi. Interaktiv ta'lim platformalari SI asosida yaratilgan o'quv platformalari talabalar uchun huquqiy bilimlarni oson va qiziqarli shaklda o'rganish imkonini beradi. Masalan, virtual huquqiy simulyatsiyalar yoki o'yinlar orqali talabalar real hayotdagi huquqiy vaziyatlarni o'rganishlari mumkin. Individual yondashuvda SI yordamida talabalar bilim darajasiga moslashtirilgan darslar va materiallarni olishlari mumkin. Bu ularga bilimlarni chuqurroq o'zlashtirishga yordam beradi. Avtomatlashtirilgan huquqiy maslahatlar: SI dasturlari talabalarni huquqiy masalalarda, masalan, shartnomalar tuzish yoki mehnat qonunchiligi bo'yicha yo'l-yo'riq bilan ta'minlashi mumkin. Qidiruv tizimlarida talabalar huquqiy me'yorlarni, qonun va hujjatlarni tezda topish uchun SI asosidagi qidiruv tizimlaridan foydalanishlari mumkin.

Amaliyotda qo'llanilishi

1. Virtual yordamchilar: Talabalar SI asosida ishlovchi virtual yordamchilar orqali huquqiy savollarga javob olishlari mumkin. Masalan, huquqiy bilimlarni targ'ib etuvchi "chatbotlar" foydalanuvchilarga huquqiy maslahatlar berishda xizmat qiladi.

2. Ma'lumotlar tahlili: Talabalar orasidagi huquqiy savodxonlik darajasini baholashda sun'iy intellekt vositalaridan foydalanish mumkin. Ma'lumotlarni tahlil qilish orqali talabalar qanday mavzular bo'yicha qiyinchiliklarga duch kelayotganini aniqlash mumkin. Sun'iy intellekt talabalar ishtirokini baholashda adolatli va aniq tizimni ta'minlaydi. Talabalarning javoblari va faolligi asosida ularga ball yoki rag'batlantiruvchi reytinglar taqdim etiladi. SI asosida avtomatlashtirilgan tizimlar baholash jarayonini soddalashtiradi. Seminar davomida SI talabalar tomonidan berilgan javoblar va fikrlarni tahlil qilib, ularning qayerda qiyinchiliklarga duch kelayotganini aniqlaydi. Seminar natijalarini umumlashtirib, kelgusi mashg'ulotlar uchun moslashuvchan reja ishlab chiqadi.

3. Sun'iy intellekt (SI) texnologiyalari huquqiy interaktiv seminarlarni tashkil etishda yangi imkoniyatlar yaratmoqda. Bu texnologiyalar huquqiy bilimlarni yanada samarali va qiziqarli shaklda o'zlashtirish, auditoriya bilan faol muloqot o'rnatish hamda ma'lumotni individuallashtirilgan usulda taqdim etishga xizmat qiladi. Interaktiv seminarlar va treninglar: Sun'iy intellekt yordamida tashkil etilgan virtual seminarlar orqali talabalar real vaqt rejimida o'z bilimlarini mustahkamlash imkoniga ega bo'ladilar. SI asosida yaratilgan simulyatsiyalar talabalarni real hayotdagi huquqiy muammolarni hal qilish jarayoniga jalb qiladi. Masalan: Talabalar virtual sud jarayonlarida qatnashib, sudya, advokat yoki ayblanuvchi rolda bo'lishlari mumkin. Turli huquqiy vaziyatlarda qaror qabul qilish orqali qonunchilikni o'rganadilar. SI asosida ishlaydigan virtual yordamchilar seminar davomida talabalarning savollariga real vaqt rejimida javob beradi. Huquqiy atamalarni tushuntiradi yoki tegishli qonunchilikka havolalar

beradi. Bu yordamchilar talabalar o'zlashtirish darajasini oshirishda katta ahamiyat kasb etadi. Sun'iy intellekt huquqiy interaktiv seminarlarni yanada samarali, qiziqarli va talabalarga moslashtirilgan holda o'tkazishga imkon beradi. U talabalarni huquqiy jarayonlarga jalb qilib, ularda nafaqat nazariy bilimlarni, balki amaliy ko'nikmalarni ham shakllantiradi. Shu boisdan, SI texnologiyalarini seminarlar jarayoniga joriy etish ta'lim jarayonini takomillashtirishning muhim qismi hisoblanadi.

Sun'iy intellektdan foydalanishda muammolar va ularni bartaraf etishning bir qancha usullari mavjud. Texnik qiyinchiliklar: SI texnologiyalarini joriy etish uchun maxsus texnik infratuzilma va mablag' talab etiladi. Bu masala davlat va nodavlat tashkilotlar hamkorligi orqali hal etilishi mumkin. Huquqiy savodxonlikning etarli emasligida talabalar uchun texnologiyalarni tushuntiruvchi qo'llanmalar va treninglarni tashkil etish muhim. Shaxsiy ma'lumotlarning himoya qilish uchun SI platformalaridan foydalanishda talabalar ma'lumotlarini himoya qilish uchun xavfsizlik choralarini kuchaytirish lozim.

Ushbu sun'iy intellekt rivojlanib turgan vaqtda quyidagilarni takliflar qilish mumkun:

1. Sun'iy intellekt texnologiyalarini huquqiy ta'limga integratsiya qilish bo'yicha milliy dasturlarni ishlab chiqish.
2. Talabalar uchun bepul SI asosidagi huquqiy resurslar yaratish.
3. Texnologik va huquqiy bilimlarni birlashtiruvchi maxsus kurslarni taqdim etish.

Huquqiy madaniyatga ega yoshlar jamiyat barqarorligining asosiy poydevoridir. Shu boisdan, sun'iy intellektdan samarali foydalanish ushbu jarayonda muhim vosita bo'lib xizmat qiladi. Talabalar huquqiy madaniyatini oshirish jarayonida sun'iy intellektni (SI) samarali qo'llashning eng dolzarb masalasi – talabalarning ehtiyojlariga mos va individual yondashuvni ta'minlaydigan, qamrovli va xavfsiz texnologik echimlarni ishlab chiqishdir. Quyida bu dolzarb masalaning asosiy jihatlari ko'rishimiz mumkin. Talabalar ehtiyojlariga mos platformalar yaratishda sun'iy intellektning asosiy vazifasi talabalarning bilim darajasi, qiziqishlari va huquqiy savodxonligini oshirishga moslashtirilgan tizimlarni ishlab chiqishdir. Ammo quyidagi muammolar mavjud: Standart yondashuvlarning chegaralanganligi: Ko'pgina platformalar talabalar ehtiyojlariga moslashuvchan emas, o'quv materiallari ham barcha uchun bir xil tarzda taqdim etiladi. Moslashtirishning murakkabligi: Har bir talabaga individual tarzda moslashtirilgan huquqiy ta'lim tizimini yaratish katta texnologik resurslarni talab qiladi. Talabalar uchun sun'iy intellekt asosida ishlaydigan huquqiy ta'lim tizimlarini joriy qilish katta mablag' va zamonaviy infratuzilmani talab qiladi. Ko'plab ta'lim muassasalarida sun'iy intellektni joriy qilish uchun yetarli moliyaviy resurslar yo'q. Texnik jihozlar va internet infratuzilmasining yetarli darajada rivojlanmaganligi SI imkoniyatlaridan to'liq foydalanishga to'sqinlik qiladi. Sun'iy intellekt yordamida o'rganilgan nazariy huquqiy bilimlarni real hayotdagi huquqiy muammolarni hal qilishga moslashtirish dolzarb masaladir. Talabalar huquqiy bilimlarni o'rganish bilan cheklanib qolmasdan, uni amalda qo'llash ko'nikmalarini rivojlantirishi zarur. Sun'iy intellekt asosida real hayotga yaqin vaziyatlar va ish stsenariylarini yaratish qiyinchilik tug'diradi. Sun'iy intellekt tizimlari noto'g'ri axborot yoki eskirgan qonunchilikka asoslanishi mumkin: Qonunlar tez-tez o'zgaradi va tizimlar doimiy ravishda yangilanishi kerak. Noto'g'ri ma'lumot berilishi talabalarni chalkashtirishi yoki noto'g'ri qaror qabul qilishlariga sabab bo'lishi mumkin.

Yechim va takliflar

1. Moslashtirilgan tizimlar yaratish: Talabalar ehtiyojlariga mos, moslashuvchan va intuitiv o'quv platformalar ishlab chiqish.

2. Xavfsizlikni ta'minlash: Talabalar ma'lumotlarini himoya qilish uchun ilg'or shifrlash texnologiyalarini joriy etish.

3. Moliyaviy qo'llab-quvvatlash: Sun'iy intellektni joriy qilish uchun davlat va xususiy sektorlar tomonidan mablag' ajratilishini ta'minlash.

4. Doimiy yangilanishlar: Tizimlarning qonunchilikka mos holda doimiy ravishda yangilanib turishi.

5. Amaliyotga yo'naltirish: Talabalarga huquqiy bilimlarni real hayotda qo'llash imkonini beradigan interaktiv simulyatsiyalarni ko'proq ishlab chiqish.

Xulosa: Sun'iy intellekt texnologiyalari talabalar orasida huquqiy madaniyatni oshirishda katta yordam berishi mumkin. Ushbu texnologiyalar orqali huquqiy ta'lim samaradorligi oshib, talabalar huquqiy bilimlarni amalda qo'llashni o'rganadilar. Shu bilan birga, SI vositalaridan foydalanishda yuzaga kelishi mumkin bo'lgan muammolarni oldini olish uchun kompleks yondashuv zarur. Bu nafaqat ta'lim jarayonini innovatsionlashtirishga, balki huquqiy ong va mas'uliyatni oshirishga xizmat qiladi. Sun'iy intellektning huquqiy madaniyatni oshirishdagi dolzarb masalasi – bu nafaqat texnologik, balki huquqiy va ma'rifiy jarayonlarni mukammallashtirishga qaratilgan kompleks yondashuvni talab qiluvchi sohadir. Ushbu masalalarni hal etish orqali talabalar nafaqat bilimlarni o'zlashtiradi, balki huquqiy mas'uliyatni his qiladigan, jamiyatga foydali fuqarolar sifatida shakllanadi.

Foydalanilgan adabiyotlar

1. O'zbekiston Respublikasi Prezidentining 2020-yil 29-apreldagi "Yoshlarning huquqiy ongi va huquqiy madaniyatini oshirishga oid chora-tadbirlar to'g'risida"gi qarori.
2. Bunyodov N. "Raqamli texnologiyalar va ta'lim innovatsiyalari". Toshkent: O'zbekiston, 2022.
3. Sun'iy intellekt texnologiyalarining ta'limdagi ahamiyati haqida internet manbalari: www.edtechmagazine.com
4. Smith, J., & Jones, R. "Artificial Intelligence in Legal Education: Opportunities and Challenges". International Journal of Legal Studies, 2021.
5. UNESCO. "Artificial Intelligence in Education: Challenges and Opportunities". Paris: UNESCO Publishing, 2020.
6. Xo'jaev A. "Huquqiy madaniyat: nazariya va amaliyot". Toshkent: Adolat nashriyoti, 2018.

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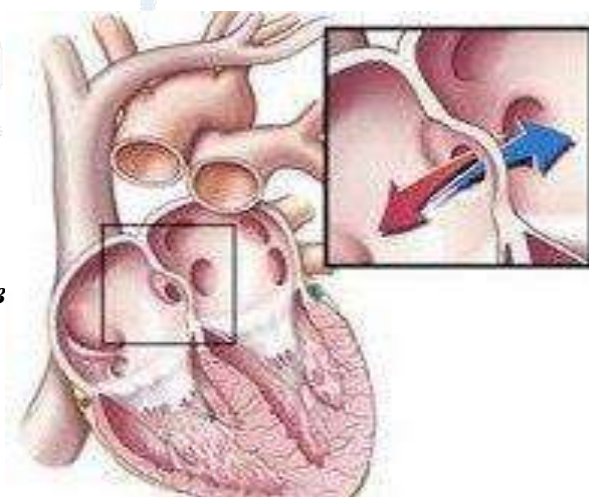
Науч.рук: А.Э.Кубаев

Аннотация: Данная статья освещает тему пороков развития сердца в эмбриональном периоде и их проявления в неонатальном периоде, информируя о симптомах, причинах и методах лечения.

Ключевые слова: анатомических дефектов сердца, ЭКГ, ФКГ, рентгенография, ЭхоКГ, катетеризация сердца, врожденных пороков сердца.

Врожденные пороки сердца это – группа заболеваний, объединенных наличием анатомических дефектов сердца, его клапанного аппарата или сосудов, возникших во внутриутробном периоде, приводящих к изменению внутрисердечной и системной гемодинамики. Проявления врожденного порока сердца зависят от его вида; к наиболее характерным симптомам относятся бледность или синюшность кожных покровов, шумы в сердце, отставание в физическом развитии, признаки дыхательной и сердечной недостаточности. При подозрении на врожденный порок сердца выполняется ЭКГ, ФКГ, рентгенография, ЭхоКГ, катетеризация сердца и аортография, кардиография, МРТ сердца и т. д. Чаще всего при врожденных пороках сердца прибегают к кардиохирургической операции – оперативной коррекции выявленной аномалии.

Причины врожденных пороков сердца



Этиология

врожденных пороков сердца может быть обусловлена хромосомными нарушениями (5%), генной мутацией (2-3%), влиянием факторов среды (1-2%), полигенно-мультифакториальной предрасположенностью (90%).

Различного рода хромосомные aberrации приводят к количественным и структурным изменениям хромосом. При хромосомных перестройках отмечаются множественные полисистемные аномалии развития, включая врожденные пороки сердца. В случае трисомии аутосом наиболее частыми пороками сердца оказываются дефекты межпредсердной или межжелудочковой перегородок, а также их сочетание; при аномалиях половых хромосом врожденные пороки сердца встречаются реже и представлены, главным образом, коарктацией аорты или дефектом межжелудочковой перегородки.

Врожденные пороки сердца, обусловленные мутациями единичных генов, также в большинстве случаев сочетаются с аномалиями других внутренних органов. В этих случаях сердечные пороки являются частью аутосомно-доминантных (синдромы Марфана, Холта-Орама, Крузона, Нунана и др.), аутосомно-рецессивных синдромов (синдром Картагенера, Карпентера, Робертса, Гурлер и др.) или синдромов, сцепленных с X-хромосомой (синдромы Гольтца, Аазе, Гун-тера и др.).

Среди повреждающих факторов внешней среды к развитию врожденных пороков сердца приводят вирусные заболевания беременной, ионизирующая радиация, некоторые лекарственные препараты, пагубные привычки матери, производственные вредности. Критическим периодом неблагоприятного воздействия на плод являются первые 3 месяца беременности, когда происходит фетальный органогенез.

Внутриутробное поражение плода вирусом краснухи наиболее часто вызывает триаду аномалий – глаукому или катаракту, глухоту, врожденные пороки сердца (тетраду Фалло, транспозицию магистральных сосудов, открытый артериальный проток, общий артериальный ствол, клапанные пороки, стеноз легочной артерии, ДМЖП и др.). Также обычно имеют место микроцефалия, нарушение развития костей черепа и скелета, отставание в умственном и физическом развитии.

Кроме краснухи беременной, опасность для плода в плане развития врожденных пороков сердца представляют ветряная оспа, простой герпес, аденовирусные инфекции, сывороточный гепатит, цитомегалия, микоплазмоз, токсоплазмоз, листериоз, сифилис, туберкулез и др.

В структуру эмбриофетального алкогольного синдрома обычно входят дефекты

межжелудочковой и межпредсердной перегородки, открытый артериальный проток. Доказано, что тератогенное действие на сердечно-сосудистую систему плода оказывает прием амфетаминов, приводящий к транспозиции магистральных сосудов и ДМЖП; противосудорожных средств, обуславливающих развитие стеноза аорты и легочной артерии, коарктации аорты, открытого артериального протока, тетрады Фалло, гипоплазии левых отделов сердца; препаратов лития, приводящих к атрезии трехстворчатого клапана, аномалии Эбштейна, ДМПП; прогестагенов, вызывающих тетраду Фалло, другие сложные врожденные пороки сердца.

У женщин, страдающих преддиабетом или диабетом, дети с врожденными пороками сердца рождаются чаще, чем у здоровых матерей. В этом случае у плода обычно формируются ДМЖП или транспозиция крупных сосудов. Вероятность рождения ребенка с врожденным пороком сердца у женщины с ревматизмом составляет 25 %.

Кроме непосредственных причин, выделяют факторы риска формирования аномалий сердца у плода. К ним относят возраст беременной младше 15-17 лет и старше 40 лет, токсикозы I триместра, угрозу самопроизвольного прерывания беременности, эндокринные нарушения у матери, случаи мертворождения в анамнезе, наличие в семье других детей и близких родственников с врожденными пороками сердца.

Симптомы врожденных пороков сердца

Клинические проявления и течение врожденных пороков сердца определяется видом аномалии, характером нарушений гемодинамики и сроками развития декомпенсации кровообращения.

У новорожденных с цианотическими врожденными пороками сердца отмечается цианоз (синюшность) кожных покровов и слизистых оболочек. Синюшность усиливается при малейшем напряжении: сосании, плаче ребенка. Белые пороки сердца проявляются побледнением кожи, похолоданием конечностей.

Дети с врожденными пороками сердца обычно беспокойные, отказываются от груди, быстро устают в процессе кормления. У них появляется потливость, тахикардия, аритмии, одышка, набухание и пульсация сосудов шеи. При хроническом нарушении кровообращения дети отстают в прибавлении веса, росте и физическом развитии. При врожденных пороках сердца обычно сразу после рождения выслушиваются сердечные

шумы. В дальнейшем обнаруживаются признаки сердечной недостаточности (отеки, кардиомегалия, кардиогенная гипотрофия, гепатомегалия и др.).

Осложнениями врожденных пороков сердца могут стать бактериальный эндокардит, полицитемия, тромбозы периферических сосудов и тромбоэмболии сосудов головного мозга, застойные пневмонии, синкопальные состояния, одышечно-цианотические приступы, стенокардитический синдром или инфаркт миокарда.

Прогноз и профилактика врожденных пороков сердца

В структуре смертности новорожденных врожденные пороки сердца занимают первое место. Без оказания квалифицированной кардиохирургической помощи в течение первого года жизни погибает 50-75% детей. В периоде компенсации (2-3 года) смертность снижается до 5%. Ранее выявление и коррекция врожденного порока сердца позволяет существенно улучшить прогноз.

Профилактика врожденных пороков сердца требует тщательного планирования беременности, исключения воздействия неблагоприятных факторов на плод, проведения медико-генетического консультирования и разъяснительной работы среди женщин групп риска по рождению детей с сердечной патологией, решения вопроса о пренатальной диагностике порока (УЗИ, биопсия хориона, амниоцентез) и показаниях к прерыванию беременности. Ведение беременности у женщин с врожденными пороками сердца требует повышенного внимания со стороны акушера-гинеколога и кардиолога.

Лечение врожденных пороков сердца

Наиболее сложной проблемой в детской кардиологии является хирургическое лечение врожденных пороков сердца у детей первого года жизни. Большинство операций в раннем детском возрасте выполняется по поводу цианотических врожденных пороков сердца. При отсутствии у новорожденного признаков сердечной недостаточности, умеренной выраженности цианоза операция может быть отложена. Наблюдение за детьми с врожденными пороками сердца осуществляют кардиолог и кардиохирург.

Специфическое лечение в каждом конкретном случае зависит от разновидности и степени тяжести врожденного порока сердца. Операции при врожденных дефектах перегородок сердца (ДМЖП, ДМПП) могут включать пластику или ушивание

перегородки, рентгенэндоваскулярную окклюзию дефекта. При наличии выраженной гипоксемии детям с врожденными пороками сердца первым этапом выполняется паллиативное вмешательство, предполагающее наложение различного рода межсистемных анастомозов. Подобная тактика улучшает оксигенацию крови, уменьшает риск осложнений, позволяет провести радикальную коррекцию в более благоприятных условиях. При аортальных пороках выполняется резекция или баллонная дилатация коарктации аорты, пластика аортального стеноза и др. При ОАП производится его перевязка. Лечение стеноза легочной артерии заключается в проведении открытой или эндоваскулярной альвулопластики и т. д.

Анатомически сложные врожденные пороки сердца, при которых радикальная операция не представляется возможной, требуют выполнения гемодинамической коррекции, т. е. разделения артериального и венозного потоков крови без устранения анатомического дефекта. В этих случаях могут проводиться операции Фонтена, Сеннинга, Мастарда и др. Серьезные пороки, не поддающиеся оперативному лечению, требуют проведения пересадки сердца.

Консервативное лечение врожденных пороков сердца может включать в себя симптоматическую терапию одышечно-цианотических приступов, острой левожелудочковой недостаточности (сердечной астмы, отека легких), хронической сердечной недостаточности, ишемии миокарда, аритмий.

Результат: Хирургическое вмешательство: Для более серьезных пороков часто требуется операция. Современные хирургические методы демонстрируют высокую эффективность, обеспечивая хорошую выживаемость и улучшение качества жизни. Более 90% детей, перенесших хирургическое лечение, достигают взрослого возраста.

Таким образом, ранняя диагностика и адекватное лечение играют ключевую роль в достижении успешных результатов.

Вывод: Выводы исследования показывают, что ранняя диагностика и своевременное лечение ВПС жизненно важны для улучшения прогноза. Основными методами диагностики являются анамнез, физикальный осмотр, пульсоксиметрия, ЭКГ и эхокардиография. ВПС могут требовать хирургического вмешательства или консервативного лечения в зависимости от их сложности.

Данное состояние требует мультидисциплинарного подхода, включая кардиологов, хирургов и специалистов по реабилитации, что позволяет обеспечить комплексную помощь пациентам и повысить их качество жизни. Ранняя диагностика и современные методы лечения позволяют значительно улучшить исходы для большинства пациентов с ВПС.

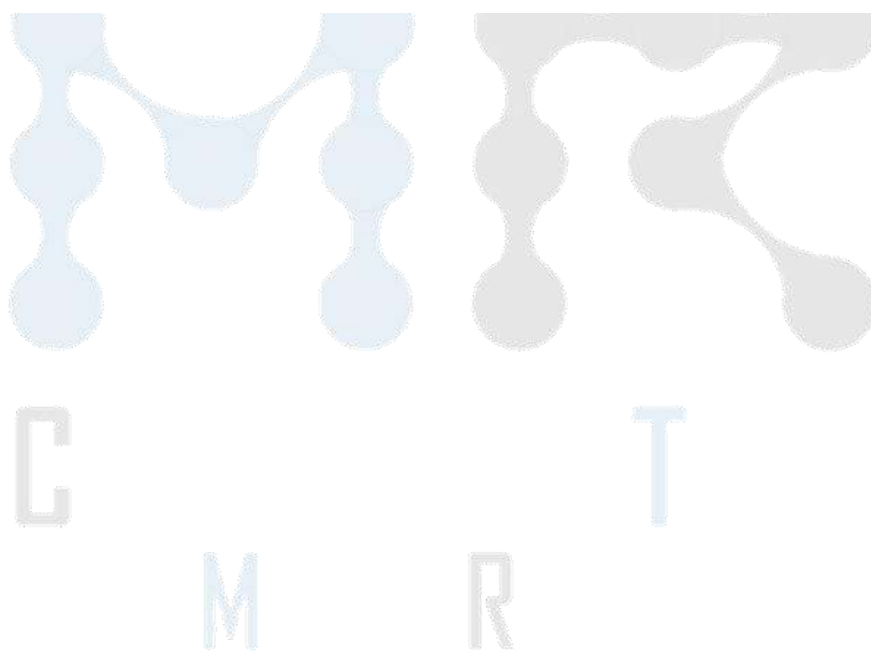
Исползованая литература.

1. Зиньковский М.Ф. Врожденные пороки сердца/Под ред. А.Ф. Возианова. — К.: Книга плюс, 2008. — 1168 с.: ил.
2. Амосов Н.М., Кнышов Г.Н., Ситар Л.Л. и др. Протезирование клапанов в хирургическом лечении приобретённых пороков сердца // Кардиология. - 1981. - № 11 - С. 12-17.
3. Бакулев А.Н., Дамир Е.А. Показания к операции у больных МС // Тер. арх. - 1955. - № 4 - С. 29-37.
4. Беленков Ю.Н., Мареев В.Ю., Агеев Ф.Т. Хроническая сердечная недостаточность. - М.: ГЭОТАР-Медиа, 2006. - 424 с.
5. Бендет Я.А., Атаманюк М.Ю., Верич Н.М. и др. Вопросы реабилитации больных с протезами клапанов сердца // Кардиология. - 1981. - № 11. - С. 37-43.
6. Бочкова Д.Н., Разина Т.Ю., Соболев Ю.С., Десятниченко В.М. Распространённость пролапса митрального клапана среди населения Москвы // Кардиология. - 1983. - № 8. - С. 40-43.
7. Kubaev A. TIBBIYOTDA MATEMATIK MODELASHTIRISH VA NANOTEKNOLOGIYALAR //Евразийский журнал математической теории и компьютерных наук. – 2023. – Т. 3. – №. 9. – С. 17-26.
8. Esirgapovich K. A. RULES OF USING MATHEMATICAL MODELING IN THE FIELD OF MEDICINE //ENG YAXSHI XIZMATLARI UCHUN. – 2023. – Т. 1. – №. 6. – С. 582-584.
9. Esirgapovich K. A. MODELING BASED ON DIFFERENTIAL EQUATIONS //TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI. – 2023. – Т. 3. – №. 11. – С. 72-75.
10. Ulug'bekovna M. S. et al. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE.
11. Khozhievich B. E. et al. STUDY OF CARDIOVASCULAR SYSTEM REGULATION MECHANISMS //JOURNAL OF THEORY, MATHEMATICS AND PHYSICS. – 2023. – Т. 2. – №. 11. – С. 1-13.

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12. Khozhievich B. E. et al. STUDY OF CARDIOVASCULAR SYSTEM REGULATION MECHANISMS //JOURNAL OF THEORY, MATHEMATICS AND PHYSICS. – 2023. – Т. 2. – №. 11. – С. 1-13.
13. Khojievich B. E. et al. MATHEMATICAL MODELING IN MEDICINE. ADVANTAGES AND DISADVANTAGES OF THE MAIN METHODS OF MODELING //JOURNAL OF SCIENCE, RESEARCH AND TEACHING. – 2023. – Т. 2. – №. 11. – С. 1-11.
14. Буткевич О.М., Виноградова Т.Л. Инфекционный эндокардит. - М.: СтарКо, 1997. - 94 с.
15. Василенко В.Х., Фельдман С.Б., Могилевский Э.Б. Пороки сердца. - Ташкент: Медицина, 1983. - 366 с.
16. Виноградов А.В. Дифференциальный диагноз внутренних болезней. - М.: Медицина, 1987.
17. Горбаченков А.А., Поздняков Ю.М. Клапанные пороки сердца. - М.: ГЭОТАР-Медиа, 2007.



ГЕНЕЗИС И ЭВОЛЮЦИЯ РАЗВИТИЯ
ДЖАДИДСКОГО ДВИЖЕНИЯ В УЗБЕКИСТАНЕ

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Аннотация: В данной статье проанализированы зарождение и основные этапы развития джадидского движения в Узбекистане, раскрыты их идеи и практическая деятельность.

Ключевые слова: джадидизм, идея, движение, новометодная школа, Туркестанская автономия, социально-политические задачи, традиции, обычаи.

В конце XIX века в Туркестанском обществе начала зарождаться новая сила, представленная местными прогрессивными интеллигентами, объединенными в движение под названием джадидизм (от араб. «джадид» – «новый»). Она сыграла чрезвычайно важную роль в общественно-политической жизни узбекского народа.

Подтверждением этому служат слова Президента Республики Узбекистан Ш.М.Мирзиёева, произнесенные на открытии международной конференции о джадидах в 2023 году: «Все мы знаем, что джадиды, выступившие с благородной идеей «Единство в языке, мыслях, действиях», считали, что пробуждение народов и их освобождение от оков отсталости и невежества возможно лишь путем распространения знаний и просвещения, светского развития».

По своей сути, джадидизм выполнял роль идеологии национально-освободительного движения, основные идеи и цели которого заключались в:

освобождении Туркестана от феодальной отсталости и средневековых предрассудков;

выходе на прогрессивный путь развития;

создании национального государства и свободного общества на основе конституционного правления;

придании тюркским языкам статуса государственного языка;

создании национальной валюты и гвардии.

Основоположником и идеологом джадидского движения считается видный крымско-татарский реформист Исмаил Гаспринский (1851-1914 гг.).

В начале своей деятельности узбекские джадиды сосредоточили основное внимание на реализации религиозно-реформаторских и просветительских идей. В их теоретических произведениях мы видим призыв к восстановлению былого могущества мусульманских народов через упрощение традиционных обрядов и освобождение от всего наносного и фанатичного. Они предлагали пересмотреть традиционную общественно-философскую систему не только с позиций развития культуры, науки и образования, но и в свете задач антиколониальной борьбы.

В целях реформирования системы образования джадиды начали создавать собственные национальные школы, обучение в которых было основано на новых методах – «джадиди-ушул». Эти школы должны были стать средством защиты национальной культуры, ислама, традиций и обычаев. Так, 1898 году в городах Коканд и Токмак были открыты первые новометодные школы, в которых наряду с религиозными дисциплинами преподавались такие предметы, как арифметика, география, основы естествознания.

С 1900 года сеть школ постепенно начала расширяться и крупными центрами джадидских школ становятся Ташкент, Самарканд и Коканд.

В новометодных школах формировалась новая просвещенная интеллигенция, представленная такими выдающимися философами, писателями и педагогами, как Абдурауф Фитрат, Садриддин Айни, Абдулла Авлони, Муминжан Мухаммаджан-оглы, Файзулла Ходжаев и другими.

В начале XX века в Туркестане возникли первые джадидские группы. Наиболее видными их представителями стали люди, составившие костяк национальной интеллигенции: Махмудходжа Бехбуди, Мунаввар кары, Абдулла Авлони, Убайдулла Ходжаев, Абдурауф Фитрат, Тошпулат Норбутабеков, Исмаил Обидов и др.

В 1905-1914 гг. движение джадидов получает более широкое распространение, характеризующееся началом организации издательской деятельности, особое внимание придается вопросам науки, литературы, культуры и просвещения.

Первой национальной газетой туркестанских джадидов явилась газета «Тараккий», изданная 27 июня 1906 года. Позже вышли в свет газеты «Хуршид» (1906 г.), «Шухрат», «Туджор» (1907-1908 гг.) и др. Среди журналов следует отметить такие, как «Осиё», «Самарканд», «Садои Туркистон», «Садои Фаргона», «Ойна», «Турон» и т.д. Несмотря на то,

что большинство из них просуществовали недолго, тем не менее они сыграли важную роль в распространении реформаторской мысли.

Одновременно с этим крепили и развивались международные связи джаидов со своими единомышленниками в России, Турции, Египте и других странах посредством поездок и бесед.

15 августа 1905 года ученикам И.Гаспринского удалось создать партию «Союз мусульман» (Иттифак аль-Муслимин), первый конгресс которых прошел в Нижнем Новгороде на пароходе «Густав Струве» и включал 150 делегатов из Крыма, Закавказья, Урала, Туркестана и Сибири. Данная партия была представлена также в Российской Государственной Думе.

В 1914-1917 гг. в Узбекистане создаются джаидские политические партии и джаидизм превращается в общественно-политическое движение.

Одновременно с этим в 1914-1915 гг., после возвращения в Туркестан молодых людей, получивших образование в России и Турции, в рядах джаидов возникают первые серьезные разногласия. Молодое поколение джаидов вступило в спор со старшими деятелями по вопросу целей и методов борьбы. Их не удовлетворяло узкое культурничество, они выдвинули политические задачи, потребовали снижения налогов, облегчения участи дехканства, ограничения чиновничьего и судейского произвола, обрушились с резкой критикой на эмира и духовенство. Лидерами этой молодежи стали Абдурауф Фитрат и Файзулла Ходжаев, вставшие в марте 1917 года во главе партии младобухарцев – революционных джаидов. В это же время оформляется и «правое крыло» джаидского движения – «Шурои Исломия».

Таким образом, после февральской революции 1917 года внутри джаидского движения происходит окончательный раскол, одни джаиды требовали полного отделения от России, другие видели свою задачу в создании «национально-территориальной автономии» в составе Российской Федерации, третьи ограничивались требованием осуществления гарантий прав на духовно-религиозную автономию в составе России.

В октябре 1917-1918 гг. часть джаидов, настроенные на отделение от России, создают в Коканде Туркестанскую автономию, которая с применением военной силы была ликвидирована Советской властью.

Другая часть джаидов в 1918-1924 гг. создает группу «Чигатайская беседа», осуществлявшей просветительно-издательскую деятельность в составе советской системы.

После разделения в 1924 году Туркестана на пять республик, дальнейшее развитие джадидского движения осуществлялось в рамках национальных республик и автономий. Тем не менее джадиды не прекращали деятельность по реализации идей группы «Чигатайская беседа» в культурно-просветительской, образовательной и издательской сферах, а также попыток оживить национально-освободительное движение.

Подобные действия были отрицательно восприняты Советской властью и в период с 1931 по 1938 годы, а также в первой половине 1950-х годов представители джадидов были подвергнуты массовым репрессиям.

Находясь сначала под духовным, политическим и экономическим давлением, а затем в условиях тоталитарной идеологии, джадидизм смог реализоваться только частично. Но несмотря на это, в 1953-1990 гг. узбекский народ смог сохранить свою национальную самобытность, традиции, обычаи и национальную память об идеях джадидов.

Обретение Узбекистаном независимости стало новой отправной точкой для реализации идей джадидизма.

В современном Узбекистане почитают и помнят свою древнюю историю и культуру, а также своих великих сынов, внесших огромный вклад в становление и развитие независимого и самобытного узбекского государства.

Достойное место среди них занимают представители джадидского движения, ставшие примером беззаветной любви и преданности своей Родине и своему народу.

«Наши сегодняшние реформы по построению в Новом Узбекистане справедливого, свободного и процветающего общества, благополучной жизни, истинно народного государства, где превыше всего – достоинство человека, его интересы, полностью созвучны благородным идеям и программам джадидов», – сказал Президент Республики Узбекистан Ш.М.Мирзиёев.

Сегодня в их честь в городе Ташкент воздвигнут Мемориальный комплекс, созданы Общественный фонд «Шахидлар хотираси», Государственный музей памяти жертв репрессий и его региональные отделения.

Таким образом, джадиды открыли новую страницу в истории узбекского народа. Их движение своей просветительской деятельностью и направленностью на решение общенациональных задач коренным образом отличалось от традиционного восточного просветительства и религиозного реформаторства.

Истребление джадидов почти на целый век отодвинуло назад признание узбекского народа в мировом масштабе. Тем не менее историческая память узбекского народа

сохранила воспоминания об идеях и целях джадидов, которые нашли свое полное воплощение в обновленном Узбекистане.

Источники:

1. Мирзиеёв Ш.М. Сегодняшние реформы в Новом Узбекистане созвучны благородным идеям джадидов. / Выступление Президента Республики Узбекистана Ш.М.Мирзиеёва на открытии международной конференции о джадидах. 11.12.2023
2. Мирзиеёв Ш.М. Независимость Родины – источник нашей силы и вдохновения, основа благополучия и процветания. / Выступление Президента Республики Узбекистана Ш.М.Мирзиеёва на церемонии посвященной 30- летию Независимости Республики Узбекистан, 2021.
3. Выступление Президента Республики Узбекистана Ш.М. Мирзиеёва на форуме молодёжи Узбекистана 26.12.2020.
4. Абдирашидов, З. Исмаил Гаспринский и Туркестан в начале XX века: связи – отношения – влияния. / З.Абдирашидов. – Т.: Академнашр, 2011.
5. Алихожиев, М.О. Джадидизм в Туркестане и просветительская деятельность джадидов / М.О.Алихожиев, Э.А.Тажимирзаев. – Андижан: Андижанский государственный университет.
6. Агзамходжаев С.С. Реформаторское движение в Туркестане. – URL: http://www.sociosphere.com/publication/conference/2014/241/reformatorskoe_dvizhenie_v_turkestane. Дата обращения: 15.09.2024.

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Annotatsiya

Maqolada o'simlik hujayrasining tuzilishi va uning biologik funksiyalari haqida batafsil ma'lumot berilgan. Unda hujayraning asosiy qismlari, jumladan, hujayra devori, sitoplazma, yadro, vakuola, xloroplastlar, mitoxondriya, endoplazmatik to'r va Golji apparatining tuzilishi va vazifalari yoritilgan. Hujayraning har bir organoidi o'simlikning o'sishi va rivojlanishidagi muhim rolini bajarishi ko'rsatib o'tilgan. Shuningdek, maqolada hujayraning ichki tuzilmalari o'rtasidagi o'zaro bog'liqlik va ularning o'simlik hayotidagi ahamiyati tahlil qilingan.

Аннотация

В статье подробно рассматривается структура растительной клетки и её биологические функции. Описаны основные части клетки, такие как клеточная стенка, цитоплазма, ядро, вакуоль, хлоропласты, митохондрии, эндоплазматическая сеть и аппарат Гольджи, а также их строение и функции. Подчёркнута важная роль каждого органоида в росте и развитии растений. Кроме того, в статье анализируется взаимосвязь внутренних структур клетки и их значение для жизнедеятельности растений.

Abstract.

The article provides a detailed overview of the structure and biological functions of plant cells. It describes the main components of the cell, including the cell wall, cytoplasm, nucleus, vacuole, chloroplasts, mitochondria, endoplasmic reticulum, and Golgi apparatus, along with their structure and functions. The significant role of each organelle in plant growth and development is emphasized. Additionally, the article analyzes the interconnections among the cell's internal structures and their importance in plant life.

Kalit So'zlar: Mitoxondriya, ATF ishlab chiqarish, Oqsil sintezi, Endoplazmatik to'r, Ribosomalar, Nafas olish, Oksidlanish va fosforlanish, Kalsiy ionlari, Ribonuklein kislota (RNK), Apoptoz, Fotosintez, Modda almashinuvi, Golji apparati, Xloroplastlar, Vakuola, Xromatin, Xlorofill, Granulalar.

Ключевые слова: Митохондрия, Производство АТФ, Синтез белка, Эндоплазматическая сеть (ЭПС), Рибосомы, Дыхание, Окислительно-фосфорилирование, Кальциевые ионы, Рибонуклеиновая кислота (РНК), Апоптоз, Фотосинтез, Обмен веществ,

Аппарат Гольджи, Хлоропласты, Вакуоль, Хроматин, Хлорофилл, Гранулярная ЭПС, Агранулярная ЭПС.

Keywords: Mitochondria, ATP production, Protein synthesis, Endoplasmic reticulum (ER), Ribosomes, Respiration, Oxidative phosphorylation, Calcium ions, Ribonucleic acid (RNA), Apoptosis, Photosynthesis, Metabolism, Golgi apparatus, Chloroplasts, Vacuole, Chromatin, Chlorophyll, Granular ER, Agranular ER.

Hujayra devorining tuzilishi va xususiyatlari. Hujayra devori o'simlik hujayrasining tashqi qobig'i bo'lib, u sellulyoza, gemisellyuloza, pektin va lignin kabi moddalar bilan boyitilgan. Bu struktura hujayraga mexanik mustahkamlik beradi, uni tashqi ta'sirlardan himoya qiladi va hujayra shaklini saqlab turadi. Hujayra devori hujayraning hayot sikli davomida doimiy o'zgarishlar qilishi mumkin.

Hujayra devori o'simlik hujayrasiga xos asosiy struktura bo'lib, o'simlik organizmlarining rivojlanishi, o'sishi va ekologik barqarorligini ta'minlashda katta rol o'ynaydi. Hujayra devorining elastikligi o'simliklarga o'sish davomida shaklini o'zgartirish imkonini beradi, lignin esa o'simliklarning tik turishiga yordam beradi.

Hujayra devori o'simliklarning mustahkamligi va ekologik chidamliligi bilan bevosita bog'liq bo'lib, qishloq xo'jaligi va sanoatda muhim ahamiyatga ega.

Hujayra devorining asosiy funksiyalari

Himoya: Mexanik zararlar va mikroorganizmlarning hujayraga kirishini oldini oladi.

Shakl berish: Hujayraning doimiy shaklini ta'minlaydi.

O'tkazuvchanlik: Ionlar va kichik molekulalarning hujayraga kirishi va chiqishini nazorat qiladi.

Mexanik mustahkamlik: O'simlikni tik tutadi va turli muhit sharoitlariga moslashishiga yordam beradi.

Plazmatik membrana — hujayraning ichki qismidagi muhim struktura bo'lib, u hujayra devorining ichki tomonida joylashadi. Ushbu membrana yarim o'tkazuvchan tuzilishga ega va asosan lipidlar (fosfolipidlar), oqsillar hamda uglevodlardan tashkil topgan. Plazmatik membrana suyuq mozaika modeli asosida ishlaydi, ya'ni uning komponentlari harakatlanish imkoniyatiga ega.

Asosiy qismlari:

1. Fosfolipid ikki qavati: Membrananing asosiy qismi bo'lib, uning gidrofil (suvni yaxshi qabul qiluvchi) va gidrofob (suvni qaytaruvchi) qismi mavjud.
2. Oqsillar:

Integral oqsillar: Membranani to'liq yoki qisman kesib o'tib, turli vazifalarni bajaradi (masalan, ion kanallari sifatida ishlaydi).

Periferik oqsillar: Membrananing tashqi yoki ichki tomonida joylashadi va hujayraning boshqa komponentlari bilan o'zaro aloqada bo'ladi.

3. Uglevodlar: Membrananing tashqi qismida glikolipid yoki glikoprotein sifatida uchraydi va hujayrani tashqi muhit bilan tanishtiradi.

Plazmatik membrananing asosiy vazifalari:

Modda almashinuvi: Hujayra ichiga oziq moddalar, ionlar va suvning kirishi hamda chiqishini boshqaradi.

Himoya: Hujayrani tashqi zararlardan himoya qilib, unga ekologik barqarorlikni ta'minlaydi.

Signal uzatish: Membranadagi retseptorlar tashqi muhitdan keladigan signallarni qabul qilib, hujayra ichiga uzatadi.

Tanib olish: Membranadagi uglevodlar va oqsillar hujayraning boshqa hujayralar bilan aloqa qilishi va tashqi muhitni tanib olishini ta'minlaydi.

Mexanik struktura: Hujayraga shakl berishda va ichki organoidlarning joylashishini saqlashda ishtirok etadi.

Biologik ahamiyati. Plazmatik membrana o'simlik hujayrasining ichki muhiti va tashqi muhit o'rtasidagi muvozanatni ta'minlovchi asosiy struktura hisoblanadi. U biomolekulalar va ionlarning transportini nazorat qilib, hujayra faoliyati uchun zarur bo'lgan energetik va kimyoviy jarayonlarni amalga oshiradi.

Membrananing o'tkazuvchanligi fotosintez, nafas olish, moddalar almashinuvi kabi asosiy jarayonlar uchun muhimdir. Shuningdek, membrana o'simliklarning tashqi stresslarga, masalan, qurg'oqchilik yoki sho'rlanishga bardosh berish qobiliyatida ham muhim rol o'ynaydi.

Sitoplazma. Sitoplazma hujayraning ichki qismini to'ldirib turuvchi yarim suyuq modda bo'lib, u hujayra membranasi bilan yadro orasidagi bo'shliqni to'ldiradi. Sitoplazma hujayradagi barcha organoidlarni o'z ichiga oladi va hujayra ichidagi kimyoviy jarayonlarning asosiy maydoni hisoblanadi. Uning tarkibi asosan suv (75-90%), ionlar, oqsillar, lipidlar, uglevodlar va boshqa eritmalar bilan boyitilgan.

1. Sitoplazmatik matritsa: Yarim suyuq modda bo'lib, unda organoidlar va eritilgan moddalar joylashgan.
2. Organoidlar: Hujayra ichidagi maxsus funksiyalarga ega tuzilmalar, masalan, mitoxondriya, xloroplastlar, vakuola va boshqalar.
3. Sitoplazmatik skelet: Mikrotubulalar, mikrofilamentlar va oraliq filamentlardan tashkil topgan, hujayraga shakl va ichki mustahkamlik beradi.

Sitoplazmaning hujayra hayotidagi roli nihoyatda katta

Biokimyoviy jarayonlar maydoni: Oqsillar, lipidlar, uglevodlar va nuklein kislotalarning sintezi, metabolizm jarayonlari sitoplazmada sodir bo'ladi.

Moddalar transporti: Sitoplazma oqimlari (tsikloz) organoidlar va molekullarni hujayra ichida harakatlantiradi.

Mexanik qo'llab-quvvatlash: Sitoplazmatik skelet hujayra organoidlarini o'z joyida saqlaydi va hujayraga shakl beradi.

Energiya ishlab chiqarish: Mitoxondriya va boshqa organoidlar yordamida energiya ishlab chiqarish jarayonlariga ishtirok etadi.

Signal uzatish: Hujayra ichidagi kimyoviy signallarni bir qismlardan boshqalariga yetkazishda vositachilik qiladi.

Sitoplazma hujayra hayot faoliyatining asosiy manbai bo'lib, unda barcha metabolik va energetik jarayonlar sodir bo'ladi. Bu hujayraning ichki muhitini saqlashda, hujayraning tiriklik holatini ta'minlashda va organoidlar o'rtasidagi hamkorlikni yo'lga qo'yishda muhim ahamiyatga ega.

O'simlik hujayrasidagi sitoplazma modda almashinuvi va fotosintez jarayonlariga yordam berib, o'simlikning o'sishi va rivojlanishi uchun zarur sharoitlarni yaratadi.

Yadro o'simlik hujayrasining eng muhim organellalaridan biri bo'lib, u hujayraning o'sishi, rivojlanishi va bo'linishi kabi hayotiy jarayonlarni boshqaradi. Yadro hujayraning genetik materialini saqlab, irsiyat va oqsil sintezi jarayonlarini boshqaradi. Quyida yadroning tuzilishi va funksiyalari batafsil yoritilgan.

Yadroning tuzilishi

1. Yadroviy qobiq

Ikki qavatli membranadan iborat bo'lib, yadro va sitoplazma orasidagi chegarani tashkil qiladi.

Yadroviy qobiqda kichik teshikchalar (poralar) mavjud bo'lib, ular orqali RNK, oqsillar va boshqa molekullar o'tadi.

2. Nukleoplazma

Yadro ichini to'ldirib turadigan suyuq muhit.

Nukleoplazma ichida xromatin va boshqa molekullar joylashgan.

3. Xromatin

DNK va oqsillar kompleksidan iborat bo'lib, genetik ma'lumotni saqlaydi.

Yadro bo'linish jarayonida xromatin zichlashib, xromosomalarni hosil qiladi.

4. Yadrochalar (nukleolus)

Yadro ichidagi zich tuzilma bo'lib, ribosomalarning yig'ilishi uchun javob beradi.

Bu joyda ribosomal RNK (rRNK) sintezlanadi.

Xloroplastlar va Vakuolalar. O'simlik hujayrasining ba'zi organellalari boshqa organizmlar hujayralaridan farq qiladi. Xloroplastlar va vakuolalar aynan o'simlik hujayrasiga xos tuzilmalar bo'lib, ular o'simliklarning hayotiy jarayonlarida muhim rol o'ynaydi. Quyida har bir organellaning tuzilishi va funksiyalari batafsil yoritiladi.

Xloroplastlar. Xloroplastlar o'simlik hujayrasining eng muhim organellalaridan biri bo'lib, ular fotosintez jarayonini amalga oshiradi.

Fotosintez — bu quyosh nurini kimyoviy energiyaga aylantirish jarayoni bo'lib, o'simliklar uchun hayotning asosiy energiya manbai hisoblanadi.

Xloroplastlarning tuzilishi:

Tashqi qobiq: Xloroplastning tashqi membranasi juda yupqa va himoya vazifasini bajaradi.

Ichki qobiq: Ichki membranalar bir-biriga yopishib, tilakoidlar (yashil plastinkalar) shaklida tartiblanadi. Bu membranalarda fotosintez uchun zarur bo'lgan pigmentlar mavjud.

Stroma: Tilakoidlar orasida suyuq muhit — stroma joylashgan. Bu erda karbonat angidrid (CO_2) ning kimyoviy o'zgarishlari va boshqa fotosintez jarayonlari ro'y beradi.

Xlorofill: Xloroplastlarning ichki membranasi joylashgan yashil pigment bo'lib, u quyosh nurlarini yutib, fotosintez jarayonini boshlashga yordam beradi.

Xloroplastlarning funksiyalari

Fotosintez: Xloroplastlar, asosan, quyosh nurini o'zlashtirib, o'simlik uchun zarur bo'lgan oziq moddalar — glukozani ishlab chiqaradi.

Kislorod ishlab chiqarish: Fotosintez jarayonida o'simliklar kislorod (O_2) hosil qiladi, bu esa atrof-muhitga chiqariladi va hayvonlar uchun zarur bo'lgan kislorod manbaiga aylanadi.

Vakuola — o'simlik hujayrasining ichki tuzilmasidagi katta va suyuqlik bilan to'la bo'lgan po'sloq tuzilmadir. Odatda o'simlik hujayrasida markaziy vakuola mavjud bo'lib, u hujayra turini shakllantirish va saqlashda muhim rol o'ynaydi.

Vakuolaning tuzilishi

Qattiq membrana: Vakuola tashqi membranasi — tonoplast deb ataladi. Bu membrana vakuolani atrofdagi hujayra qismlaridan ajratib turadi.

Suv va eritmalar: Vakuola ichida suv, mineral moddalar, shakarlar, kislotalar va chiqindi mahsulotlari mavjud. Vakuola ichidagi suyuqlikni saproplazma deb ataladi.

Vakuolaning funksiyalari

Turgor bosimi: Vakuola o'simlik hujayrasining ichki bosimini saqlaydi. Bu bosim hujayraning shaklini va strukturaviy mustahkamligini ta'minlaydi. Hujayra vakuoladagi suyuqlikni o'z ichiga olib, o'sishda davom etadi.

Oziq moddalar va chiqindilarni saqlash: Vakuola o'simlikda oziq moddalarini (masalan, shakar) zaxiralaydi, shuningdek, chiqindi moddalarni va zararli toksinlarni o'zida jamlaydi.

Pigmentlar va moddalarning to'planishi: Ba'zi o'simliklar vakuolasida rangli pigmentlar, masalan, antotsianinlar mavjud bo'lib, ular o'simliklarning rangini belgilaydi.

Chiqindilarni ajratish: Vakuola ba'zan o'simlikning chiqindi moddalarini ajratish va qayta ishlashda ham ishtirok etadi.

Xloroplastlar va vakuolalar o'simlik hujayrasining eng muhim qismlaridan hisoblanadi. Xloroplastlar fotosintez jarayonini amalga oshirib, o'simliklarni oziqlantiradi va atrof-muhitga kislorod beradi. Vakuola esa hujayra ichidagi bosimni saqlab, oziq moddalar va chiqindilarni saqlaydi, shuningdek, o'simlikka shakl beradi. Bu organellalar o'simliklarning hayotiy jarayonlarini qo'llab-quvvatlash uchun muhimdir.

Endoplazmatik to'r va Golji apparati o'simlik hujayrasining ikki muhim organellasi bo'lib, ular hujayrada modda almashinuvi, oqsil sintezi va materiallarning tashilishi bilan bog'liq jarayonlarni boshqaradi. Quyida har bir organellaning tuzilishi va funksiyalari haqida batafsil ma'lumot berilgan.

Golji apparati (yoki Golji kompleks) — bu o'simlik va hayvon hujayralarida mavjud bo'lgan organella bo'lib, u moddalarni qayta ishlash, saqlash va tashish bilan shug'ullanadi. Golji apparati organellalarini "pochta markazi" sifatida tasvirlash mumkin, chunki u o'simlik hujayrasining ichki transport tizimida muhim rol o'ynaydi.

Golji apparatining tuzilishi

Membranali disklar: Golji apparati bir nechta membranali disklar va ularning o'zaro bog'lanishidan iborat. Bu disklar odatda "sisternalar" deb ataladi.

Vezikulalar: Golji apparatining membranalaridan kichik to'plamlar (vezikulalar) ajralib chiqadi. Vezikulalar molekulalarni tashishda ishtirok etadi, bu jarayon hujayra ichidagi moddalar almashinuvi uchun juda muhim.

Polarishtirish markazlari: Golji apparatining har bir qismi maxsus polarishtirish funksiyasini bajaradi. Ular oqsillar va boshqa moddalarning maqsadli manzilga yetkazilishini ta'minlaydi.

Golji apparatining funksiyalari

Moddalar yig'ilishi va qayta ishlanishi: Golji apparati oqsillarni va lipidlarni yig'ib, ularni qayta ishlaydi. Masalan, glykoproteinlar (oqsil va uglevodlarning komplekslari) ishlab chiqariladi.

Sekreksiya va transport: Golji apparati turli moddalarga qoplangan vezikulalarni hosil qilib, ularni hujayraning tashqarisiga yoki hujayra ichiga yuboradi. U bu jarayonni turli organellalar va hujayra membranasi orqali amalga oshiradi.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Polisaxaridlar sintezi: Golji apparati polisaxaridlar va hujayra devori moddalari (masalan, selluloza va pektin) sintezini ta'minlaydi, bu o'simlik hujayrasining tuzilishini qo'llab-quvvatlaydi.

Moddalarning tasnifi: Golji apparati moddalarning to'g'ri manzilga yetkazilishini ta'minlaydi. Bu jarayon orqali hujayra o'z ichidagi molekulalarni mos ravishda ishlatadi.

Mitoxondriya hujayradagi energetik markaz hisoblanadi. U hujayraning asosiy energiya manbai bo'lgan ATP (adenozin trifosfat) ishlab chiqaradi. Mitoxondriya barcha eukaryotik hujayralarda mavjud bo'lib, ular hujayra ichidagi energiya ehtiyojlarini ta'minlaydi.

Mitoxondriyaning tuzilishi

Ichki va tashqi membranalar: Mitoxondriya ikki qatlamli membranadan iborat. Tashqi membrana silliq, ichki membrana esa juda ko'p burmalarni hosil qiladi va bu tuzilma krista deb ataladi. Ichki membrana ATP ishlab chiqarishda asosiy rol o'ynaydi.

Matriks (matritsa): Ichki membrananing ichida joylashgan suyuqlik bo'lib, unda fermentlar, nuklein kislotalar, ribosomalar va boshqa moddalar mavjud.

DNK: Mitoxondriya o'zining DNKga ega bo'lib, bu uning o'zini o'zi ko'paytirish imkoniyatini beradi.

Ribosomalar: Mitoxondriya ichida ribosomalar ham mavjud bo'lib, ular o'z ichidagi oqsillarni sintez qiladi.

Apoptoz (hujayra o'limi): Mitoxondriya ba'zan hujayra o'limi jarayonini (apoptoz) boshqarishda ishtirok etadi, ya'ni hujayraning o'z-o'zini yo'q qilishi jarayonini qo'zg'atadi.

Ribosomalar oqsil sintezining asosiy organellalaridir. Ular barcha hujayralarda mavjud bo'lib, o'ziga xos tuzilishga ega. Ribosomalar hujayraning har bir qismida mavjud bo'lishi mumkin: sitoplazmada, endoplazmatik to'rda (ER) yoki mitoxondriya va xloroplastlarda.

Ribosomalar tuzilishi

Subbirliliklar: Ribosomalar ikkita asosiy subbirlilikdan tashkil topgan — katta subbirlilik va kichik subbirlilik. Bu subbirliliklar o'zaro birlashib, oqsil sintezini amalga oshiradi.

Ribonuklein kislota (RNK): Ribosomalar RNK va oqsillardan tashkil topgan, shuning uchun ularning tuzilishida RNKning rolini ham e'tiborga olish kerak.

Qattiq struktura: Ribosomalar sitoplazmada erkin holatda yoki granulyar ERning (endoplazmatik to'r) membranalariga yopishgan holda joylashadi.

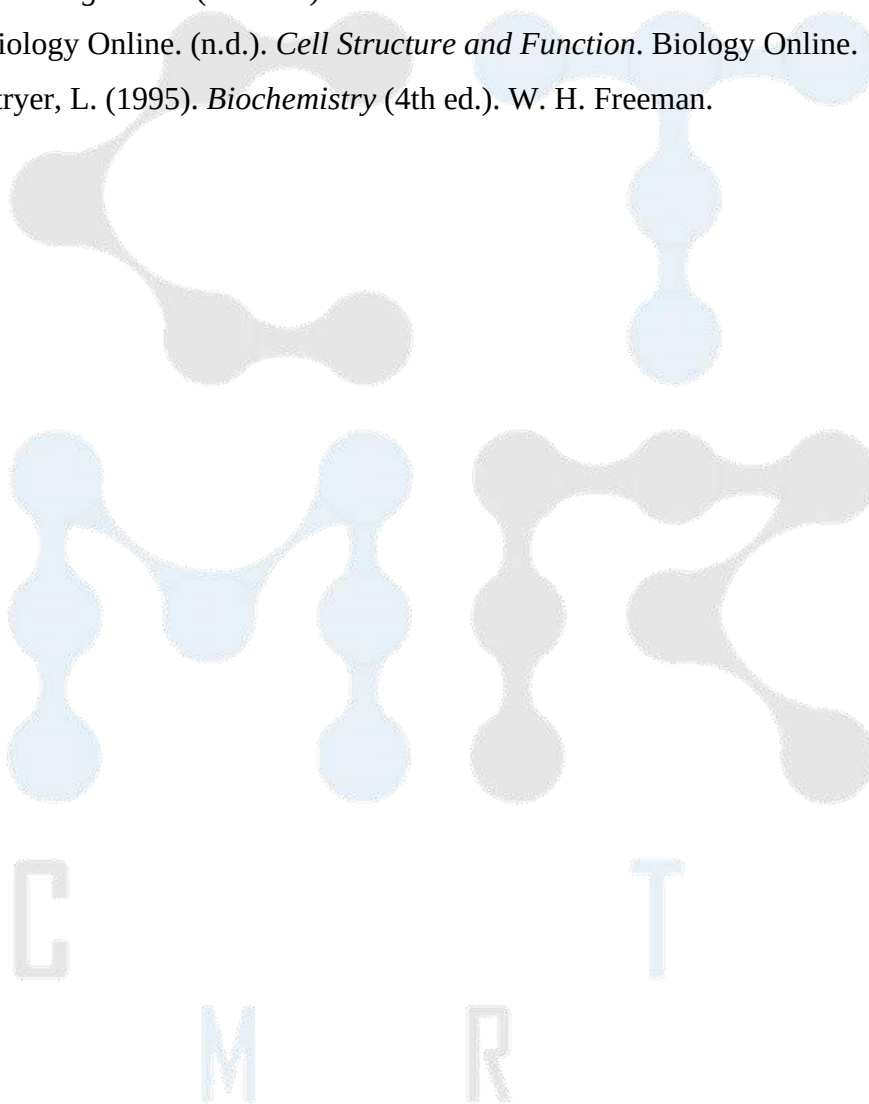
Foydalanilgan adabiyotlar

1. Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., & Walter, P. (2015). *Molecular Biology of the Cell* (6th ed.). Garland Science.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

2. Lodish, H., Berk, A., Zipursky, S. L., et al. (2000). *Molecular Cell Biology* (4th ed.). W. H. Freeman.
3. Campbell, N. A., & Reece, J. B. (2008). *Biology* (8th ed.). Pearson Benjamin Cummings.
4. Nelson, D. L., Cox, M. M. (2008). *Lehninger Principles of Biochemistry* (5th ed.). W.H. Freeman and Company.
5. Madigan, M. T., Martinko, J. M., Dunlap, P. V., & Clark, D. P. (2015). *Brock Biology of Microorganisms* (14th ed.). Pearson.
6. Biology Online. (n.d.). *Cell Structure and Function*. Biology Online.
7. Stryer, L. (1995). *Biochemistry* (4th ed.). W. H. Freeman.



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Abstract: Today, media culture plays a unique and important role in raising the morale of society. Media, information media and communication networks are used as the main means of implementing social, political, economic and cultural changes in society. It is possible to spread moral, aesthetic, cultural and social values among people with the help of media culture in raising spirituality. In this article, the role of media culture in raising the morale of the society is analyzed and opinions are presented.

Key words: Society, spirituality, culture, globalization, media literacy, information technology, Internet.

In cultural studies, media culture means the modern Western capitalist society that emerged and was formed under the influence of mass media and social networks in the 20th century[1:56]. In its place, this term refers to the general and intellectual influence of mass media not only on public opinion, but also on tastes and values, as well as on society.

Knowing the elements of social networks and mass culture is today's urgent task. We are currently living in the era of modern technology, we prefer the internet to various socio-political newspapers, books and TV shows when looking for any information we want, any information we need. The reason is that information on social networks, that is, on the Internet, is updated frequently. It does not cause any difficulties for us to use the Internet.

According to the European Union documents, media education is media competence, which should be understood as a critical and thoughtful attitude to the media in order to educate responsible citizens who are able to express their opinion based on the information received. development oriented education. This is the use of information necessary for citizens, its analysis, identification of economic, social and cultural interests related to them. Media culture is a set of knowledge, skills and abilities needed to analyze, evaluate, and create various media works.

Media culture is a necessary part of personal culture, familiarization with the types of mass media, the information distributed through them, theoretical knowledge, practical skills, acquisition of skills in the relevant fields based on their selection, sorting, analysis and evaluation. thorough acquisition, the sum of abilities to skillfully apply this knowledge in professional, everyday, cultural, spiritual and educational (practical) activities. In essence, the acquisition of

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

media culture by a person is not a spontaneous process, but is based on evolutionary development in several stages [2:109].

In the conditions of rapid development of information technologies, information security is of great importance in ensuring the national interests of the individual, society, and the state. It is known that material, socio-political interest lies at the bottom of every piece of information. But using information against national and international interests is a crime. Today, information is becoming the main and terrible weapon in the hands of some countries of the world and international terrorist organizations. The reason is that information reaches people's attention in the most convenient, fastest and most effective way.

The emergence of the Internet system is changing the consciousness and spiritual culture of mankind. The emergence of this system has many positive effects, such as information exchange between humanity and society, acceleration of economic relations, awareness of news in political and social spheres, facilitation of cultural and spiritual relations between institutions and millions of people. is known to have created opportunities.

At the same time, it would not be wrong to say that the Internet system is changing the culture and spirituality of society in a negative way. Because the destructive forces trying to use the Internet for various nefarious purposes, the slanders, fabricated messages and videos being sent by them into this system have increased tremendously; it is also necessary to mention that the Internet has a negative effect on poisoning the human heart and mind, morals and psyche.

Therefore, if we people today first of all know what media culture is and its place in society, we will never get lost or be deceived.

Media culture is a culture formed under the influence of mass media. It provides a person's need for information, manages people's interests, attracts people, uses various forms of influence, methods and tools, and skills [3:138]. Today, media culture controls the mind and thinking of young people. Media culture has stuck to our society like weeds. There is no way to be a stranger to him. Now it is necessary to rationally manage the process of young people entering the media culture and connecting with it.

The concept of media culture is different from the concept of "mass culture". Media culture is a product of the globalization process. Therefore, just like globalization itself, it has both positive and negative aspects. It is necessary to accept and develop the positive side, be careful with the negative side, and protect ourselves from its unfortunate consequences. Today, the role of mass media in our country is increasing in every field. Mass media is an important tool for ensuring the openness of the activities of state authorities and administrative bodies, establishing public control over them. It acts as a strong bridge between the government and the people.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Today's society's demand for information is higher than ever. This situation imposes a huge responsibility on media workers. In particular, the cross-cutting issue of problematic issues in different sections of the society increases the sense of trust in the mass media and makes them look at it as a support.

The role of media culture in raising the morale of society is very important. Through the media, information, values and cultures are conveyed to every layer of society. Therefore, media culture plays a major role in the spiritual development of society. Here are some suggestions and recommendations to ensure the role of media culture in raising the morale of society:

- ✚ Media education and promotion;
- ✚ Ensuring accuracy and reliability of information;
- ✚ Promotion of cultural heritage and national values;
- ✚ Using the media with a responsible approach;
- ✚ Educating young people through the media;
- ✚ Social advertising and promotions in mass media;
- ✚ Increasing attention of journalists to ethics and professionalism.

In this way, media culture is an important tool in raising the moral level of society, and every measure taken in this regard serves to improve society.

We can see the latest changes in this regard, as well as the example of extensive reforms being implemented in the system. The head of our state paid special attention to this issue in his holiday greetings to the employees of the sector. "Special importance is attached to strengthening the public relations of state agencies. In particular, the authorities and management bodies are constantly organizing press conferences, briefings, and open dialogues regarding the progress of reforms implemented in our country, the implementation of national programs and strategies.

Media culture has a great role in raising the morale of society. Moral, cultural and social values can be promoted through media, especially television, internet and social media. At the same time, it is necessary to develop a culture of information analysis in society in order to fight against the negative effects of media culture, to prevent false information and discrimination. Thus, by improving media culture, spreading positive information and avoiding negative consequences, great results can be achieved in raising the morale of society.

References:

1. Bignell, S. Jonatan. Postmodern media madaniyati (2007). – 200 b.
2. Askarova S. Talabalarning mediamadaniyatini rivojlantirish dolzarb pedagogik muammo sifatida. Jur. Academic Research in Educational Sciences №2. 2022 (109-112).
3. Qo'chqorov O. Mahmudov Z. Zamonov. Ma'naviyat asoslari. Toshkent yangi yo'l servis 2017. 138 bet.
4. Jurnalistika: Bosma ommaviy axborot vositalarida janrlar va mahorat masalalari. Nashrga tayyorlovchi N. Toshpo'latova. 5-j. -T.: "O'zbekiston", 2019. 20-bet.
5. Арисланбаева, З. Е. "НАЦИОНАЛЬНАЯ КУЛЬТУРА В ЭПОХУ ГЛОБАЛИЗАЦИИ." Экономика и социум 9 (124) (2024): 442-445.
6. Арисланбаева, З. Е. "НРАВСТВЕННЫЕ ОСНОВЫ НАШЕГО ПОВЕДЕНИЯ—КАК НАЦИОНАЛЬНАЯ ЦЕННОСТЬ УЗБЕКСКОГО НАРОДА." *Multidisciplinary Journal of Science and Technology* 4.10 (2024): 337-340.
7. Арисланбаева, З., and Бибихан Адилбаева. "ҚОРАҚАЛПОҚ ХАЛҚ АНЪАНАВИЙ ДОСТОНЛАРИ ЭТНОМАДАНИЯТНИНГ БАДИИЙ НАМУНАСИ СИФАТИДА." *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ* 16.4 (2023): 88-96.
8. Арисланбаева, З. Э. "ЭТАПЫ РАЗВИТИЯ ФИЛОСОФИИ В УЗБЕКИСТАНЕ." *Экономика и социум* 11-2 (90) (2021): 887-890.
9. Arislanbaeva, A. B. "O 'Zbekistonda Balet San'ati Rivojlanishining Madaniy Jihatlar: An'analar Va Zamonaviy Innovatsiyalar." *Miasto Przyszłości* 53 (2024): 933-936.
10. Arislanbayeva, Zoya Ernazarovna. "IJTIMOIY FALSAFA." *Oriental renaissance: Innovative, educational, natural and social sciences* 1.10 (2021): 221-224.
11. Умирова, Г. "КАРАКАЛПАКСКИЙ ФОЛЬКЛОР И ЕГО СОВРЕМЕННЫЙ ОБЛИК." *Экономика и социум* 12-2 (103) (2022): 617-620.
12. Ernazarovna, Arislanbaeva Zoya. "Being is a Fundamental Category of Philosophy." *International Journal on Orange Technologies* 2.12 (2023): 29-33.
13. ERNAZAROVNA, ARISLANBAEVA ZOYA. "The Poet Who Taught Him to Love His Country." *JournalNX* 7.1: 285-288.
14. Ernazarovna, Arislanbaeva Zoya. "THE ROLE OF PHILOSOPHY IN THE FORMATION OF A PERSON'S WORLDVIEW." *Chief Editor* 5.6 (2020).
15. Ernazarovna, Arislanbaeva Zoya. "The Tasks of Philosophy and Its Role in the Development of Man and Society." (2023).

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Аннотация: В данной статье изложена психологические особенности взаимоотношений мальчиков и девочек в раннем возрасте и их развитие. Взаимные проблемы и решение проблем.

Ключевые слова: психология, взаимоотношения, внутриклассные, ранние отношение, друзья, девочка, мальчик, половые созревание, интерес, факторы.

Ранний возраст считается важнейшим периодом жизни ребёнка, когда закладываются наиболее важные способности, определяющие дальнейшее развитие человека. Так как в раннем возрасте развиваются другие психические функции – восприятие, мышление, память, внимание. Это означает определенную зависимость от него остальных психических процессов, а также физических процессов. Поведение детей является полевым, импульсивным; ничто из того, что лежит вне наглядной ситуации, их не привлекает. Потому что этот период складываются ключевые качества как познавательная активность, речь, доверие к миру, уверенность в себе, доброжелательное отношение к людям, творческие возможности, общая жизненная активность у детей раннего возраста.

Психологические особенности мужского пола, пусть еще и в неразвитой форме, выявляются уже с раннего возраста. По мере развития ребенка они становятся все более отчетливыми. В каждом конкретном случае воспитание может способствовать их выявлению и развитию или же, напротив, сглаживать; при этом индивидуальная устойчивость к такому сглаживающему влиянию различна: одни мальчики вопреки любым воздействиям окружающих демонстрируют типичные для мужского пола черты. Другие же поддаются этим воздействиям, и поведение их становится менее контрастным в сравнении с поведением их сверстниц.

Следует учитывать также и относительный характер половых психологических особенностей: общечеловеческие черты, качества, свойства более широки и полностью перекрывают специфически половые особенности; поэтому можно говорить лишь о преобладании каких-либо из них у представителей мужского или женского пола, причем это преобладание подразумевает, во-первых, большую частоту какого-либо свойства у

представителей определенного пола и, во-вторых, большую его выраженность при наличии такого свойства у представителей обоего пола.

Мальчики развиваются как физически, так и психологически несколько более медленными темпами, чем девочки. Известно, что говорить они начинают в среднем на 2-4 месяца позже девочек, позже у них вырабатываются и многие понятия, связанные с взаимоотношениями между людьми; к началу обучения в школе они, как правило, подходят менее подготовленными, чем девочки. У мальчиков медленнее и труднее вырабатываются такие качества, как ответственность, добросовестность, исполнительность; даже при правильном воспитании выработать у представителей мужского пола эти качества в среднем труднее.

Характерно, что девушки, например, чувствуют себя в обращении с юношами более свободно, чем юноши с девушками. В любом возрасте представители женского пола более склонны обращаться к авторитетам в определении своей позиции, при каких-либо затруднениях более склонны придерживаться установленных норм поведения. Девочек в школе легче заставить выполнять какие-либо поручения.

Видимо, поэтому педагоги (в большинстве своем женщины) более, охотно дают поручения девочками недооценивают возможностей мальчиков в выполнении таких поручений. И нередко совершенно удивительным и неожиданным для них является способность мальчиков серьезно отнестись к делу, проявить активность и самостоятельность; характерно, что последнее нередко обнаруживается именно во внешкольных делах — например, в походе, куда отправляется класс.

Именно здесь выясняется, что мальчики могут быть и серьезными, и деловыми, и активными. и в данной ситуации явно продуктивнее девочек. Частично это связано с тем, что сама школьная деятельность по своему характеру ближе к привычной дома деятельности девочек, чем мальчиков. и с тем, что последние всегда склонны к более неожиданным и выходящим за привычные рамки делам, которые девочек. напротив, нередко настораживают. Интересы и склонности представителей мужского пола часто направлены на относительно отдаленные предметы и явления, порою далекие от того, что могло бы входить в прямые обязанности мальчика, подростка, юноши. Отсюда более выраженная у мужского пола склонность отвлекаться на посторонние дела, заниматься не тем, что непосредственно требуется.

Если в центре внимания девочки, начиная с раннего возраста, находится человек и сфера его непосредственного бытия — взаимоотношения между людьми, окружающие предметы, то внимание мальчиков привлекают в значительно большей степени отдаленные предметы и явления. С этим связаны лучшие знания девочек о себе, их большее внимание к своей внешности и к особенностям внешности и поведения окружающих, больший интерес к внутреннему миру, большая чуткость к чувствам и переживаниям человека. Не случайно девочки в 3-4 раза чаще чем мальчики, ведут дневник.

Различия в интересах и склонностях определяют некоторые важные преимущества мужского пола большую широту мышления, более широкий кругозор, лучшую способность сопоставления отдаленных предметов и явлений, большую объективность обобщения и вместе с тем важные недостатки — меньшую бытовую приспособленность, худшее понимание необходимого в сравнении с пониманием возможного.

Заметны различия в восприятии времени и пространства Представителей женского пола больше привлекает то, что расположено непосредственно около человека — дом, обстановка, непосредственное окружение, люди, с которыми приходится общаться. т. е. все непосредственно взаимосвязанное;

Представителей же мужского пола, независимо от непосредственной необходимости, от повседневных дел. часто интересуют предметы и явления удаленные, никак не связанные между собой.

Однако лица женского пола нередко увереннее чувствуют себя и проявляют большую активность в ситуациях, связанных с общением. Если же объект, местность, предмет в целом достаточно известен и мальчикам, и девочкам, то последние лучше его знают. Не случайно они в среднем лучше пишут изложения и сочинения: у них больше связности и описательности, больше внимания к деталям, хотя и не больше фантазии. В восприятии самого течения времени представители женского пола уступают мужскому, что, правда, не всегда заметно в связи с более ответственным, в среднем, их отношением к своим обязанностям.

Как справедливо отмечает С. Шейнкман (Мы мужчины. М., 1977), и в отличие от женщин, вся жизнь которых загружена постоянным кропотливым трудом, мужчинам всегда было свойственно резко сменять сверхактивную деятельность пассивным времяпрепровождением, опасность которого особенно велика в наши дни. Заметим,

однако, что многие женщины и рады бы отдохнуть, да некогда, а мужчины имеют возможность такой отдых себе позволить.

Все эти особенности психологии мальчиков, подростков, юношей в различных ситуациях определяют существенные различия в поведении их в сравнении со сверстниками.

Если от девочек приходится требовать, чтобы они делали уроки, то мальчиков приходится заставлять их делать. Девочки в среднем аккуратнее, прилежнее, добросовестнее, исполнительнее. Даже если вообще мальчик соображает не хуже, а лучше девочки, заставить его соображать именно на уроке труднее, чем девочку. Непоседливость мальчиков, их меньшая способность переносить статическую нагрузку проявляется в более частом нарушении ими дисциплины на уроке, в более шумном поведении на переменах.

Мальчики значительно меньше, чем девочки, обращают внимание на свою одежду, кроме лишь тех случаев, когда особенности предлагаемой одежды как-то затрагивают их представления о том, как должен одеваться мальчик (в отличие от девочки), — здесь может быть сильный протест, а то, что одежда грязная или порванная, их интересует и затрагивает меньше, чем девочек.

Список использованных источников:

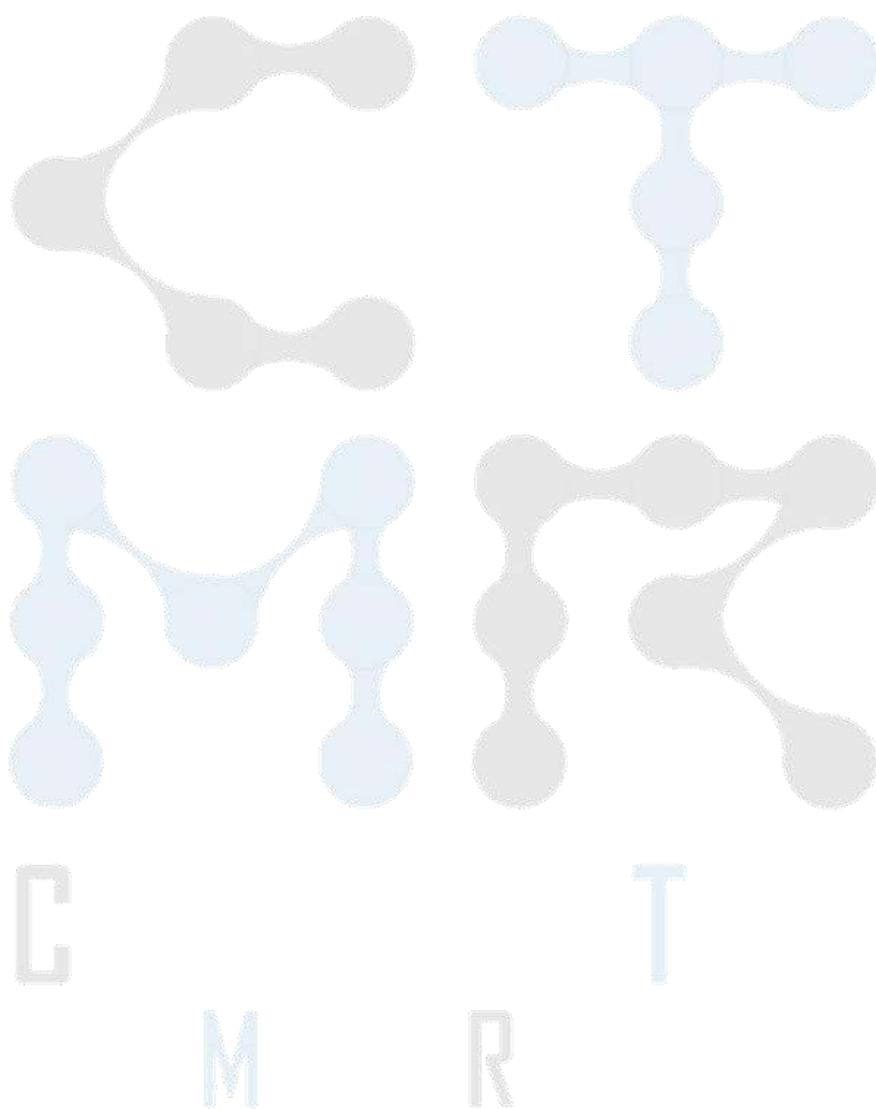
1. Взаимоотношения детей в совместной деятельности и проблемы воспитания: Сб. науч. тр. – М.: НИИ ОП, 1976.
2. Исаев Д.Н., Каган В.Е. Половое воспитание и психогигиена у детей. –Л.: Медицина, 1980.
3. Станкин М.И. Если мы хотим сотрудничать. – М.: Издательский центр «Академия», 1996.
4. Мир детства: младший школьник / Под ред. А.Г. Хрипковой – М.: Педагогика, 1998.
5. Соловьева О.Б. Обратные связи в межличностном общении. – М.: 1989.
6. Хрипкова А.Г., Колесов Д.В. Мальчик – подросток – юноша. – М.: Просвещение, 1982.
7. Raufovich, Fayziev Turabek, and Umaralieva Gulchehra Bahodirjonovna. "Moral as a form of spiritual culture." International Journal on Integrated Education 2.6 (2019): 21-22.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

8. Umaraliev, Gulchehra. "SOCIO-PHILOSOPHICAL ASPECTS OF THE CONCEPT OF BIOAESTHETICS." *Multidisciplinary Journal of Science and Technology* 4.6 (2024): 540-545.
9. Umaraliyeva, Gulchehra. "KAYKOVUSNING "QOBUSNOMA" ASARIDA FARZAND TARBIYASIGA OID QARASHLARI." *Zamonaviy fan va ta'lim yangiliklari xalqaro ilmiy jurnal* 2.1 (2024): 200-205.
10. Umaraliyeva, Gulchehra Bahodirjonovna. "BIOESTETIKANI BILISH EVOLUTSIYASI." *Scientific progress* 2.2 (2021): 1258-1261.
11. Исоков, Зиёдулло. "САНЪАТ ВА МАДАНИЯТ–МИЛЛИЙ ТАРАҚҚИЁТИМИЗ КЎЗГУСИ." *Scientific progress* 2.2 (2021): 1273-1278.
12. Исоков, Зиёдулло. "ТРАДИЦИИ И ОБРЯДЫ ТЮРКСКИХ НАРОДОВ СВЯЗАННЫЕ С НЕБЕСНЫХ СВЕТИЛЬ В ТРАДИЦИОННОМ ЗЕМЛЕДЕЛИИ И ЖИВОТНОВОДСТВЕ (ПО МАТЕРИАЛОВ ФЕРГАНСКОЙ ДОЛИНЫ)." *Scientific progress* 2.2 (2021): 1420-1423.
13. Safaralievich, Isokov Ziyodullo. "The entry of theater art to Turkistan in the late XIX and early XX centuries." (2023).
14. Исоков, Зиёдулло. "Земледельческая обрядность узбеков Ферганской долины." *Multidisciplinary Journal of Science and Technology* 4.10 (2024): 331-336.
15. Umaraliev, G. B. "SPECIFIC FEATURES OF STATE AND LAW RELATIONS." *Мировая наука* 3 (36) (2020): 106-109.
16. Арисланбаева, З. Е. "НАЦИОНАЛЬНАЯ КУЛЬТУРА В ЭПОХУ ГЛОБАЛИЗАЦИИ." *Экономика и социум* 9 (124) (2024): 442-445.
17. Арисланбаева, З. Е. "НРАВСТВЕННЫЕ ОСНОВЫ НАШЕГО ПОВЕДЕНИЯ–КАК НАЦИОНАЛЬНАЯ ЦЕННОСТЬ УЗБЕКСКОГО НАРОДА." *Multidisciplinary Journal of Science and Technology* 4.10 (2024): 337-340.
18. Арисланбаева, З. Э. "ЭТАПЫ РАЗВИТИЯ ФИЛОСОФИИ В УЗБЕКИСТАНЕ." *Экономика и социум* 11-2 (90) (2021): 887-890.
19. Arislanbaeva, A. B. "O 'Zbekistonda Balet San'ati Rivojlanishining Madaniy Jihatlar: An'analar Va Zamonaviy Innovatsiyalar." *Miasto Przyszłości* 53 (2024): 933-936.
20. Arislanbayeva, Zoya Ernazarovna. "IJTIMOIY FALSAFA." *Oriental renaissance: Innovative, educational, natural and social sciences* 1.10 (2021): 221-224.
21. Ernazarovna, Arislanbaeva Zoya. "THE ROLE OF PHILOSOPHY IN THE FORMATION OF A PERSON'S WORLDVIEW." *Chief Editor* 5.6 (2020).

22. Ernazarovna, Arislanbaeva Zoya. "The Tasks of Philosophy and Its Role in the Development of Man and Society." (2023).



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Resume: *Mycobacterium tuberculosis* requires iron for normal growth, but is subject to metal ion limitation due to its low solubility at biological pH and iron retention by mammalian hosts. The pathogen expresses a specific siderophore for Fe³⁺ to chelate the metal ion from insoluble iron and the proteins transferrin, lactoferrin, and ferritin. Siderophore-mediated iron uptake is essential for survival in tuberculosis disease, as knockout mutants defective in siderophore synthesis or uptake failed to survive in iron-deficient environments and in host macrophages. However, since excess iron is toxic due to its catalytic role in the generation of free radicals, iron uptake must be regulated to maintain optimal intracellular iron levels. The main objective of this review is to provide a comprehensive overview of iron homeostasis in *M. tuberculosis*, discussed in the context of mycobactin biosynthesis, iron transport across the mycobacterial cell envelope, and storage of excess iron.

Keywords: Tuberculosis, iron metabolism, iron free radicals,

Introduction: *M. tuberculosis* scavenges iron from host-cell transferrin by uptake of iron. Mycobactins are able to sequester iron from exogenous holotransferrin. Phagosomes containing live *M. tuberculosis* interact with early endosomes carrying holotransferrin. *M. tuberculosis* within the macrophage phagosome is able to accumulate more iron from transferrin than the nonpathogenic *M. smegmatis*. Mycobactins can also obtain iron from cytoplasmic pools supplied by holotransferrin and from hololactoferrin, which is more abundant than holotransferrin at the site of pulmonary infection. A recent study showed that gallium-loaded lipophilic mycobactin J from *M. paratuberculosis* (a surrogate for iron-mycobactin J and structurally close to mycobactin T) was exogenously added to macrophages and (1) infected and even equilibrated throughout the body, surrounds cells and is distributed between the aqueous and membrane domains of macrophages; (2) sequesters holotransferrin and scavenges cytoplasmic iron; and (3) is recruited as Fe-mycobactin to lipid droplets delivered via lipid trafficking to *Escherichia coli*-containing phagosomes. While these results are intriguing, exogenous addition of mycobactin does not mimic the in vivo situation, and the *E. coli*-infected phagosome does not mimic the *M. tuberculosis*-infected phagosome. In summary, *M. tuberculosis* evades host defenses by preventing phagosome

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

acidification and lysosome synthesis, by sequestering iron from host endosomal holotransferrin, and, if confirmed, by utilizing host lipids to deliver additional iron by mycobactin.

The number of patients with pulmonary tuberculosis with the involvement of other organs and systems has increased. One third of the world's population is infected with pulmonary tuberculosis. If a person is infected and does not undergo prophylaxis, he is at risk of developing a lifelong disease. Tuberculosis and medical care in Uzbekistan remain one of the serious problems of conservation [1,2, 3,4]. Every year, 3 million people die from tuberculosis worldwide, another 8 million become ill. It is especially alarming that the number of patients increases by 25-30% every year, and children and adolescents often become victims. Last year, the incidence of tuberculosis was 10.2 per 100,000 people. For comparison, in the region it ranges from 2.5 to 5.3.

Materials and methods: In reviewing the relationship between tuberculosis and iron, we aim to address biological and clinical issues, highlighting human conditions that may lead to iron overload in macrophages.

Results and analysis: Reviews of iron and tuberculosis have examined host iron levels and susceptibility to tuberculosis; data from experimental animal studies have shown that iron uptake is associated with disease progression, which overrides the iron-limiting response of the mammalian host to infection. Iron is essential for normal growth of *M. tuberculosis* within macrophages with low iron levels of 1 to 10 ng ml. This is maintained despite the high flux of metal ions within macrophages due to the destruction of erythrocytes and the internalization of iron through specific cell surface receptors for transferrin, lactoferrin, and hemoglobin-haptoglobin. However, a large proportion of the iron is transported to the bone marrow, and any free iron is bound to transferrin and lactoferrin. Lactoferrin, due to its ability to retain its metal ion even at acidic pH, plays an important role in the retention of iron by *M. tuberculosis* within alveolar macrophages in patients with pulmonary tuberculosis. Thus, it is necessary to develop siderophore mechanisms, as demonstrated by the sequestration of a metal ion by *M. tuberculosis* from holotransferrin and from hololactoferrin. When iron is available to the pathogen, as in macrophage cultures or in experimental animals infected with *M. tuberculosis*, the growth of the pathogen is enhanced. When iron is co-administered with the iron chelator deferoxamine or apo-transferrin, inhibition of pathogen growth occurs, clearly defining the role of iron in tuberculosis. These findings were subsequently confirmed using KO mutants with specific defects in iron uptake. As mentioned above, mycobactin biosynthesis and transport via the siderophore system are essential for in vivo pathogen survival, further confirming that iron uptake is associated with pathogen

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

virulence. The pathogen's exposure to iron deficiency within macrophages is evident from the upregulation of mbt genes. Thus, one or more components of the iron uptake mechanism may serve as marker(s) to reflect the iron status of the pathogen. Mycobacteria produce two types of siderophores, hydrophobic mycobactins and water-soluble carboxymycobactins, which scavenge iron from the immediate environment; saprophytic mycobacteria produce exochelins as the main extracellular siderophore. Mycobactin is confined to a cell envelope containing complex lipids, including highly hydrophobic mycobacterial mycolic acids. This lipid-rich organization makes the outer membrane of mycobacteria much more rigid than that of Gram-negative bacteria and requires the presence of two siderophores for iron uptake. In contrast to the TonB-dependent receptor-mediated internalization of the ferrisiderophore seen in Gram-negative organisms, it is more likely that iron is transferred from the ferriccarboxymycobactin outside the cytoplasmic membrane to the mycobactin. Iron transfer from ferriccarboxymycobactin to mycobactin has been shown and, as discussed later in this review, proposed to be mediated by a 28 kDa iron-regulated cell wall-associated protein, HupB, in *M. tuberculosis*.

Conclusions. The link between iron and tuberculosis has been strengthened by the elucidation of the *M. tuberculosis* genome, advances in immunology, and clinical trial results. Drugs that target mycobacterial iron uptake pathways for *M. tuberculosis* or host pathways that affect iron availability are worth developing and testing for anti-tuberculosis activity. The role of iron should be considered in future vaccine studies..

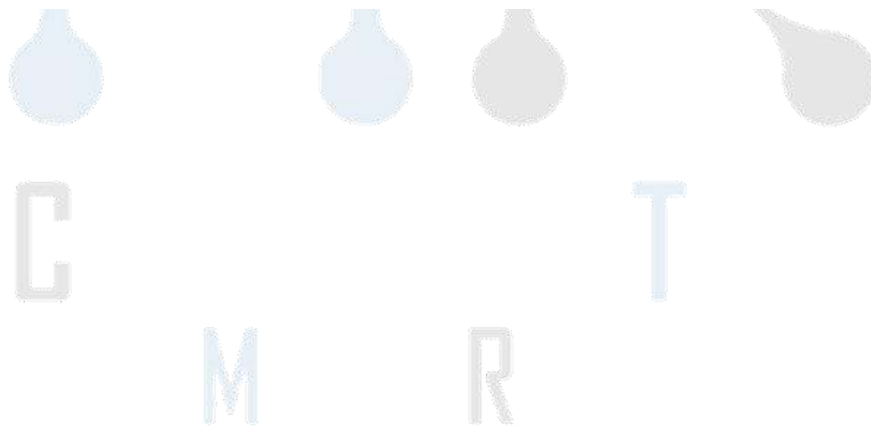
List of used literature:

1. World Health Organization. *National Tuberculosis Prevalence Surveys 2007–2016*; World Health Organization: Geneva, Switzerland, 2021. [[Google Scholar](#)]
2. Kumar, P. Adult pulmonary tuberculosis as a pathological manifestation of hyperactive antimycobacterial immune response. *Clin. Transl. Med.* **2016**, 5, 38. [[Google Scholar](#)] [[CrossRef](#)] [[Green Version](#)]
3. Kumar, N.P.; Moideen, K.; Banurekha, V.V.; Nair, D.; Babu, S. Plasma proinflammatory cytokines are markers of disease severity and bacterial burden in pulmonary tuberculosis. In *Open Forum Infectious Diseases*; Oxford University Press: Oxford, UK, 2019; p. ofz257. [[Google Scholar](#)]
4. Devi, U.; Rao, C.M.; Srivastava, V.K.; Rath, P.K.; Das, B.S. Effect of iron supplementation on mild to moderate anaemia in pulmonary tuberculosis. *Br. J. Nutr.* **2003**, 90, 541–550. [[Google Scholar](#)] [[CrossRef](#)] [[Green Version](#)]

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

5. Friis, H.; Range, N.; Kristensen, C.B.; Kæstel, P.; Chagalucha, J.; Malenganisho, W.; Krarup, H.; Magnussen, P.; Andersen, Å.B. Acute-phase response and iron status markers among pulmonary tuberculosis patients: A cross-sectional study in Mwanza, Tanzania. *Br. J. Nutr.* **2009**, *102*, 310–317. [[Google Scholar](#)] [[CrossRef](#)][[Green Version](#)]
6. Hella, J.; Cercamondi, C.I.; Mhimbira, F.; Sasamalo, M.; Stoffel, N.; Zwahlen, M.; Bodmer, T.; Gagneux, S.; Reither, K.; Zimmermann, M.B. Anemia in tuberculosis cases and household controls from Tanzania: Contribution of disease, coinfections, and the role of hepcidin. *PLoS ONE* **2018**, *13*, e0195985. [[Google Scholar](#)] [[CrossRef](#)][[Green Version](#)]
7. Kerkhoff, A.; Meintjes, G.; Opie, J.; Vogt, M.; Jhilmeet, N.; Wood, R.; Lawn, S. Anaemia in patients with HIV-associated TB: Relative contributions of anaemia of chronic disease and iron deficiency. *Int. J. Tuberc. Lung Dis.* **2016**, *20*, 193–201. [[Google Scholar](#)] [[CrossRef](#)] [[PubMed](#)]
8. Lee, S.W.; Kang, Y.; Yoon, Y.S.; Um, S.-W.; Lee, S.M.; Yoo, C.-G.; Kim, Y.W.; Han, S.K.; Shim, Y.-S.; Yim, J.-J. The prevalence and evolution of anemia associated with tuberculosis. *J. Korean Med. Sci.* **2006**, *21*, 1028–1032. [[Google Scholar](#)] [[CrossRef](#)] [[PubMed](#)][[Green Version](#)]
9. Minchella, P.A.; Donkor, S.; Owolabi, O.; Sutherland, J.S.; McDermid, J.M. Complex anemia in tuberculosis: The need to consider causes and timing when designing interventions. *Clin. Infect. Dis.* **2014**, *60*, 764–772. [[Google Scholar](#)] [[CrossRef](#)][[Green Version](#)]
10. Morris, C.D.; Bird, A.R.; Nell, H. The haematological and biochemical changes in severe pulmonary tuberculosis. *Q. J. Med.* **1989**, *73*, 1151–1159. [[Google Scholar](#)]



PSIXOLOGIK ADAPTATSIYA STRATEGIYASI VA UNING HAYOT
INQIROZLARINI YENGIB O'TISHGA TA'SIRI

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Nizomiy nomidagi TDPU tayanch doktoranti

Annotatsiya. Maqola o'rta yoshdagi inqiroz kabi hayotiy inqirozlarni bartaraf etishda asosiy rol o'ynaydigan psixologik moslashuv strategiyalarini tahlil qilishga bag'ishlangan. Ijобiy fikrlashni qo'llash, shaxsiy o'sishni rag'batlantirish, hissiy tartibga solish usullarini qo'llash va ijtimoiy aloqalarni saqlab qolish kabi asosiy usullarni qamrab oladi.

Kalit so'zlar. Psixologik moslashuv, hayotiy inqirozlar, ijobiy fikrlash, shaxsiy o'sish, hissiy tartibga solish, ijtimoiy aloqalar, ruhiy salomatlik, o'rta hayot inqirozi

Аннотация. Статья посвящена анализу стратегий психологической адаптации, которые играют ключевую роль в преодолении жизненных кризисов, таких как кризис среднего возраста. Рассматриваются основные методы адаптации, включая использование позитивного мышления, развитие личностного роста, применение техник эмоциональной регуляции, и поддержание социальных связей.

Ключевые слова. Психологическая адаптация, жизненные кризисы, позитивное мышление, личностный рост, эмоциональная регуляция, социальные связи, психическое здоровье, кризис среднего возраста.

Annotation. The article is devoted to the analysis of psychological adaptation strategies that play a key role in overcoming life crises, such as a midlife crisis. Covers key coping techniques, including using positive thinking, promoting personal growth, using emotional regulation techniques, and maintaining social connections.

Key words. Psychological adaptation, life crises, positive thinking, personal growth, emotional regulation, social connections, mental health, midlife crisis

Kirish. O'rta yoshdagi inqiroz inson hayotida moslashish va yengish uchun samarali strategiyalarni talab qiladigan muhim o'zgarishlar va qiyinchiliklar davrini anglatadi. Psixologik moslashuv hissiy va kognitiv reaksiyalarni boshqarish va tartibga solish jarayoni sifatida ushbu inqirozni muvaffaqiyatli bartaraf etishda muhim rol o'ynaydi. Maqolada psixologik moslashuvning asosiy strategiyalari va ularning shaxsiy rivojlanish va hissiy farovonlikka ta'siri muhokama qilinadi.

Adabiyotlar tahlili. Ushbu bo'limda psixologik moslashuv va hayotiy inqirozlarga qarshi kurashish strategiyalari bilan bog'liq asosiy tadqiqotlar va nazariyalar ko'rib chiqiladi.

Adabiyotlarni ko'rib chiqish odamlarning inqirozlarni qanday engish va hayotdagi o'zgarishlarga moslashishlarini tushunishga yordam beradigan asosiy tushunchalar va yondashuvlarni ta'kidlaydi.

Pozitiv tafakkur tushuncha sifatida Martin Seligman va boshqa olimlarning ijobiy psixologiya sohasidagi ishlarida batafsil tadqiq etilgan. Seligman (2006) o'zining "Yaxshi, mazmunli his qilish" kitobida ijobiy fikrlash ruhiy salomatlikni yaxshilash va yanada samarali kurashish bilan bog'liqligini ta'kidlaydi [1]. Bu optimistik nuqtai nazarga ega bo'lish stressni kamaytiradi va hayot sifatini yaxshilaydi, degan oldingi tadqiqotlarga mos keladi (Carver et al., 2005).

Inqirozlarni bartaraf etish mexanizmi sifatida shaxsiy o'sish konsepsiyasi Avraam Maslouning ishida ishlab chiqilgan bo'lib, u o'zining "Ehtiyojlar nazariyasi" da o'zini o'zi anglash muhimligini ta'kidlagan (Maslow, 1954). Maslouning fikriga ko'ra, inqirozlar o'z-o'zini rivojlantirish va shaxsiy o'sishning yuqori darajalariga erishish uchun imkoniyat sifatida ishlatilishi mumkin [3]. Tadqiqotlar shuni ko'rsatadiki, shaxsiy rivojlanishga intilish va yangi ko'nikmalarga ega bo'lish odamlarga inqirozli vaziyatlarda samaraliroq kurashishga yordam beradi (Schaufeli & Taris, 2014).

Hissiy tartibga solish sohasidagi tadqiqotlar, jumladan, Jeyms Grossning ishi, his-tuyg'ularni boshqarish inqirozlarni boshqarishda asosiy rol o'ynashini ko'rsatadi. Gross (2002), Emotsional tartibga solish va ruhiy salomatlik, meditatsiya va chuqur nafas olish kabi hissiy tartibga solish usullari odamlarga hissiy muvozanatni saqlashga va stressni kamaytirishga yordam berishini ko'rsatadi [5]. Bu boshqa tadqiqotlar tomonidan qo'llab-quvvatlanadi, bu shuni ko'rsatadiki, ong va dam olish amaliyotlari ruhiy salomatlikni yaxshilashga va stress belgilarini kamaytirishga yordam beradi (Kabat-Zinn, 2003).

Ijtimoiy yordam psixologik moslashuvning muhim jihati hisoblanadi. Jeyms Xaus (1981) va boshqa tadqiqotchilarning ishi oila va do'stlarning qo'llab-quvvatlashi stress darajasini pasaytiradi va inqirozli vaziyatlarda yaxshiroq kurashishga yordam beradi [7]. Ijtimoiy aloqalar nafaqat hissiy jihatdan yordam beradi, balki qiyin vaziyatlarda amaliy yordam beradi (Cohen & Wills, 1985).

O'rta yoshdagi inqiroz Daniel Levinsonning (1978) "Hayot kursining psixologiyasi" dagi tadqiqoti kabi ishlarda batafsil o'rganilgan. Levinson o'rta yoshdagi inqirozni hayot maqsadlarini sezilarli darajada o'zgartirish va qayta baholash davri sifatida ta'riflaydi, bu stressli bo'lishi mumkin va moslashishni talab qiladi [9]. Zamonaviy tadqiqotlar shuni tasdiqlaydiki, o'rta yoshdagi inqirozni muvaffaqiyatli yengish ijobiy fikrlash va shaxsiy o'sish kabi turli xil psixologik moslashish strategiyalaridan foydalanish bilan bog'liq (Vaillant, 2002).

Adabiyotlarni o'rganish ijobiy fikrlash, shaxsiy o'sish, hissiy tartibga solish va ijtimoiy qo'llab-quvvatlashni o'z ichiga olgan hayotiy inqirozlarni engish uchun yaxlit yondashuv muhimligini ta'kidlaydi. Tadqiqotlar shuni ko'rsatadiki, ushbu strategiyalardan foydalanish ruhiy salomatlikni yaxshilashga va o'zgarishlarga muvaffaqiyatli moslashishga yordam beradi. Ushbu tushunchalar va yondashuvlar odamlarga inqirozlarni bartaraf etish va hayotda uyg'unlikka erishishga qaratilgan amaliy tavsiyalar va tadbirlarni ishlab chiqish uchun asos bo'lib xizmat qiladi.

Ijobiy psixologiya asoschisi Martin Seligman o'zining "Quvnoq, yaxshi, mazmunli" (2006) kitobida ijobiy fikrlashning ruhiy salomatlikka ta'sirini o'rganadi. Tadqiqotning asosiy maqsadi - ijobiy fikrlash va optimizm hayot sifatini yaxshilash va stressni kamaytirishga qanday yordam berishini ko'rsatishdir [1].

Ijobiy fikrlash va baxt Seligmanning ta'kidlashicha, ijobiy fikrlash baxtga erishish va hayot sifatini yaxshilashda asosiy rol o'ynaydi. Ijobiy fikrlash voqealarga optimistik qarashni va hatto qiyin vaziyatlarda ham ijobiy tomonlarni topish qobiliyatini o'z ichiga oladi. Seligman baxtning uchta darajasini belgilaydi:

Yoqimli baxt hissiy lazzatlar va vaqtinchalik zavqlar bilan bog'liq.

Yaxshi baxt jalb qilishni talab qiladigan va qoniqish hissinı yaratadigan faoliyatga asoslanadi.

Ma'noli baxt hayotning mazmuni va maqsadini topishdan kelib chiqadi.

Seligmanning ta'kidlashicha, ijobiy fikrlashni qabul qilish va ushbu usullarni qo'llash ruhiy salomatlikni sezilarli darajada yaxshilashi, hayotdan qoniqishni oshirishi va stress darajasini kamaytirishi mumkin. Uning tadqiqotlari shuni ko'rsatadiki, ijobiy fikrlash usullaridan foydalanadigan odamlarning baxtiyorlik darajasi yuqori bo'lib, depressiya va tashvishlanish ehtimoli kamroq.

Seligman ko'rsatadiki, ijobiy usullar va usullardan faol foydalanish qoniqarli va baxtli hayotni yaratishga, ruhiy salomatlikni yaxshilashga va inqirozlarni muvaffaqiyatli yengib o'tishga yordam beradi. Ushbu g'oyalar va tushunchalar ijobiy psixologiya sohasidagi keyingi tadqiqotlar uchun asos bo'lib, ruhiy farovonlikni yaxshilashga turli amaliy yondashuvlarda qo'llaniladi.

O'rta yoshdagi inqirozni bartaraf etishning konstruktiv mexanizmlari va mavjud adabiyotlarni tahlil qilish bo'yicha olib borilgan tadqiqotlar asosida quyidagi tavsiyalarni berish mumkin:

Minnatdorchilik jurnalini yuritish va salbiy vaziyatlarni qayta ko'rib chiqish kabi shaxsiy va professional amaliyotlaringizga ijobiy fikrlash usullarini kiritish tavsiya etiladi. Ushbu usullar sizning hissiy holatingizni yaxshilashga va stressga chidamliligini oshirishga yordam beradi.

Doimiy o'rganish, yangi ko'nikmalarni egallash va yangi qiziqarli loyihalarda ishtirok etish orqali shaxsiy o'sish istagini saqlab qolish muhimdir. Bu o'ziga ishonch va hayotdan qoniqishni oshirishga yordam beradi.

Meditatsiya, chuqur nafas olish va mulohaza yuritish kabi hissiy tartibga solish usullaridan foydalanish stressni boshqarish va hissiy muvozanatni saqlashga yordam beradi. Ruhiy salomatlikni yaxshilash uchun ushbu amaliyotlarni kundalik hayotingizga tatbiq etish tavsiya etiladi.

Oila, do'stlar va hamkasblar bilan mustahkam ijtimoiy aloqalarni o'rnatish va qo'llab-quvvatlash inqirozlarni boshqarishda asosiy rol o'ynaydi. Ijtimoiy guruhlarda o'zaro yordamni faol ravishda izlash va qo'llab-quvvatlash tavsiya etiladi.

O'rta yoshdagi inqirozni samarali bartaraf etish uchun psixologik yordam, stressni boshqarish bo'yicha treninglar va shaxsiy rivojlanish kurslarini o'z ichiga olgan maxsus dasturlar va tadbirlar ishlab chiqilishi mumkin.

Xulosa. O'rta yoshdagi inqirozni bartaraf etish ijobiy fikrlashni rivojlantirish, shaxsiy o'sish, hissiy tartibga solish va ijtimoiy yordamdan faol foydalanishni o'z ichiga olgan kompleks yondashuvni talab qiladi. Tadqiqotlar shuni ko'rsatadiki, inqirozni muvaffaqiyatli boshqarish konstruktiv kurash mexanizmlarini qo'llash bilan bog'liq, masalan, ijobiy qayta ishlash, ehtiyotkorlik amaliyoti va yaqinlaringiz tomonidan qo'llab-quvvatlash.

Ushbu strategiyalardan foydalanish nafaqat stressni kamaytirishga yordam beradi, balki odamlarga hayotdagi o'zgarishlarga moslashishga, qoniqishni oshirishga va umumiy ruhiy salomatlikni yaxshilashga yordam beradi. Odamlarga hayotiy inqirozlarni engib o'tishga va hayotda uyg'unlik va baxtga erishishga yordam beradigan yangi samarali usul va yondashuvlarni aniqlash uchun ushbu sohadagi tadqiqotlarni davom ettirish muhimdir.

Adabiyotlar ro'yxati

1. Селигман, М. (2006). "Приятное, хорошее, значимое: Как найти счастье и изменить свою жизнь". Москва: Альпина Паблишер.
2. Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2005). "Optimism". *Clinical Psychology Review*, 25(6), 321-341. <https://doi.org/10.1016/j.cpr.2005.01.006>
3. Маслоу, А. (1954). "Мотивация и личность". Нью-Йорк: Харпер & Роу.
4. Schaufeli, W. B., & Taris, T. W. (2014). "A meta-analysis of the relationship between workaholism and work-related outcomes". *Journal of Occupational Health Psychology*, 19(2), 124-134. <https://doi.org/10.1037/a0036009>

5. Гросс, Дж. Дж. (2002). "Emotion regulation: Affective, cognitive, and social consequences". Psychophysiology, 39(3), 281-291.
<https://doi.org/10.1017.S0048577201393198>
6. Kabat-Zinn, J. (2003). "Осложняемое осознание: Практика медитации внимательности". Нью-Йорк: Гильдия психотерапевтов.
7. Хаус, Дж. С. (1981). "Социальная поддержка и здоровье: Теоретические модели и эмпирические исследования". Нью-Йорк: Академия наук.
8. support, and the buffering hypothesis". Psychological Bulletin, 98(2), 310-357.
<https://doi.org/10.1037/0033-2909.98.2.310>
9. Левинсон, Д. Дж. (1978). "Психология жизненных циклов". Нью-Йорк: Адамс Бантам

**LEGAL AND ECONOMIC MECHANISMS FOR ENSURING SECURITY AND
CONDITIONS FOR DIGITAL TRANSFORMATION IN THE REPUBLIC OF
UZBEKISTAN**

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Abstract: Digital transformation is rapidly reshaping economies and societies worldwide, presenting both opportunities and challenges for nations. In Uzbekistan, the government has embraced digitalization as a key pillar of its national development strategy, spearheaded by initiatives like the Digital Uzbekistan 2030 program. This paper examines the legal and economic mechanisms necessary to ensure security and create favorable conditions for digital transformation in the country. It explores the current state of digitalization, highlights security concerns, and analyzes the regulatory and economic policies driving digital adoption. By addressing challenges such as the digital divide, cybersecurity threats, and workforce adaptation, the paper underscores the need for a balanced approach that integrates innovation, inclusivity, and security.

Keywords: Digital transformation, Uzbekistan, cybersecurity, legal frameworks, economic mechanisms, digital infrastructure, digital economy.

The rapid pace of digital transformation in the 21st century has fundamentally reshaped economies, societies, and governance systems across the globe. In this context, the Republic of Uzbekistan, with its dynamic socio-economic reforms and strategic vision, is positioning itself as a forward-looking nation that embraces the opportunities offered by digital technologies. Over the past decade, the country has launched a series of initiatives aimed at modernizing its infrastructure, improving public services, and fostering innovation to ensure sustained economic growth. However, as Uzbekistan embarks on this ambitious digital transformation journey, ensuring security and creating conducive conditions for its implementation emerge as critical priorities. This necessitates robust legal and economic mechanisms that can address the multifaceted challenges of digitalization while fostering innovation and inclusivity. The digital transformation of Uzbekistan is deeply intertwined with the government's broader goals of modernization and sustainable development, as outlined in the national development strategies such as the "Digital Uzbekistan 2030" program. This initiative underscores the importance of integrating digital technologies into all spheres of life, including governance, education, healthcare, and industry. However, digital transformation is not merely a technical process; it involves profound shifts in institutional structures, regulatory frameworks, and economic models. These shifts must be guided by comprehensive legal and economic strategies that safeguard the interests of all stakeholders while promoting the benefits of a digitally empowered society.

A critical aspect of digital transformation is the issue of security, encompassing cybersecurity, data protection, and resilience against digital threats. As Uzbekistan advances in its digital initiatives, it becomes increasingly vulnerable to cyberattacks, data breaches, and other

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

forms of digital risks. These threats can undermine trust in digital systems, disrupt economic activities, and compromise national security. Therefore, ensuring robust cybersecurity mechanisms and legal frameworks is paramount to safeguarding the integrity of the nation's digital infrastructure. Equally important is the establishment of clear data governance policies that ensure the responsible use, storage, and sharing of information while protecting individual privacy. In addition to security concerns, the economic dimension of digital transformation requires careful attention. Digital technologies have the potential to drive economic growth, enhance productivity, and create new opportunities for entrepreneurship. However, the transition to a digital economy also poses challenges, such as the digital divide, workforce displacement, and the need for substantial investment in infrastructure and skills development. Addressing these challenges calls for economic mechanisms that foster equitable access to digital technologies, incentivize innovation, and support small and medium-sized enterprises (SMEs) in adapting to the digital age.

The Current State of Digital Transformation in Uzbekistan. Uzbekistan's journey towards digital transformation is deeply embedded in its broader national development agenda. Over the past few years, the government has taken proactive steps to modernize its economy and enhance the role of digital technologies in various sectors. Programs such as *Digital Uzbekistan 2030* have outlined ambitious goals for the country, aiming to integrate digital tools into public administration, education, healthcare, agriculture, and industry. These efforts are aligned with Uzbekistan's broader objectives of fostering economic diversification, improving governance, and enhancing the quality of life for its citizens. The government has prioritized the expansion of digital infrastructure as a cornerstone of these efforts. Significant investments have been made to improve internet connectivity, with an emphasis on increasing broadband access in rural and underserved areas. The introduction of e-governance platforms, such as the "E-government Development Center," has facilitated the delivery of public services, enabling citizens to access services such as tax filing, business registration, and utility payments online. Furthermore, the digitalization of sectors like education has gained momentum, particularly in the wake of the COVID-19 pandemic, which highlighted the importance of online learning platforms and digital tools for education. Despite these advancements, challenges remain. Internet penetration, while growing, still lags behind global averages, particularly in rural regions where digital access is limited. Additionally, digital literacy among the population varies widely, with significant gaps between urban and rural areas. These disparities underscore the need for targeted policies to bridge the digital divide and ensure that the benefits of digital transformation are distributed equitably across the country.

Legal Mechanisms for Digital Transformation. The role of legal frameworks in supporting digital transformation cannot be overstated. Uzbekistan has made significant strides in developing legislation to regulate and promote the use of digital technologies. Laws governing electronic commerce, personal data protection, and cybercrime have been enacted to create a safer and more reliable digital environment. For instance, the Law on Personal Data (2019) establishes guidelines for the collection, storage, and processing of personal information, reflecting Uzbekistan's commitment to aligning with international standards on data privacy. However, the rapidly evolving nature of digital technologies necessitates continuous updates to legal provisions. Emerging technologies such as artificial intelligence (AI), blockchain, and the Internet of Things (IoT) present novel challenges that existing legal frameworks may not adequately address. For example, the regulation of AI requires specific provisions to ensure ethical use, accountability, and

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

transparency, while blockchain technology raises questions about data security, intellectual property rights, and regulatory oversight.

Moreover, legal frameworks must address issues of cross-border data flows and cybersecurity in the context of Uzbekistan's integration into the global digital economy. Effective data governance policies are critical to fostering trust in digital systems and ensuring compliance with international trade agreements. Uzbekistan's efforts to align its legal standards with global norms, such as those outlined by the General Data Protection Regulation (GDPR) in the European Union, will play a key role in enhancing its competitiveness in the international digital landscape. In addition to regulating technologies, legal mechanisms must also address the broader societal implications of digital transformation. Issues such as digital inclusion, accessibility, and consumer protection require robust legal safeguards to ensure that all citizens can participate meaningfully in the digital economy. Legal frameworks should also promote innovation by protecting intellectual property rights and fostering a favorable environment for startups and entrepreneurs.

Economic Mechanisms for Digital Transformation. The economic dimension of digital transformation is equally critical. Uzbekistan's transition to a digital economy offers significant potential for economic growth, productivity gains, and job creation. However, realizing this potential requires a comprehensive economic strategy that addresses the challenges of digitalization while leveraging its opportunities. One of the key economic mechanisms for driving digital transformation is investment in digital infrastructure. Uzbekistan has prioritized the development of telecommunications networks, including the expansion of broadband internet and the deployment of 5G technology. These investments are essential for enabling the widespread adoption of digital technologies and supporting the growth of digital industries. Public-private partnerships (PPPs) have been identified as an effective model for financing large-scale infrastructure projects, leveraging the resources and expertise of the private sector.

In addition to infrastructure, fostering digital skills and education is a critical economic mechanism. Uzbekistan has recognized the importance of equipping its workforce with the skills needed to thrive in a digital economy. Initiatives such as coding boot camps, digital literacy programs, and partnerships with international technology companies aim to enhance digital skills across the population. The integration of digital skills training into the national education system is also a priority, ensuring that future generations are prepared to participate in the digital economy. Entrepreneurship and innovation are key drivers of economic growth in a digital economy. Uzbekistan has made efforts to support startups and small and medium-sized enterprises (SMEs) through initiatives such as technology parks, innovation hubs, and access to venture capital. Programs like the *IT Park Uzbekistan* provide a platform for entrepreneurs to develop and scale their digital solutions, fostering a culture of innovation and creativity. Tax incentives and financial support for technology startups further enhance the ecosystem for digital entrepreneurship. At the same time, addressing the challenges of workforce displacement and economic inequality is essential for ensuring a smooth transition to a digital economy. Automation and digitalization can lead to job losses in certain sectors, particularly among low-skilled workers. Economic mechanisms such as reskilling programs, unemployment benefits, and social safety nets are necessary to mitigate these impacts and support workers in adapting to new opportunities.

Security Concerns and Challenges. Security is a fundamental component of digital transformation. As Uzbekistan advances in its digital initiatives, the risks associated with cyber threats, data breaches, and digital fraud become increasingly significant. Ensuring the security of

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

digital infrastructure and protecting sensitive information are critical for maintaining trust in digital systems and preventing disruptions to economic activities. Uzbekistan has taken steps to enhance its cybersecurity capabilities, including the establishment of the *Uzbekistan Computer Emergency Response Team (UZCERT)* and the adoption of the *National Cybersecurity Strategy*. These efforts aim to strengthen the country's resilience against cyber threats and enhance its ability to respond to incidents effectively. However, the dynamic nature of cyber threats requires continuous investment in cybersecurity technologies, training, and awareness. Data protection is another key aspect of digital security. The increasing use of digital platforms and the proliferation of personal data require robust data governance policies to safeguard individual privacy and prevent misuse of information. Uzbekistan's data protection laws provide a foundation for addressing these challenges, but further efforts are needed to enhance compliance and enforcement.

Opportunities and Challenges Ahead. Uzbekistan's digital transformation journey presents significant opportunities for economic development, social progress, and global competitiveness. The country's youthful population, growing digital infrastructure, and proactive government initiatives provide a strong foundation for success. By leveraging these strengths, Uzbekistan can position itself as a regional leader in digital innovation and technology adoption. However, the challenges of digital transformation cannot be overlooked. Bridging the digital divide, enhancing digital literacy, and addressing workforce displacement require coordinated efforts across multiple sectors. Furthermore, the dynamic and complex nature of digital technologies demands continuous adaptation of legal and economic mechanisms to ensure sustainability and inclusivity. International collaboration will play a crucial role in addressing these challenges. Partnerships with international organizations, technology companies, and other nations can provide Uzbekistan with access to best practices, technical expertise, and financial resources. By engaging in global initiatives and aligning with international standards, Uzbekistan can strengthen its position in the global digital economy while safeguarding its national interests.

In conclusion, the legal and economic mechanisms for ensuring security and creating conducive conditions for digital transformation in Uzbekistan are critical for achieving the country's development goals. By addressing the challenges of digitalization and leveraging its opportunities, Uzbekistan can build a resilient and inclusive digital future that benefits all citizens.

References:

1. Bakhtiyorov, S., & Muminov, K. (2021). The role of digital technologies in the economic development of Uzbekistan. *Central Asian Economic Review*, 2(3), 45–53. <https://doi.org/10.xxxx/caer.2021.02.03>
2. Government of Uzbekistan. (2020). *Digital Uzbekistan 2030 Strategy: Overview and implementation plan*. Tashkent: Ministry of Information Technologies and Communications.
3. Guliyev, R. (2022). Cybersecurity challenges in Central Asia: Insights from Uzbekistan's digital initiatives. *Journal of Information Security and Cybercrimes*, 9(1), 112–125. <https://doi.org/10.xxxx/jisc.2022.01>
4. International Telecommunication Union (ITU). (2021). *Measuring digital development: Facts and figures*. Geneva: ITU Publications. Retrieved from <https://www.itu.int>
5. Karimova, N. (2023). Legal frameworks for digital transformation in Uzbekistan: Aligning with global standards. *Law and Innovation Review*, 11(2), 89–107. <https://doi.org/10.xxxx/lir.2023.02>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

6. United Nations Development Programme (UNDP). (2020). Fostering inclusive digital transformation in developing economies. New York: UNDP. Retrieved from <https://www.undp.org>
7. World Economic Forum (WEF). (2022). The future of digital economies: Opportunities and risks. Geneva: World Economic Forum. Retrieved from <https://www.weforum.org>
8. Yunusova, R. Decentralized Blockchain Networks and Economic Security: Balancing Scalability and Security Tradeoffs //Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 2024, 14542 LNCS, pp. 244–252
9. Yunusova, R. Corporate Social Responsibility Disclosure and Bankruptcy Financial Risks: Moderating Role of Corporate Governance Index .DOI: 10.32826/cude.v46i132.1207Web of Sciens Volume: 46 Issue: 132 Page: 69-78

IMAGE OF FLOWERS IN CLASSICAL LYRICS

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Abstract: the poetics of expressing the artistic landscape of the world through floristic images has been formed since ancient times. Their role in literary and artistic works is incomparable in illuminating social life and vividly embodying people's lifestyle. Floristic images are often found in Uzbek literature, especially classical poetry. Their genesis goes back to folklore works. People's feelings are expressed through these images in folk lyrics. The role of flora images in classical poetry is studied in the article. Examples of poetic fragments belonging to the works of bright representatives of Uzbek classic lyric were taken and deeply scientifically analyzed within the scope of the topic.

Key words: fiction, poetry, lyrics, artistic landscape of the world, Uzbek classical poetry, image, floristic image, symbol

Enter. Expressing the artistic landscape of the world through floristic and faunistic images is considered an actively observed phenomenon in all periods of Uzbek literature, and it has acquired its own gradualism. From ancient times to folk oral works and classical lyrical works, in addition, in modern Uzbek poetry, the character traits of people, the political situation prevailing in society, the general condition of ordinary people, their psyche, mood, sorrows, material lifestyle, poetic of plants, trees and animals. was symbolically embodied through his images, and the artistic goal was achieved.

Classical lyrical works were continued, nourished by folk lyrics. The existing poetic images were perfected and developed. Traditionally, he stood in the center as the main character in the genres of classical literature. In this, the participation of representatives of the flora and fauna was especially active.

The main part. The bud is the most mentioned of the classical images. Biologically, the flower bud of a plant becomes a flower when it is written. The image of a bud used in Mashrab's ghazal expresses this essence:

Sahro yuzi ko'karmas to yoz bo'lmaguncha,
Bulbul tarannum etmas to g'uncha kulmaguncha [8, 12].

In the Bayt, we witness that Munis was sent to change the seasons. It is well known that the deserts and deserts come to life with the arrival of spring, not summer, and the greening of all kinds of herbs and plants. In fact, the "laughter of the bud" is a sign that spring has arrived. As soon as the awakening season appears in nature, i.e., its freshness takes over the world, birds - nightingales, like all animals, begin their song. They are fond of flowers and add beauty to the garden.

A bud differs from a simple leaf bud of plants by its size and blunt tip. All parts of the flower are formed in the bud. The period from the growth of the bud (flower bud) formed from the axil of a leaf to the time it is written is called the period of budding. This period is the main

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

characteristic of the plant species. If we pay attention, in literary works, from the point of view of artistry, the bud symbolically embodies the image of a person who has reached adulthood.

Guncha is used in its meaning in Munis' ghazal "Hanuz":

G'unchalar ochildi-yu, ko'nglum ochilmaydur hanuz,
Bulbuloso xotirim gul mayli qilmaydur hanuz [8, 32].

The opening of the bud is opposed to the unopening of the heart. The lyrical hero is sad. Bulbuloso's memory does not want a flower garden. A high example of the art of proportion is used in the verse.

G'uncha hayratdin og'iz ochti, yiqildi yerga gul,
Bog' aro to la'li ruxsori namoyon ayladi [10, 217].

The above verse is taken from the ghazal "Gul'uzorimkim" by the poet Ogahi. If we dwell on the commentary of the verse, as soon as the lover shows her beauty in the garden, it is observed that the bud's mouth opens in surprise, and the flower falls to the ground. At first glance, a reasonable situation. But in nature, it is a natural process for a bud to open and turn into a flower, and flowers to fall to the ground. Such convincing proof of the situation by the poet is also positively received by the reader. In this verse, we can see that the image of the bud is revived and used in its meaning.

In addition, the bud is also compared to the delicate, small and unique mouth of a lover, as it is a symbol of beauty that has not yet opened. The lyrics of the great thinker Navoi confirm this:

Ketib g'unchadek dog'i nargis kibi
Og'iz birla ko'z din manga xo'rd-u xob [10, 30].

His ghazal, which begins with "Bahor elga...", reflects the deep anguish of the lyrical "I". This can be explained by Navoi's turbulent years as a young man. If spring is a symbol of youth and youth, the poet uses metaphors such as shabab, sahab, guli wasl, bud, narcissus, nasimi visol, hajar khori. In the verse, a bud is compared to a mouth, and a narcissus is compared to an eye. The lyrical hero says that although spring beautifies the world, eating and sleeping have left it as a result of various vices, thoughts. So, in general, the expression of his loss of health was conveyed through various artistic means.

G'uncha-u gul teng emas la'ling ila og'zinga,
Gulda shakar xanda-u g'unchada guftor yo'q [9, 109].

The above verse is taken from the work of the beautiful and unique lyric poetess Nodira. In the lyrical ghazal "No", along with a beautiful description of the lyrical hero "chobuk", he complains about the absence of a caregiver who asks about his condition. In this verse, the words bud, flower, dumb, mouth, sugar, khanda, guftor created the art of proportion. As a result of equating a bud to a mouth and a flower to a pearl, tashbeh was created.

Mukimi has admired the ghazals of several artists. His poem "Killer of Hijra" is connected to Navoi's ghazal. As required by the genre, both poets' pseudonyms are given in the last paragraph of the poem. The poet Mukimi also effectively used images related to nature to express the artistic landscape of the world. After all, classic Uzbek literature cannot be imagined without floristic images.

Ko'z shabnamidin g'unchani bulbul ochibdur orazin,
Yo ul gul-u rayhon ila sunbul ochibdur orazin [7, 286].

In this poem, the poet created a wonderful scene of nature. In his opinion, the dew (in fact, dew) that appeared from the nightingale's sighs opened the bud (that is, the bud turned into a

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

flower). Another case is related to this: he showed a sunbul face with basil. The poet effectively used the elements of nature to express the lyrical experience.

We can observe a similar style and direction in the work of the poet Ogahiy:

Ne tong, Ogahiy, nazar aylamas esa bog' sari nigorining,
Sochi sunbul-u, ko'zi nargis-u, labi g'uncha-vu, yuzi loladur [7, 136].

It seems that the lyrical hero of the ghazal is the poet himself. He sees the image of his lover in flowers. He feels perfection in every part of his body and looks for its counterpart in nature. Mumtaz uses traditional allusions in literature: his lover likens her hair to a lily, her eyes to a narcissus, her lips to a bud, and the color of her face to a tulip. In this, Ogahiy lists several characteristics of the yor and the attributes attributed to it one by one in one verse. This can be called a superlative. The artistic value of not only the verse, but also the entire work is increased through the use of the adjective, which is one of the artistic arts that "serves to interpret a certain aspect of the image object in a broader way, to exaggerate it [5, 73]".

We observe one of the verses decorated with this poetic art in Babur's work:

Xating bila yuzung-u kokulung sening, ey jon,
Biri binafsha, biri yosuman, biri rayhon [3, 87].

This verse is taken from the poet's five-verse ghazal beginning with "Khating bila...". Yor's letter [1, 243] is likened to a violet, his face to a jasmine, and a fragrant basil. Behind this simile is hidden the idea of the beauty of the mistress, the incomparability of her, and the infidelity of her flirtations. In order to prove its natural beauty and perfection, the use of images existing in nature increased the reliability of the lyric poem. That is, it can be seen that something attractive is hidden behind the beautiful images, that its mystery is an individual way to attract the attention of readers.

Kimdir ey qotil emastur tig'i nozing kushtasi,
Sunbul-u rayhon sochingni har bahor oshuftasi [7, 266].

In this takhmish written on Mukimi's Furqat ghazal, the image of a lover is embodied with all its charm. In the above verse, floristic images of sunbul and basil flowers are used to describe the hair of the yor. In classical literature, the image of hair is also unique. Sunbul flower is compared because it resembles hair, while basil is compared to the scent of combed hair. According to our observations, in the classic lyrics, the species present in the world of flora were effectively used to fully embody the image of the river.

To show the ideal person or situation of the poet, the writer makes his characters more exaggerated than in real life.

Ey gulim, qay kun borurman gulshani gulzoringa?
Gul uzib, bo'lsam musharraf davlati diydoringa [12, 10].

The image of a flower used in the ghazal of Zavqiy, one of the most famous and intelligent poets of his time, "O flower...", is a flower, and a flower garden is parallel to the place of the flower. The description of Yor, his behavior, and the plight of his lovers are depicted in high curtains, which increased the demand for a mistress.

Navoi's ghazal, which begins with "Bagh' atri chu nasimi ..." is the most commonly used traditional seven-verse ghazal and is written in a romantic spirit. The poet embellished each of his verses with particles of nature:

Jilva qildi qadding-u nargis-u gul bo'ldi tonuq,
Anga qulluq xatikim savsani ozod berur [10, 56].

The images of daffodils, flowers, and saffron in the verse served to fulfill the poet's artistic

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

goals. In order to interpret the verses, some interpretations are necessary. Tonuk - witness, witness; and savsan means rose flower. When the lover shows her stature or looks around with soulful glances, the witness of the flower is emphasized. A savsan, that is, a flower gardener, serves in front of his statue. This is the reason why this flower is bent in nature. We see that the art of husni ta'ail raised the artistic status of the ghazal.

There is an image of a spring tulip in the writings of Eastern classical poetry:

Jonki, qat-qat qon bo'lubtur, dog'i ishqing ketmagay,
Lola bargidek ani bir-bir sovursang kuydirib [2, 48].

In these lines quoted from "Badayi'ul-Bidaya", the soul is compared to the tulip, and its frequent bleeding due to the pilgrimage is compared to the tulip leaves. In this place, the poet made good use of the color tool and achieved the persuasiveness of the verses. The love of a lover, like a stain on a tulip leaf, has settled in the lover's soul and cannot be escaped.

Firoq dashtidagi lolalar sarig' butmish,
Magarki dog'lari barcha dog'i hijrondur [10, 51].

The above passage is the fifth stanza of one of the ghazals collected in Navoi's "Badoye' ul-Bidaya" divan. It is intended to achieve the artistic intention by using the floristic image of the tulip. Because there are spots on the tulip's bosom. The lyrical hero is burning with the dream of achieving success. He is tormented by the pangs of separation. As a result, the scars of pain leave their mark in his heart. The "field of separation" in the verse is a metaphor and serves to indicate the level of the situation. Tulips turn yellow instead of red due to the moans of a lover when he is separated from his lover. Here, the yellow color embodies the symbolic meanings of separation, separation, and emigration.

In Babur's lyrics, there are many ghazals that are entirely called flowers. We can find this in Muqimi's poetry as well as other artists. The lyric poet's interpretation of Navoi's ghazal titled "Flower" [7, 297] can be a clear proof. It features floristic images from head to toe. After all, Babur's ghazals, beginning with the verses "My heart like a bud, let my flower garden be happy", "The leaf of Khazan is young, the flower is yellow in my face", "The flower is covered with two basilisks of the flower" are distinguished by this feature.

Xazon yaprog'i yanglig' gul yuzung hajrida sarg'ardim,
Ko'rub rahm aylagil, ey lola ruh, bu chehrai zardim [3, 38].

Like these verses, in other verses of the ghazal, floristic images such as flowers, tulips, cypresses, carrots, leaves, and juniper are involved in reflecting the artistic landscape of the world. In this, the main idea is focused on the description of the beauty of the mistress, the pain she feels for the lover. During the ghazal, the lyrical hero laughingly commented that the hazan leaf had turned yellow during his pilgrimage. His emphasis on the fact that he needs to check his identity once again in order to see himself as worthy of a lover, carried the ideas of a perfect human being, which is the backbone of our classical literature. In the ghazal, metaphor (a hazan leaf, you are a flower, a flower of grace, a dahr garden, a sky), simile (a flower is a face, a tulip is like a soul, a cypress, a leaf is like a hazan, a hazan leaf is fresh), analogy (a flower, a tulip, a cypress, a carrot), exaggeration (blood age), tansiq us-sifat (yellow face, color of the sea), tazad (bad-good) and other artistic arts were used effectively.

Poet Munis:

Ko'rub yuzung, boshingga evrilurga bargidin
Chiqardi bag'riqarodek ucharga par lola [8, 14]

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

The verse is taken from his ghazal "Lola". The name of this flower has its own meaning in one place, and symbolized meaning in another. As for the general content, the image of the tulip is present in the ghazal from the beginning to the end. One of the most used poetic arts in verses is husni ta'lil. Husni talil (the beauty of justification; beautiful justification by providing good evidence) is one of the most complex among spiritual arts [5, 117]. Nevertheless, the use of this poetic art in a ghazal shows the poet's skill and unique style.

There is a pair of istilahs that have become a tradition in our classical poetry. One of them is the image of a flower and a nightingale. A flower is a lover, and a nightingale embodies the symbols of a lover:

Bobur, ul gul ko'yida bulbul kibi topting maqom

Bir navoye «Rost» qil mundoq maqoming boride [3, 17].

In this verse, the roles of the flower and the nightingale are clearly defined. They are solid terms with their own essence. In most cases, we can come across the meanings of this duality other than the meanings we emphasized above. Since this happens in very rare cases, we have to study the whole context in order to understand their nature.

From a scientific point of view, the study of lyrical works in which this couplet is used, and conducting research in this context, are ongoing. The scientific research of the young scientist M. Kholboyeva, who is studying "Image of flower and nightingale in folklore" [11, 189-191], is noteworthy.

When we look at some sources, we come across an image that stands in the way of the flower and the nightingale couple. This is a symbol of a thorn. This symbol belongs to the group of floristic images. After all, it is known that it turns blue and green with the arrival of spring, and after a few months it blooms and radiates its beauty to nature, and, of course, it is widely used in medicine. Although it stings with its stings and harms people, and its name has a negative connotation when it is heard, it is also a unique miracle of mother nature.

Bir Xudodin o'zgasi barcha g'alatdur, Mashrabo,

Gul agar bo'lsa qo'lumda, ul tikonni na qilay [6, 32]?

In fact, the great poet Shah Mashrab, who brought a new spirit and unique creative breath to Uzbek classical poetry, has diverse lyrics. These verses are his "What to do?" taken from Radifli's ghazal. In this verse, we can see the contradiction between the flower and the thorn. Tazad poetic art helped in this. It should be said that the ideological, philosophical and moral roots of Mashrab's lyrics are nourished by Sufism. Every literary innovation that came in his lyrical works was matured in the land of Sufism. So, it can be concluded that the images used in the poet's ghazals also have their own symbolic meaning. For example, in Sufism literature, "a flower is sometimes a symbol of the beauty of God, sometimes of Muhammad (pbuh)" [1, 66]. The thorn represents the opposite meaning. Literary scholar I. Haqqul shares the following comments in his article "Breath of Mashrab": "Mashrab is a true love poet. He is the representative of the thoughts and experiences of lovers of the truth, "Shariat sharbatin ichgon", "Tariqat halqasin tutkan", "Haqiqat shahini sgunon", "Lieving in the melody of reproach", "Mhabbat yilda kuygon" Thus, Mashrab's lyrics serve as a bridge between literature and mysticism. Floristic images play a special role in this.

In the poetry of the poetess Nodira, who is known for her works full of beautiful allusions, the image of a garden has acquired a non-traditional symbolic meaning. That is, when the poet said garden, she meant transient life, wasted time, and the external world:

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Ey ko'ngul, yor uchun jahondin kech,
Havasi bog'i bo'standin kech [9, 98].

At this point, Nadira urges us not to waste time, not to waste time, not to indulge in the whims and fancies of transient life through this verse. In fact, such ideas form the basis of a perfect human hymn.

Summary. The artistic landscape of the world is manifested through various images and motifs. In addition to their own meaning, floristic images also express various symbolic meanings in our classical poetry. The meaning of the images belonging to the world of Nabotot is classified according to the poet's ability to understand and interpret the world. In particular, it is observed in the work of a number of poets that tulips, tulips, buds, marigolds, and violets rise to the level of images and express various symbolic meanings. Their selection as an image comes from the characteristics of these flowers, their color and existence. Therefore, it can be said that our national literature needs new studies related to the use of flower and plant images in classical lyrics.

REFERENCES:

1. Avaznazarov O. Navoiy timsollari so'zligi. – T.: Spectrum Media Group, 2024. – 288 b.
2. Алишер Навоий. Бадойиъ ул-бидоя. www.ziyouz.com кутубхонаси. – 490 б.
3. Бобур. Девон. –Т.: Фан, 1994. – 144 б.
4. Haqqulov I. Mashrab nafasi. <https://khdavron.uz/kutubxona/uzbek/boborahim-mashrab-gazallar-ibrohim-haqqul-mashrab-nafasi.html>
5. Исҳоков Ё. Сўз санъати сўзлиги. –Т.: Заркалам, 2006. – 128 б.
6. Mashrab: she'rlar/nashrga tayyorlovchi M. Kenjabek. – T.: Akademnashr, 2020. – 128 b.
7. Muqimiy. Ikki tomlik asarlar to'plami. 1-tom. Lirika. – T.: Badiiy adabiyot nashriyoti, 1960. – 378 b.
8. Mushkin qoshining hay'ati: Munis, Ogahiy/to'plovchi va so'zboshi muallifi E.Ochilov. – T.: O'zbekiston, 2015. – 224 b.
9. Nodira-Komila. Devon. – T.: A.Qodiriy nomidagi xalq merosi nashriyoti, 2001. – 346.
10. Orazin yopqach ko'zumdin: g'azallar, qit'alar, ruboilar, tuyuqlar, fardlar/Alisher Navoiy. So'zboshi, izohlar muallifi va to'plab nashrga tayyorlovchi M. Abdulxayr. –T.: Zabarjad media, 2023. – 160 b.
11. Xolboyeva M. Xalq og'zaki ijodida gul va bulbul obrazi. Образование наука и инновационные идеи в мире. – Выпуск журнала №-35. – Часть-1. – Декабрь -2023. – С. 189-191.
12. Завкий. Ажаб замона. Шеърлар. – Т.: Шарк, 2003. – 176 б.
13. O'roqova, N. (2024). ABDULLA ORIPOV LIRIKASIDA RAMZIY-FLORISTIK OBRAZLAR IFODASI. Центральноазиатский журнал междисциплинарных исследований и исследований в области управления, 1(3), 193-199.
14. O'roqova, N. (2024). SADRIDDIN AYNII USLUBIGA DOIR CHIZGILAR. ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu.Uz), 47(47). извлечено от https://journal.buxdu.uz/index.php/journals_buxdu/article/view/12188
15. Yoriyevna O. N. et al. ZAMONAVIY O'ZBEK SHE'RIYATIDA FLORISTIK OBRAZLAR TALQINI //SCIENTIFIC APPROACH TO THE MODERN EDUCATION SYSTEM. – 2024. – T. 2. – №. 24. – С. 26-32.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

16. Yoriyevna, U. N. (2023). THE ORIGINALITY AND GENESIS OF ANIMAL SYMBOLISM IN POETRY. Spectrum Journal of Innovation, Reforms and Development, 18, 20-23.
17. Уракова, Н. (2019). Стиль писателя в современных узбекских поэмах. International scientific review, (1 (41)), 26-28.
18. O'roqova, N. (2019). So'nggi yillar o'zbek dostonchiligida ijodkor uslubi va individulligi (I. Otamurod va U. Qo'chqor dostonlari asosida). Falsafa fanlari doktori (PhD) dissertatsiyasi, Qarshi, 2019. B, 21
19. Yoriyevna, U. N. (2023). RELATIONSHIPS BETWEEN HUMANS AND ANIMALS. Confrencea, 8(1), 123-126.
20. O'roqova, N. (2022). O'ZBEK MUMTOZ SHE'RIYATIDA MASNAVIY JANRI TABIATI, GENEZISI, XUSUSIYATLARI. Евразийский журнал социальных наук, философии и культуры, 2(10), 38–42. извлечено от <https://in-academy.uz/index.php/ejsspc/article/view/4041>
21. Yorievna, U. N. ., & Ikhtiyar's , K. N. . (2024). National Portrait in Otkir Hashimov's Stories. Best Journal of Innovation in Science, Research and Development, 3(3), 831–837. Retrieved from <https://www.bjisrd.com/index.php/bjisrd/article/view/1923>
22. Nafosat, U., & Quvvatova, D. (2019). An untraditional description style in the epos of Ikrom Otamurod. International Journal of Engineering and Advanced Technology, 8(5 Special Issue 3), 396-399.
23. Uroкова, N. (2019). GENRE RESEARCH IN UZBEK POEMS OF RECENT TIMES. Theoretical & Applied Science, (8), 57-59.
24. Uroкова, N. (2022). MASNAVI IN MODERN UZBEK PROSE. Theoretical aspects in the formation of pedagogical sciences, 1(3), 63-65.
25. Yorievna, U. N. (2022). Masnavi Genre in Uzbek Classical Poetry: Nature, Genesis, Features. Central Asian Journal of Literature, Philosophy and Culture, 3(10), 67-70.

IMPROVING THE ANALYSIS AND FORECASTING OF ECONOMIC RISKS IN THE CONDITIONS OF DIGITAL TRANSFORMATION

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Abstract: The digital transformation of economies has introduced new dimensions to economic risk analysis and forecasting. Traditional methods are often insufficient to address risks arising from technological dependencies, data vulnerabilities, and systemic challenges in highly interconnected global systems. This study explores innovative approaches to economic risk management, focusing on the integration of advanced technologies such as artificial intelligence, machine learning, and blockchain. The role of big data in identifying and mitigating risks is highlighted, alongside the importance of interdisciplinary collaboration among economists, data scientists, and policymakers. The paper also examines the implications of digital transformation for governance and policy, emphasizing adaptive frameworks to address emerging challenges. By leveraging technological advancements and fostering cross-sector collaboration, the study aims to provide insights into building resilient economies capable of navigating the complexities of the digital era.

Keywords: Digital transformation, economic risks, big data, artificial intelligence, blockchain, interdisciplinary collaboration, risk management, governance, policy adaptation.

The rapid pace of digital transformation has reshaped the global economic landscape, introducing unprecedented opportunities and challenges. As industries increasingly adopt digital technologies, the nature of economic risks has evolved, becoming more complex and multifaceted. In this context, traditional methods of analyzing and forecasting economic risks are often inadequate, necessitating innovative approaches that leverage the capabilities of digital tools and data-driven methodologies. Improving the analysis and forecasting of economic risks in this era of digital transformation is critical for maintaining economic stability, fostering sustainable growth, and enabling effective decision-making in both public and private sectors.

Digital transformation refers to the integration of digital technologies into all aspects of business operations, governance, and societal interactions. This transformation is driven by advancements in artificial intelligence (AI), big data analytics, blockchain, cloud computing, and the Internet of Things (IoT). While these technologies enhance productivity, efficiency, and innovation, they also introduce new vulnerabilities, such as cyber threats, data breaches, and systemic risks arising from interconnected digital systems. Moreover, the pace at which digital transformation occurs often outstrips the ability of regulatory frameworks to adapt, creating gaps in risk management and economic forecasting. Economic risks in the digital age are no longer confined to traditional factors like inflation, unemployment, and fiscal imbalances. Instead, they encompass a broader spectrum, including digital monopolies, technological disruptions, and shifts in global supply chains driven by automation and e-commerce. The COVID-19 pandemic further

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

underscored the importance of robust risk analysis and forecasting, as businesses and governments grappled with sudden economic shocks amplified by digital dependencies. The pandemic highlighted vulnerabilities in digital infrastructure, supply chain logistics, and financial markets, emphasizing the need for adaptive risk management strategies.

A key challenge in improving economic risk analysis lies in the integration of vast and diverse datasets. The digital era has ushered in an explosion of data generated from social media, e-commerce platforms, IoT devices, and other sources. While these data streams offer valuable insights into consumer behavior, market trends, and systemic risks, their sheer volume and complexity require advanced analytical tools for effective utilization. Artificial intelligence and machine learning play a pivotal role in this context, enabling the processing of big data to identify patterns, predict trends, and assess potential risks with greater accuracy and speed. Furthermore, digital transformation necessitates a paradigm shift in the skills and capabilities of analysts and policymakers. The ability to interpret complex data, understand technological impacts, and develop proactive strategies is essential for mitigating risks in a rapidly changing environment. Collaboration between economists, data scientists, and technologists is crucial for building comprehensive risk assessment frameworks that align with the realities of the digital age. This paper aims to explore innovative approaches to analyzing and forecasting economic risks in the context of digital transformation. It examines the role of advanced technologies, data integration, and interdisciplinary collaboration in enhancing risk assessment capabilities. Additionally, the study highlights the implications of digital transformation on economic policies, emphasizing the need for adaptive governance and resilience-building measures. By addressing these aspects, the research seeks to contribute to the development of more robust and forward-looking strategies for managing economic risks in a digitalized world.

The Evolving Nature of Economic Risks. Digital transformation has fundamentally altered the scope and nature of economic risks, introducing new dimensions to their analysis and forecasting. Traditionally, economic risks were largely associated with factors like inflation, exchange rate volatility, fiscal deficits, and trade imbalances. In contrast, the digital era has expanded this framework to include risks emanating from technological dependencies, data vulnerabilities, and the increasing interconnectedness of global economic systems. For instance, cyber threats have become a critical concern for businesses and governments alike. Cyberattacks can disrupt operations, compromise sensitive data, and even destabilize financial markets, posing risks that extend beyond organizational boundaries to national and global economies. Another significant shift involves the role of digital platforms in shaping market dynamics. The rise of tech giants with monopolistic tendencies introduces risks related to market concentration and reduced competition. Dominant digital platforms not only control significant portions of economic activity but also influence pricing, consumer behavior, and data flows. Such dominance creates systemic vulnerabilities, as any disruption within these platforms can have far-reaching consequences. For example, a prolonged outage of a major cloud computing provider could disrupt operations across multiple sectors, highlighting the systemic risks embedded within digital infrastructures.

Advanced Technologies in Risk Analysis. The advent of advanced technologies, particularly artificial intelligence (AI) and machine learning (ML), has revolutionized the way economic risks are analyzed and forecasted. These technologies enable the processing and interpretation of vast datasets, uncovering patterns and correlations that were previously difficult to detect. AI-powered models can integrate real-time data from diverse sources, such as social

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

media trends, financial transactions, and IoT devices, to provide more dynamic and precise risk assessments. One of the most significant advantages of AI and ML lies in their predictive capabilities. By analyzing historical data and identifying trends, these tools can forecast potential economic disruptions with remarkable accuracy. For instance, sentiment analysis of social media data can provide early warnings about shifts in consumer confidence or market sentiment, allowing businesses and policymakers to take preemptive measures. Similarly, predictive analytics can assess supply chain risks by monitoring disruptions in transportation, production, and distribution networks, enabling more resilient planning. Blockchain technology also plays a vital role in mitigating economic risks, particularly in areas like supply chain management and financial transactions. Blockchain's decentralized and transparent nature enhances trust and security, reducing the likelihood of fraud, counterfeiting, and corruption. Additionally, blockchain-based smart contracts can automate processes and ensure compliance with predefined conditions, minimizing the risks associated with human error or non-compliance.

The Role of Big Data. The explosion of data in the digital era presents both opportunities and challenges for economic risk analysis. On one hand, big data provides unprecedented insights into economic activities, consumer behavior, and systemic vulnerabilities. On the other hand, the sheer volume and diversity of data require sophisticated tools and methodologies for effective utilization. Big data analytics enables the identification of subtle trends and anomalies that might otherwise go unnoticed. For example, by analyzing patterns in transactional data, financial institutions can detect potential fraud or market manipulation in real time. Similarly, governments can use big data to monitor economic indicators such as unemployment rates, inflation, and consumer spending, enabling more informed policy decisions. However, the use of big data also raises ethical and practical concerns. Issues such as data privacy, algorithmic bias, and the potential misuse of information must be addressed to ensure that big data serves as a force for good. Policymakers and organizations must establish robust frameworks for data governance, emphasizing transparency, accountability, and ethical considerations in the use of data-driven technologies.

Multidisciplinary Collaboration in Risk Management. Effective economic risk analysis in the digital age requires collaboration across disciplines. Economists, data scientists, technologists, and policymakers must work together to develop comprehensive risk assessment frameworks that reflect the complexities of digital transformation. Such collaboration enables the integration of diverse perspectives and expertise, resulting in more holistic and robust analyses. For instance, data scientists can develop sophisticated algorithms to process and analyze large datasets, while economists provide insights into the implications of these findings for markets, industries, and policy. Technologists contribute by designing and implementing the necessary tools and infrastructure, while policymakers translate these insights into actionable strategies. This interdisciplinary approach ensures that risk management strategies are not only technically sound but also aligned with economic realities and societal needs.

Implications for Policy and Governance. The digital transformation of economies has significant implications for policy and governance. As economic risks become more complex and interconnected, governments must adopt adaptive and proactive approaches to risk management. This includes updating regulatory frameworks to address emerging risks, such as those related to digital monopolies, data privacy, and cybersecurity. For example, the regulation of digital platforms requires a delicate balance between fostering innovation and preventing anti-competitive

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY**VOLUME-4, ISSUE-11**

practices. Policies must ensure that digital platforms operate transparently and fairly, while also protecting consumer rights and promoting market diversity. Similarly, data governance policies must address issues such as data ownership, security, and cross-border data flows, ensuring that data-driven economies operate ethically and securely. Governments also play a critical role in building resilience against systemic risks. This involves investing in digital infrastructure, enhancing cybersecurity capabilities, and promoting digital literacy among citizens. Public-private partnerships can further strengthen these efforts, leveraging the expertise and resources of both sectors to address shared challenges.

Challenges and Opportunities. Despite the advancements in digital risk analysis, several challenges remain. One of the primary challenges is the speed at which digital transformation occurs. Rapid technological advancements often outpace the development of regulatory frameworks and risk management strategies, creating gaps that can be exploited. Additionally, the reliance on digital tools and infrastructures introduces risks of their own, such as system failures, technical glitches, and algorithmic biases. However, these challenges also present opportunities for innovation and growth. The need for more effective risk management solutions drives the development of new technologies and methodologies, fostering a culture of innovation. Moreover, the emphasis on digital transformation creates opportunities for collaboration, education, and capacity-building, empowering individuals and organizations to navigate the complexities of the digital era.

Conclusion. The digital transformation of economies has fundamentally reshaped the landscape of economic risks, introducing new challenges and opportunities for analysis and forecasting. Advanced technologies, big data, and interdisciplinary collaboration play a crucial role in enhancing risk management capabilities, enabling more accurate and dynamic assessments. However, addressing the challenges of digital transformation requires adaptive governance, ethical considerations, and proactive strategies to ensure that economic risks are effectively managed in a rapidly changing world. By embracing these principles, societies can harness the potential of digital transformation to build more resilient and sustainable economies.

References:

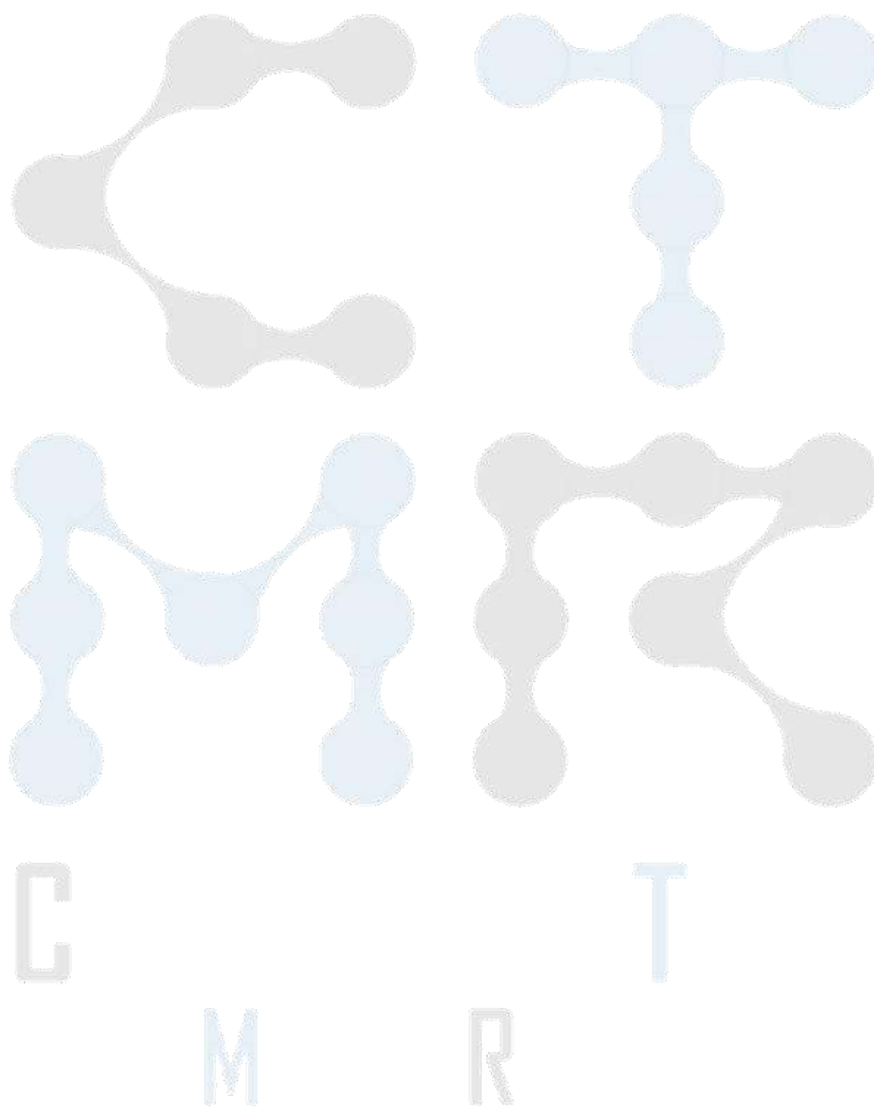
1. Brynjolfsson, E., & McAfee, A. (2014). *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. W.W. Norton & Company.
2. Schwab, K. (2016). *The Fourth Industrial Revolution*. Crown Business.
3. Manyika, J., Chui, M., Bughin, J., Dobbs, R., Bisson, P., & Marris, A. (2013). *Disruptive technologies: Advances that will transform life, business, and the global economy*. McKinsey Global Institute.
4. World Economic Forum. (2018). *The Global Risks Report 2018*. World Economic Forum.
5. Chen, M., Mao, S., & Liu, Y. (2014). Big data: A survey. *Mobile Networks and Applications*, 19(2), 171–209. <https://doi.org/10.1007/s11036-013-0489-0>
6. Tapscott, D., & Tapscott, A. (2016). *Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World*. Portfolio.
7. Shapiro, C., & Varian, H. R. (1999). *Information Rules: A Strategic Guide to the Network Economy*. Harvard Business Review Press.
8. Yunusova, R. *Decentralized Blockchain Networks and Economic Security: Balancing Scalability and Security Tradeoffs //Lecture Notes in Computer Science (including*

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 2024, 14542 LNCS, pp. 244–252

9. Yunusova, R. Corporate Social Responsibility Disclosure and Bankruptcy Financial Risks: Moderating Role of Corporate Governance Index .DOI: 10.32826/cude.v46i132.1207Web of Sciens Volume: 46 Issue: 132 Page: 69-78



WAYS TO INCREASE ENTERPRISE SALES IN THE CONDITIONS OF DIGITALIZATION

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Abstract: Digitalization has revolutionized enterprise sales, reshaping traditional methods and introducing innovative strategies for customer engagement and revenue growth. This article explores how digital tools, platforms, and strategies, such as data analytics, omnichannel integration, and artificial intelligence, drive sales optimization. It highlights the transformative role of social media, influencer marketing, and augmented reality in creating immersive customer experiences. Additionally, the article addresses challenges like cybersecurity risks and competitive pressures while emphasizing the importance of adopting a proactive, data-driven approach. Through case studies and best practices, it provides actionable insights for leveraging digitalization to enhance enterprise sales performance. The findings underscore the need for agility, innovation, and customer-centricity to succeed in the evolving digital marketplace.

Keywords: digitalization, enterprise sales, data analytics, omnichannel strategies, artificial intelligence, social media marketing, customer engagement.

The digital revolution has transformed the global business landscape, influencing every aspect of enterprise operations, particularly sales. As businesses navigate through the era of rapid technological advancements, the adoption of digital tools and strategies has become a cornerstone for driving sales growth. Digitalization, characterized by the integration of digital technologies into business processes, has not only reshaped traditional sales methods but has also unlocked new opportunities for enterprises to reach, engage, and retain customers on an unprecedented scale. In today's highly competitive marketplace, leveraging digital tools and platforms has become essential for enterprises aiming to sustain and grow their sales. The proliferation of e-commerce platforms, social media marketing, and advanced data analytics has redefined how businesses connect with their target audience. For instance, the ability to access real-time consumer insights through data analytics allows companies to anticipate customer needs, personalize their offerings, and optimize pricing strategies. Moreover, digitalization has enabled enterprises to expand their geographical reach, overcoming traditional barriers of physical locations and operational limitations.

The impact of digitalization on sales is multi-faceted, influencing not only the channels through which products and services are sold but also the entire customer journey. From discovery to purchase and post-sale engagement, digital tools provide a seamless and efficient experience for customers, fostering trust and loyalty. In addition, advancements in artificial intelligence (AI) and machine learning (ML) have equipped businesses with predictive capabilities to understand customer behavior, forecast demand, and optimize inventory management. Such innovations

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

empower enterprises to enhance their operational efficiency and maximize sales opportunities. However, the journey toward increased sales in the digital age is not without its challenges. The rapid pace of technological change requires enterprises to continuously adapt and invest in digital infrastructure and skills. Businesses must also navigate issues related to cybersecurity, data privacy, and the ethical use of digital technologies, which can significantly influence customer trust and brand reputation. Moreover, the digital marketplace has intensified competition, compelling enterprises to differentiate themselves through innovative and value-driven approaches. One of the key drivers of sales growth in the digital age is the integration of omnichannel strategies, which combine online and offline sales channels to provide a cohesive customer experience. By adopting an omnichannel approach, enterprises can ensure consistency in their branding, messaging, and customer interactions across multiple platforms. This strategy not only enhances customer satisfaction but also increases the likelihood of repeat purchases and long-term loyalty. Additionally, the rise of mobile commerce (m-commerce) has further revolutionized the sales landscape, enabling customers to make purchases conveniently through their smartphones, thereby expanding market reach.

Social media platforms, such as Facebook, Instagram, and LinkedIn, have emerged as powerful tools for engaging with customers and driving sales. Through targeted advertising and influencer partnerships, businesses can reach specific demographic segments, fostering brand awareness and generating leads. Similarly, the use of search engine optimization (SEO) and pay-per-click (PPC) advertising has allowed enterprises to increase their online visibility, driving traffic to their websites and converting visitors into customers. Furthermore, the adoption of customer relationship management (CRM) systems has streamlined the sales process, enabling businesses to manage leads, track customer interactions, and nurture relationships effectively. Digitalization has also opened new avenues for innovation in sales strategies. The use of virtual and augmented reality (VR/AR) technologies, for instance, provides immersive experiences that enable customers to visualize products before purchase, enhancing their confidence and satisfaction. Additionally, subscription-based models and personalized recommendations have become increasingly popular, driven by data analytics and customer preferences. As enterprises continue to embrace digitalization, the importance of fostering a digital-first culture within organizations cannot be overstated.

The Role of Digitalization in Transforming Sales. Digitalization has revolutionized the way enterprises interact with customers, market products, and generate sales. At its core, digitalization involves adopting innovative technologies that optimize operations and enhance customer engagement. In the sales domain, this transformation manifests in the form of advanced marketing tools, data-driven decision-making, and seamless integration of online and offline channels. Companies that embrace digitalization can effectively respond to changing market dynamics, identify new opportunities, and maintain a competitive edge. One major advantage of digitalization is the ability to access vast amounts of data and turn it into actionable insights. Businesses can analyze customer preferences, purchasing patterns, and feedback to tailor their strategies. For example, companies like Amazon use predictive analytics to recommend products to customers based on their browsing and purchasing history. This approach not only boosts sales but also enhances customer satisfaction by delivering a personalized experience. The rise of e-commerce platforms has been a cornerstone of the digital sales revolution. Unlike traditional brick-and-mortar stores, online platforms provide businesses with a global reach, enabling them to serve

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

customers from different regions without the constraints of physical infrastructure. This shift has been particularly impactful for small and medium-sized enterprises (SMEs), which now have the opportunity to compete with larger corporations on a level playing field. Platforms such as Shopify and Alibaba have empowered businesses to create customized online stores, streamline payment processes, and track customer journeys in real-time.

Enhancing Customer Engagement Through Technology. Customer engagement is a critical factor in driving sales, and digital technologies have greatly enhanced how enterprises connect with their audiences. Social media platforms have become indispensable tools for building brand awareness, fostering relationships, and promoting products. Through targeted advertisements and interactive campaigns, businesses can reach specific demographic groups and create meaningful connections. For instance, brands like Nike use Instagram to engage with younger audiences by showcasing user-generated content, influencers, and innovative storytelling. The integration of artificial intelligence (AI) has further elevated customer engagement by enabling businesses to provide real-time support and personalized recommendations. Chatbots and virtual assistants powered by AI allow companies to address customer queries instantly, reducing response times and improving satisfaction. For example, businesses in the retail sector use chatbots to guide customers through product catalogs, offer tailored suggestions, and facilitate seamless purchases. Additionally, AI-driven email marketing campaigns analyze customer behavior to deliver content that resonates with their preferences, thereby increasing open and conversion rates. Another technology transforming engagement is augmented reality (AR), which provides customers with immersive shopping experiences. AR tools allow users to visualize products in their real environment before making a purchase. In the furniture industry, for example, IKEA's AR app enables customers to see how a piece of furniture will look in their home, eliminating uncertainty and boosting confidence in the buying decision.

Expanding Omnichannel Strategies. The shift to omnichannel sales strategies is another critical outcome of digitalization. Omnichannel approaches integrate various sales channels—both online and offline—into a unified system, creating a seamless customer experience. Businesses adopting this strategy ensure that customers can interact with their brand across multiple touchpoints, whether through a physical store, website, mobile app, or social media platform. For instance, an enterprise may enable customers to browse products online, purchase them through an app, and pick them up at a nearby store. This integration not only improves convenience but also strengthens brand loyalty. Research indicates that customers who interact with multiple channels tend to spend more than those who rely on a single channel. Companies like Starbucks have successfully implemented omnichannel strategies by integrating mobile payments, loyalty programs, and in-store experiences, thereby driving both customer retention and revenue growth.

Leveraging Big Data for Sales Optimization. Big data is a game-changer in sales optimization, enabling businesses to make informed decisions based on accurate and comprehensive information. By collecting and analyzing data from multiple sources—such as customer interactions, social media activity, and website analytics—enterprises can gain a deep understanding of market trends and consumer behavior. These insights allow businesses to refine their sales strategies, identify high-potential markets, and develop targeted campaigns. One example of big data's impact is dynamic pricing, which adjusts product prices based on demand, competition, and customer willingness to pay. Airlines and e-commerce platforms often use this approach to maximize revenue. Similarly, predictive analytics helps companies anticipate future

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

trends and allocate resources effectively. For instance, a fashion retailer might analyze historical data to predict which clothing styles will be popular in the upcoming season, ensuring that inventory aligns with customer demand.

The Role of Social Media and Influencer Marketing. Social media platforms play a pivotal role in modern sales strategies, offering businesses direct access to billions of users worldwide. These platforms not only serve as marketing channels but also as marketplaces where customers can discover, evaluate, and purchase products. Facebook and Instagram, for example, have introduced shopping features that allow businesses to showcase products and facilitate direct purchases without requiring customers to leave the app. Influencer marketing has emerged as a powerful strategy for increasing sales in the digital age. By partnering with influencers who have a strong following and credibility within a specific niche, businesses can reach targeted audiences more effectively. Influencers act as trusted intermediaries, promoting products through authentic and relatable content. For instance, a beauty brand collaborating with a popular makeup artist on YouTube can drive sales by leveraging the influencer's expertise and loyal fan base.

Challenges and Risks of Digitalization. While digitalization offers numerous benefits, it also presents challenges that businesses must address to succeed. One major concern is cybersecurity. As enterprises rely more on digital platforms, they become vulnerable to cyber threats such as data breaches and hacking. Protecting sensitive customer information is essential for maintaining trust and compliance with regulations such as the General Data Protection Regulation (GDPR). Another challenge is the rapid pace of technological change, which requires businesses to continuously invest in upgrading their infrastructure and skills. Enterprises that fail to adapt risk falling behind competitors. Additionally, the digital marketplace is characterized by intense competition, as businesses from around the world vie for the attention of the same audience. This necessitates constant innovation and differentiation to stand out.

Case Studies in Digital Sales Success. Several companies have demonstrated the potential of digitalization to transform sales. Amazon is a prime example, utilizing AI-driven recommendations, efficient supply chain management, and seamless customer experiences to dominate the e-commerce market. Similarly, Netflix leverages data analytics to personalize content recommendations, resulting in high customer retention and subscription growth. In the retail sector, Zara has embraced digitalization by integrating online and offline channels, enabling customers to browse products online and try them in-store. This approach not only enhances convenience but also reduces return rates, contributing to higher profitability.

Strategies for Maximizing Sales in the Digital Era. To maximize sales in the digital age, businesses must adopt a proactive and customer-centric approach. This involves investing in advanced technologies such as AI, AR, and big data analytics to enhance decision-making and customer engagement. Building a strong online presence through optimized websites, social media activity, and digital advertising is also critical for attracting and retaining customers. Furthermore, enterprises should focus on creating personalized experiences that resonate with their target audience. By leveraging customer data, businesses can deliver tailored recommendations, promotions, and content that drive conversions. Additionally, fostering a culture of innovation and continuous learning within the organization ensures that employees are equipped to navigate the challenges of digital transformation. Finally, collaboration with technology partners and stakeholders can accelerate the adoption of digital tools and best practices. Enterprises that

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

prioritize agility, innovation, and customer satisfaction are well-positioned to thrive in the digital era.

Conclusion. Digitalization has fundamentally changed how enterprises approach sales, offering unprecedented opportunities for growth and innovation. By embracing digital tools, optimizing customer engagement, and adopting data-driven strategies, businesses can enhance their sales performance and achieve sustainable success. While challenges such as cybersecurity and intense competition persist, the benefits of digital transformation far outweigh the risks. As the digital landscape continues to evolve, enterprises must remain agile and forward-thinking to unlock their full potential.

References:

1. Brynjolfsson, E., & McAfee, A. (2014). *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. W.W. Norton & Company.
2. Chaffey, D., & Smith, P. R. (2022). *Digital Marketing Excellence: Planning, Optimizing, and Integrating Online Marketing*. Routledge.
3. Kotler, P., Keller, K. L., Chernev, A., & Brady, M. (2022). *Marketing Management* (16th ed.). Pearson.
4. Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53(1), 59-68. <https://doi.org/10.1016/j.bushor.2009.09.003>
5. Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, 54(3), 241-251. <https://doi.org/10.1016/j.bushor.2011.01.005>
6. Laudon, K. C., & Traver, C. G. (2022). *E-commerce 2023: Business, Technology, Society* (18th ed.). Pearson.
7. Davenport, T. H., & Kirby, J. (2016). Just how smart are smart machines? *MIT Sloan Management Review*, 57(3), 21-25.
8. Yunusova, R. Decentralized Blockchain Networks and Economic Security: Balancing Scalability and Security Tradeoffs //Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 2024, 14542 LNCS, pp. 244–252
9. Yunusova, R. Corporate Social Responsibility Disclosure and Bankruptcy Financial Risks: Moderating Role of Corporate Governance Index .DOI: 10.32826/cude.v46i132.1207Web of Sciens Volume: 46 Issue: 132 Page: 69-78

IMPROVEMENT OF PROCESSES OF MAKING MANAGERIAL DECISIONS

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Abstract: Managerial decision-making is a critical function that drives organizational success in an increasingly complex and dynamic environment. This article explores strategies to enhance decision-making processes by integrating technological advancements, such as big data analytics and artificial intelligence, with human-centric approaches emphasizing intuition, collaboration, and ethical considerations. It highlights challenges, including cognitive biases, information overload, and external uncertainties, while proposing frameworks like the Rational Decision-Making Model and the Cynefin Framework to improve decision quality and agility. The article also emphasizes the role of continuous learning, feedback, and ethical responsibility in refining managerial capabilities. These insights aim to empower organizations to make informed, strategic, and impactful decisions, fostering sustainable growth and innovation.

Keywords: Managerial decision-making, big data analytics, decision-making frameworks, cognitive biases, organizational agility, ethical decision-making.

The dynamic landscape of the modern world presents a unique set of challenges and opportunities for organizations, necessitating efficient and informed managerial decision-making processes. Managerial decisions are pivotal in steering organizations toward achieving their strategic goals, maintaining competitive advantages, and adapting to evolving market conditions. In an era characterized by rapid technological advancements, globalization, and increasingly complex business environments, the ability to make sound, timely, and strategic decisions has become a cornerstone of effective management. This article explores the critical aspects of improving managerial decision-making processes, focusing on strategies that enhance decision quality, efficiency, and adaptability. Decision-making, by its very nature, is a multifaceted process influenced by various internal and external factors. These include organizational structure, cultural dynamics, technological capabilities, and external market forces. Managers are often required to balance quantitative and qualitative data, account for uncertainties, and align their decisions with both short-term operational objectives and long-term strategic goals.

In recent years, the integration of technology in decision-making processes has emerged as a transformative trend. The use of big data analytics, artificial intelligence, and machine learning algorithms has equipped managers with powerful tools to analyze vast amounts of information, identify patterns, and predict outcomes with remarkable accuracy. These advancements, while promising, also present challenges related to data governance, ethical considerations, and the need for technical expertise. This article delves into how technology-driven solutions are reshaping managerial decision-making and the best practices for leveraging them effectively. Equally important is the human element in decision-making. The role of intuition, experience, and

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

collaborative approaches cannot be understated, even in a data-rich environment. Modern organizations increasingly recognize the value of fostering a decision-making culture that encourages diverse perspectives, open communication, and inclusive participation. By integrating the strengths of human judgment with data-driven insights, organizations can achieve a balanced approach to decision-making.

Another vital consideration is the development of decision-making frameworks that enhance organizational agility and resilience. The uncertainty of global markets, as evidenced by recent economic disruptions, underscores the need for flexible and adaptive decision-making processes. Managers must be equipped to handle crises, seize opportunities in volatile environments, and ensure that decisions align with organizational values and stakeholder expectations. This article adopts a multidimensional perspective on improving managerial decision-making processes. It examines theoretical foundations, practical tools, and emerging trends that contribute to enhanced decision quality. The discussion encompasses a range of topics, including strategic planning, risk management, cognitive biases, and decision-making models. Furthermore, it highlights the role of continuous learning and feedback in refining managerial capabilities. Through an in-depth analysis, this article aims to provide actionable insights and recommendations for practitioners and scholars alike. By bridging theoretical concepts with real-world applications, it aspires to contribute to the ongoing discourse on effective management practices. The findings presented here are particularly relevant for leaders and decision-makers seeking to navigate the complexities of contemporary business environments while fostering sustainable growth and innovation.

The Essence of Managerial Decision-Making. Managerial decision-making is the process by which managers evaluate situations, analyze information, and select courses of action to achieve organizational objectives. This critical function lies at the heart of organizational success, shaping outcomes in areas such as strategy, operations, human resources, and innovation. Effective decision-making requires a nuanced understanding of an organization's goals, a clear grasp of the external environment, and the ability to synthesize diverse inputs into coherent strategies. Managers must navigate a complex interplay of quantitative data, qualitative insights, and subjective judgment, all while addressing constraints such as time, resources, and uncertainty. Historically, managerial decisions were often guided by intuition and experience, supplemented by basic financial and operational metrics. However, the modern era has brought about profound changes. Globalization, technological advancements, and heightened competition have introduced unprecedented complexity. As a result, decision-making now demands a more sophisticated and systematic approach, integrating robust analytical methods, collaborative processes, and adaptive thinking.

Challenges in Managerial Decision-Making. Despite its critical importance, decision-making is fraught with challenges. One significant issue is the overwhelming volume of data available to managers. While data-driven decision-making has become a hallmark of effective management, the abundance of information can be a double-edged sword. Managers must sift through vast datasets, discerning relevant insights while avoiding information overload. This process requires not only technical proficiency but also a strategic understanding of what constitutes actionable intelligence. Another challenge is the prevalence of cognitive biases, which can distort judgment and lead to suboptimal decisions. Biases such as overconfidence, confirmation bias, and anchoring often influence managerial thinking, creating blind spots that hinder objectivity. Addressing these biases requires awareness, training, and the implementation

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

of structured decision-making frameworks that minimize their impact. Additionally, external factors such as economic volatility, technological disruption, and shifting consumer preferences add layers of complexity to decision-making. Managers must operate in environments characterized by uncertainty and rapid change, requiring agility and foresight. The ability to anticipate trends, assess risks, and respond proactively is essential for sustaining competitive advantage.

Role of Technology in Enhancing Decision-Making. Technology has emerged as a transformative force in managerial decision-making, offering tools and techniques that enhance accuracy, efficiency, and scalability. Big data analytics, for example, allows managers to process vast amounts of information, uncover patterns, and derive predictive insights. Machine learning algorithms further enable real-time analysis and decision support, helping organizations adapt quickly to changing circumstances. Enterprise Resource Planning (ERP) systems and Decision Support Systems (DSS) are widely used to streamline decision-making processes. These platforms integrate data from various organizational functions, providing a unified view that supports holistic decision-making. Moreover, visualization tools such as dashboards and interactive reports empower managers to interpret complex data with greater clarity, facilitating informed choices. Despite these advancements, the adoption of technology is not without challenges. Issues such as data privacy, cybersecurity risks, and the need for specialized skills can hinder the effective implementation of technology-driven solutions. Organizations must invest in training, infrastructure, and governance to fully leverage the potential of digital tools.

The Human Dimension of Decision-Making. While technology plays a critical role, the human element remains central to effective decision-making. Intuition, creativity, and interpersonal skills are attributes that technology cannot replicate. Managers bring unique perspectives and emotional intelligence to the decision-making process, enabling them to navigate ambiguous and unstructured situations. Collaborative decision-making is another key aspect, as diverse teams bring varied perspectives and expertise to the table. Inclusive approaches foster innovation and ensure that decisions are well-rounded and robust. However, collaboration also introduces challenges, such as conflicting viewpoints and the potential for groupthink. Effective facilitation, clear communication, and a culture of respect are essential for managing these dynamics. Leadership styles significantly influence decision-making outcomes. Transformational leaders, for instance, inspire their teams to think strategically and embrace change, fostering an environment conducive to innovative solutions. Conversely, autocratic leadership styles may expedite decisions but risk alienating team members and stifling creativity. Striking the right balance between directive and participative approaches is crucial for long-term success.

Frameworks and Models for Decision-Making. To improve decision-making processes, organizations can adopt various frameworks and models that provide structure and clarity. The Rational Decision-Making Model, for example, emphasizes a systematic approach involving problem identification, alternative generation, evaluation, and selection. While this model is highly logical, it may be less effective in dynamic environments where quick decisions are required. The Cynefin Framework offers a more flexible approach, categorizing problems into simple, complicated, complex, and chaotic domains. This framework helps managers tailor their decision-making strategies to the specific context, balancing analysis with intuition. Similarly, the Vroom-Yetton-Jago Model provides guidance on when to involve teams in decision-making, promoting efficiency and inclusiveness. Scenario planning is another valuable tool, enabling managers to

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

explore potential future scenarios and develop contingency plans. This approach enhances resilience and preparedness, equipping organizations to navigate uncertainties with greater confidence.

Enhancing Organizational Agility. Agility is a defining attribute of modern organizations, enabling them to adapt quickly to changing circumstances. Decision-making processes must support this agility, emphasizing speed, flexibility, and responsiveness. Agile methodologies, commonly associated with software development, are increasingly being applied to management practices. These methodologies prioritize iterative decision-making, continuous feedback, and cross-functional collaboration. For example, iterative decision-making allows managers to test ideas in small increments, gather feedback, and refine their approaches. This reduces the risk of large-scale failures and ensures that decisions remain aligned with evolving conditions. Additionally, cross-functional teams bring diverse expertise to decision-making, enhancing the organization's ability to address complex challenges.

Continuous Learning and Feedback. Improving decision-making is an ongoing process that requires continuous learning and adaptation. Managers must actively seek feedback, reflect on outcomes, and identify areas for improvement. Post-decision reviews, also known as after-action reviews, are a valuable practice for evaluating the effectiveness of decisions and deriving lessons for the future. Training programs and workshops can also enhance decision-making skills, focusing on areas such as critical thinking, emotional intelligence, and data literacy. By fostering a culture of learning, organizations can ensure that their decision-making processes evolve in line with changing demands and opportunities.

The Ethical Dimension of Decision-Making. Ethics play a critical role in managerial decision-making, as decisions often have far-reaching implications for stakeholders. Managers must consider the ethical dimensions of their choices, balancing profitability with social responsibility, environmental sustainability, and fairness. Ethical decision-making frameworks, such as the Triple Bottom Line approach, provide guidance on integrating financial, social, and environmental considerations. Organizations that prioritize ethical decision-making benefit from enhanced reputation, employee engagement, and stakeholder trust. However, ethical dilemmas can be challenging to navigate, requiring a clear understanding of organizational values and principles. Transparent communication and stakeholder engagement are essential for building consensus and ensuring accountability.

Conclusion. Improving managerial decision-making processes is a multifaceted endeavor that requires the integration of analytical tools, human-centric approaches, and adaptive frameworks. By addressing challenges, embracing technology, and fostering a culture of continuous learning, organizations can enhance their decision-making capabilities and achieve sustainable success. This article has explored the complexities and opportunities associated with managerial decision-making, offering insights and recommendations for practitioners and scholars alike. As organizations navigate the demands of the modern era, effective decision-making will remain a cornerstone of strategic and operational excellence.

References:

1. Davenport, T. H., & Harris, J. G. (2007). Competing on analytics: The new science of winning. Harvard Business Review Press.
2. Kahneman, D. (2011). Thinking, fast and slow. Farrar, Straus and Giroux.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

3. Simon, H. A. (1997). *Administrative behavior: A study of decision-making processes in administrative organizations* (4th ed.). Free Press.
4. Snowden, D. J., & Boone, M. E. (2007). A leader's framework for decision making. *Harvard Business Review*, 85(11), 68-76.
5. Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185(4157), 1124-1131.
6. Mintzberg, H., Raisinghani, D., & Théorêt, A. (1976). The structure of "unstructured" decision processes. *Administrative Science Quarterly*, 21(2), 246-275.
7. Drucker, P. F. (2006). *The effective executive: The definitive guide to getting the right things done*. Harper Business Essentials.
8. Yunusova, R. *Decentralized Blockchain Networks and Economic Security: Balancing Scalability and Security Tradeoffs //Lecture Notes in Computer Science* (including subseries *Lecture Notes in Artificial Intelligence* and *Lecture Notes in Bioinformatics*), 2024, 14542 LNCS, pp. 244–252
9. Yunusova, R. *Corporate Social Responsibility Disclosure and Bankruptcy Financial Risks: Moderating Role of Corporate Governance Index* .DOI: 10.32826/cude.v46i132.1207Web of Sciens Volume: 46 Issue: 132 Page: 69-78

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INNOVATIVE APPROACHES TO TEACHING ENGLISH TO PRESCHOOL CHILDREN

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Abstract: Preschool children exhibit a higher capacity for learning foreign languages compared to older children. Their educational progress heavily relies on using age-appropriate and engaging teaching methods. This article explores the role of innovative approaches, including modern technologies, short poems, and interactive activities, in fostering interest, expanding vocabulary, and enhancing pronunciation during English learning sessions.

Keywords: Preschool education, foreign language acquisition, innovative teaching methods, vocabulary development , speech development, multimedia tools , interactive learning , short poems , engaging activities , child-centered approach visual learning , pronunciation improvement , attention span play-based learning , technology integration

Introduction

Teaching preschool children requires a tailored approach, considering their natural curiosity and limited attention span. Traditional teaching methods, such as repetitive verbal instruction, often fail to capture their interest. Instead, interactive and technology-driven approaches can provide better results by making lessons more engaging. Children are naturally drawn to colorful visuals, animated content, and dynamic activities, which can significantly enhance their learning experience.

The role of poems in speech development

Short, simple English poems are an effective tool for developing children's speech and improving their pronunciation. Poems with rhythmic and repetitive patterns are particularly suitable for preschoolers. For example:

- *Walking, walking*
- *Hop, hop, hop*
- *Running, running, running*

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

These playful and easy-to-pronounce phrases help strengthen memory and pronunciation. Incorporating music or actions into the recitation process further engages children and makes learning enjoyable.

Utilizing modern technologies

Multimedia tools are essential for capturing the attention of young learners. Videos, animations, and interactive games provide an immersive experience that traditional methods cannot achieve. Bright visuals and engaging sounds not only attract children but also help expand their virtual and visual understanding of the world. For instance:

1. Interactive language apps allow children to practice vocabulary with instant feedback.
2. Animated videos teach new words in context, enhancing comprehension.
3. Educational games make repetition fun and help reinforce learning.

Enhancing vocabulary through engagement

Building a rich vocabulary requires interactive and structured activities. The following steps can be applied:

1. Introduce simple, familiar words that are easy to pronounce.
2. Use pictures, animations, and tangible objects to associate words with meanings.
3. Reinforce vocabulary through songs, rhymes, and repetitive activities.

External and internal factors in speech development

Children's speech development is influenced by both external and internal factors.

- **External factors** include interactions with parents, teachers, and peers, as well as exposure to a language-rich environment. For example, children actively participating in English conversations are more likely to develop strong linguistic skills.
- **Internal factors** involve the biological and cognitive readiness of children, such as the development of their speech organs and mental ability to process language over time.

Conclusion

Combining traditional and innovative teaching methods is essential for effectively teaching English to preschool children. Short poems, interactive tools, and modern technologies not only make lessons engaging but also expand children's vocabulary, improve their pronunciation, and enhance their imagination. By leveraging these methods, educators can create a more dynamic and effective learning environment.

Recommendations

1. Integrate multimedia tools into every lesson to enhance engagement.
2. Select age-appropriate materials with simple pronunciation and meaningful content.
3. Employ interactive and enjoyable activities to sustain children's attention and motivation.

Adopting these innovative strategies ensures better preparation for children to acquire and use foreign languages confidently in their early years.

KICHIK YOSHDAGI BOLALARGA INGLIZ TILINI O'RGATISHDA INNOVATSION YONDASHUVLAR

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Annotatsiya: Kichik yoshdagi bolalarning xorijiy tillarni o'zlashtirish qobiliyati katta yoshdagi o'smirlarga qaraganda yuqoriroq bo'lgani sababli, ularning ta'lim jarayonida zamonaviy metodlardan foydalanish muhim ahamiyat kasb etadi. Ushbu maqola bolalarning e'tiborini jalb qilish, qiziqishlarini oshirish, va ingliz tilini o'zlashtirishda texnologiyalar hamda innovatsion yondashuvlarning rolini tahlil qiladi.

Kalit so'zlar: Maktabgacha ta'lim, xorijiy tilni o'zlashtirish, innovatsion o'qitish usullari, lug'at boyligini oshirish, nutq rivoji, multimedia vositalari, interaktiv o'qitish, kichik hajmli she'rlar, qiziqarli mashg'ulotlar, bola markazli yondashuv, vizual ta'lim, talaffuzni yaxshilash, diqqatni jamlash qobiliyati, o'yin asosidagi o'qitish, texnologiyani integratsiya qilish

Kirish

Maktabgacha yoshdagi bolalar uchun ta'lim jarayonining muvaffaqiyatli bo'lishi, avvalo, ularga mos o'qitish metodlarini tanlashga bog'liq. Shu yoshdagi bolalar tabiiy ravishda qiziqqon bo'lib, ular turli xil rang-barang o'yinlar, texnologik vositalar va interaktiv materiallarga nisbatan ijobiy munosabatda bo'ladi. Biroq, faqat o'qituvchining ovozi yoki an'anaviy yondashuvlar ba'zi bolalarga yetarli bo'lmasligi kuzatiladi. Shu sababli, bolalar uchun o'yin orqali ta'limni amalga oshirish va zamonaviy vositalardan foydalanish masalasi dolzarbdir.

Bolalarning nutqini rivojlantirishda she'rlarning roli

Ingliz tilidagi kichik hajmli she'rlar bolalarning nutqini rivojlantirish va talaffuzini takomillashtirish uchun samarali vosita hisoblanadi. She'rlarning qisqa va talaffuzi oson so'zlardan iborat bo'lishi bolalar uchun qulaydir. Masalan:

- *Walking, walking*
- *Hop, hop, hop*
- *Running, running, running*

Ushbu kabi she'rlarni takrorlash orqali bolalarning xotirasi va talaffuz qobiliyati yaxshilanadi. She'rlarni musiqiy tarzda aytish esa bolalarning qiziqishini yanada oshiradi.

Zamonaviy texnologiyalardan foydalanish

Bolalarning e'tiborini jalb qilish va ularni darsga qiziqtirish uchun multimedia vositalaridan foydalanish dolzarb ahamiyatga ega. Rang-barang videolar, animatsiyalar va interaktiv o'yinlar orqali bolalar nafaqat ingliz tilidagi yangi so'zlarni o'rganadi, balki ularning virtual va visual olami kengayadi. Bu ta'lim jarayonini yanada qiziqarli va samarali qiladi.

Bolalarning lug'at boyligini oshirish

Ta'lim jarayonida lug'at boyligini oshirish uchun qiziqarli va amaliy mashg'ulotlar o'tkazish lozim. Bu jarayonda quyidagi bosqichlar muhim:

1. Oson va tushunarli so'zlardan foydalanish.
2. So'zlarni rasmlar va interaktiv o'yinlar yordamida o'rgatish.
3. O'tilgan lug'atlarni she'rlar va qo'shiqlar orqali mustahkamlash.

Tashqi va ichki omillarning ahamiyati

Bolalarning nutqi rivojlanishiga tashqi va ichki omillar bevosita ta'sir ko'rsatadi. Tashqi omillar – ota-onalar, o'qituvchilar va bolani o'rab turgan muhit bilan bog'liq. Masalan, bolaning doimiy ravishda ingliz tilidagi muloqotni kuzatishi va ishtirok etishi uning tilni tezroq o'zlashtirishiga yordam beradi. Ichki omillar esa bolaning til paychalari rivoji va shaxsiy qobiliyatlariga bog'liq.

Xulosa

Kichik yoshdagi bolalarga ingliz tilini o'rgatishda an'anaviy yondashuvlarni innovatsion metodlar bilan boyitish muhimdir. She'rlar, qo'shiqlar va zamonaviy texnologiyalar bolalarning o'qitish jarayoniga qiziqishini oshiradi, virtual va visual tasavvurlarini kengaytiradi. Ushbu yondashuvlar orqali bolalarning nutqi, lug'at boyligi va talaffuz mahorati sezilarli darajada rivojlanadi.

Tavsiyalar

1. Har bir mashg'ulotda multimedia vositalaridan foydalanish.
2. Bolalarga mos talaffuz va mazmun jihatidan yengil materiallarni tanlash.
3. Ta'lim jarayonida interaktiv va qiziqarli usullarni qo'llash orqali bolalarning e'tiborini jalb qilish.

Ushbu yondashuvlar bolalarni xorijiy tillarni o'rganishga tayyorlashda samarali natijalar beradi.

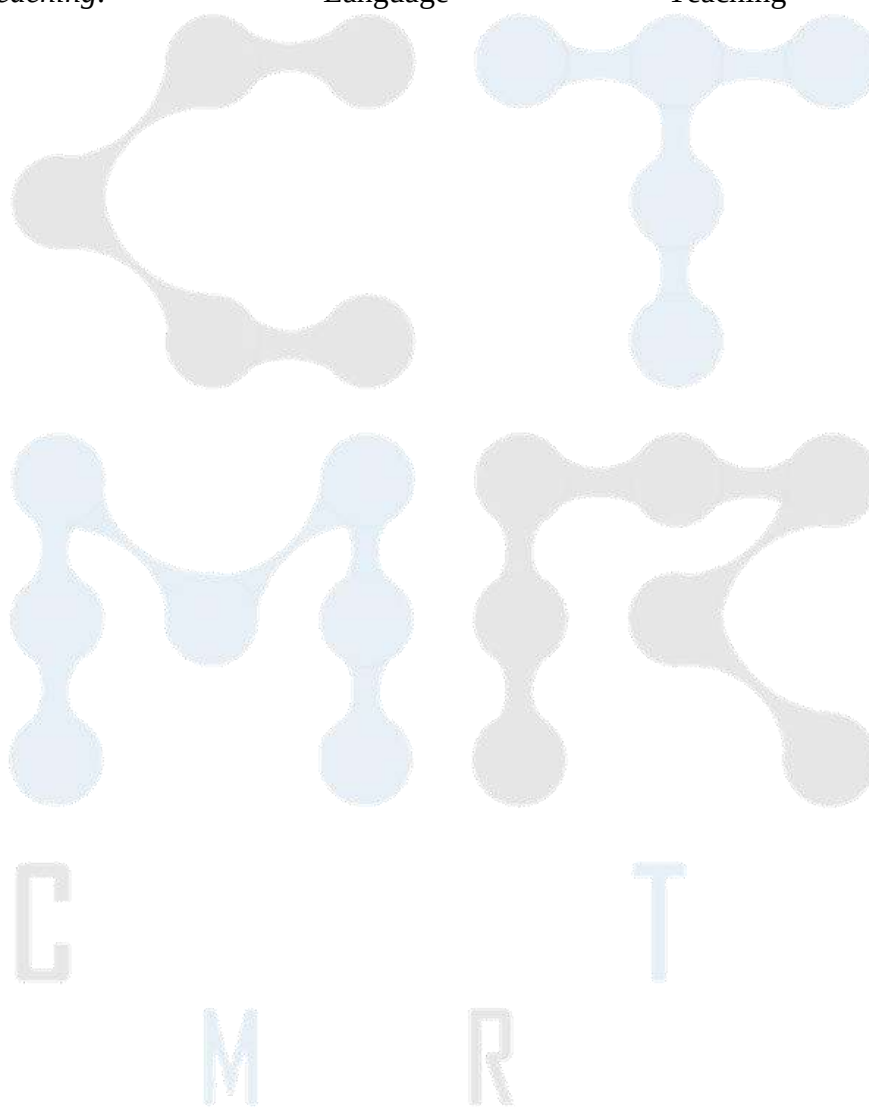
References / Foydalanilgan adabiyotlar

1. Brown, H. D. (2007). *Principles of Language Learning and Teaching*. Pearson Education.
2. Cameron, L. (2001). *Teaching Languages to Young Learners*. Cambridge University Press.
3. Nunan, D. (1999). *Second Language Teaching & Learning*. Heinle & Heinle Publishers.
4. Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Harvard University Press.
5. Harmer, J. (2007). *The Practice of English Language Teaching*. Pearson Education.
6. Moyles, J. (2014). *The Excellence of Play*. McGraw-Hill Education.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

7. Ministry of Preschool Education of Uzbekistan (2021). *Innovative Approaches in Early Childhood Education*. [Online Resource]
Piaget, J. (1962). *Play, Dreams and Imitation in Childhood*. Norton.
8. "The Role of Technology in Early Childhood Education". (2020). *Journal of Early Learning and Development*.
Reinders, H., & White, C. (2011). *The Use of Technology in Language Learning and Teaching*. Language Teaching Research.



COTTON FIBER AND AIR FLOW EXAMINED VIA A MATHEMATICAL
EXAMINATION

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Abstract. When cotton fibers are cleaned, there is a very high chance that they will come into contact with one another in a single particle. When it comes to technical activities, a group of cotton fibers made up of several fibers may interact with a machine's working parts more frequently than a single cotton filament. It should be noted that the continuous media theory must be applied in order to describe the movement of cotton fiber during cleaning, pipe movement, removal from the saw teeth of a spinning gin machine with the aid of an air stream, and removal from the machine after the air has been removed.

Introduction. Here, the air-fiber mixture creates a single, continuous medium whose motion is dictated by the law of interaction between the fiber and air particles. Air particles and cotton fiber, the two constituents of such a medium, have different velocities. Consequently, at every location in the medium, a force proportional to the difference in the component velocities is generated. Such settings are typically regarded as multi-velocity (in our example, two-velocity) environments, and specific theories are adopted to investigate the environment's condition and motion laws. Such settings are typically regarded as multi-velocity (in our example, two-velocity) environments, and specific theories are adopted to investigate the environment's condition and motion laws. One of the most significant theories in the theory of multi-component environments, which was initially put forth by academician H.A. Rakhmatulin [1], is that the pressure is the same for every component of the environment. If one of the components of the environment is a moving elastic medium and the other is a viscous fluid, the pressure of the fluid component is determined, and Hooke's law is used to determine if the component is a deformable solid. The Bio-Frenkel model is the name given to this type of two-component ecosystem.

Thus, if the shear deformation in the deformable component is not taken into account, and the average hydrodynamic pressure in it is taken to be equal to the air pressure, then it is possible to obtain a two-component medium model proposed by Academician H.A. Rakhmatulin. In the literature, such media are called heterogeneous mixtures, and their motion is studied on the basis of the theory of multi-velocity media. For such media, the concept of initial (true) densities is given. For a mixture of air and cotton fiber, we denote these quantities by $\rho_1^{(0)}$ and $\rho_2^{(0)}$. Let us

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

assume that the mixture in a container with a volume of V . In it, V_1 part of the first component (air) V_2 is occupied by the second component (cotton fiber pieces), and their densities are ρ_1 and ρ_2 , respectively.

Results and Discussions. According to the law of conservation of mass, we can write the equations

$$\rho_1^{(0)}V_1 = \rho_1 V, \rho_2^{(0)}V_2 = \rho_2^{(0)}(V - V_1) = \rho_2 V \quad (1)$$

This ratio V_1/V is usually called the porosity of the medium, we denote this ratio by, according to formula (2.3)

$$m = \frac{V_1}{V} = \frac{\rho_1}{\rho_1^{(0)}}, 1 - m = \frac{V - V_1}{V} = \frac{V_2}{V} = \frac{\rho_2}{\rho_2^{(0)}} \quad (2)$$

Thus, m part of the medium is occupied by air, and $1 - m$ part by cotton particles. Equations (2.4) can be written as

$$\rho_1 = m\rho_1^{(0)}, \rho_2 = (1 - m)\rho_2^{(0)} \quad (3)$$

From these expressions, the following equality follows:

$$\frac{\rho_1}{\rho_1^{(0)}} + \frac{\rho_2}{\rho_2^{(0)}} = 1 \quad (4)$$

Thus, it is sufficient to know to determine the components of the medium.

We consider the one-dimensional motion of a two-component medium in a stationary state. According to the model of K.A. Rakhmatulin, the equations of motion of the flow can be written as follows [2]:

$$\rho_1 u_1 \frac{\partial u_1}{\partial x} = -\frac{\rho_1}{\rho_1^{(0)}} \frac{\partial p}{\partial x} + k(u_2 - u_1) \quad (5)$$

$$\rho_2 u_2 \frac{\partial u_2}{\partial x} = -\frac{\rho_2}{\rho_2^{(0)}} \frac{\partial p}{\partial x} + k(u_1 - u_2), \quad (6)$$

Where $u_1(x)$ and $u_2(x)$ are the velocities of the components, $p(x)$ - the pressure that is the same for both components, k - the coefficient of interaction between air and cotton fiber. Using equations (3), equations (5) and (6) can be written as follows:

$$m\rho_1^{(0)}u_1 \frac{\partial u_1}{\partial x} = -m \frac{\partial p}{\partial x} + k(u_2 - u_1) \quad (7)$$

$$(1-m)\rho_2^{(0)}u_2 \frac{\partial u_2}{\partial x} = -(1-m) \frac{\partial p}{\partial x} + k(u_1 - u_2), \quad (8)$$

According to equations (2.8), the density of the components of the medium is expressed by the porosity of the medium. If each component is considered an ideal incompressible medium, then, according to the law of conservation of matter, the following equations are valid for each component:

$$\rho_1 u_1 = \rho_{10} u_{10}, \quad \rho_2 u_2 = \rho_{20} u_{20} \quad (9)$$

or using equation (2.10):

$$m\rho_1^{(0)}u_1 = m_0\rho_1^{(0)}u_{10}, \quad (1-m)\rho_2^{(0)}u_2 = (1-m_0)\rho_2^{(0)}u_{20},$$

Where, m_0 -is the given porosity at some point of the medium, u_{10}, u_{20} is the given velocities of the components from this point.

Using expressions (3) and (9), we find the relationship between

$$u_1(x), u_2(x).$$

$$\bar{u}_2 = \frac{\beta \bar{u}_1}{\bar{u}_1 - \lambda} \quad (10)$$

Here $\bar{u}_i = u_i / u_{10}$, $\beta = (1-\lambda)u_{20} / u_{10}$, $\lambda = \rho_{10} / \rho_1^{(0)}$

By removing the pressure from equations (6), we find the relationship between the derivatives $\frac{du_1}{dx}, \frac{du_2}{dx}$:

$$\bar{u}_1 \frac{d\bar{u}_1}{dx} - \gamma \bar{u}_2 \frac{d\bar{u}_2}{dx} = \bar{k}(\bar{u}_2 - \bar{u}_1) \quad (11)$$

Here, using the relations $\gamma = \rho_2^{(0)} / \rho_1^{(0)}$, $\bar{k} = k / \rho_1^{(0)}u_{10}$ we find the derivative (11)

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

The initial conditions necessary to solve equation (12) are usually determined depending on the formulation of the problem. Suppose that the medium moves in a pipe with a constant S_0 cross-sectional area. Then, for each component (air and cotton fiber), the following amount of mass flow passes through $x = 0$ the cross-sectional area in a unit time interval:

$$Q_1 = \rho_{10} u_{10} S_0, Q_2 = \rho_{20} u_{20} S_0 \quad (12)$$

Usually Q_1 and Q_2 in technology, air and cotton fiber consumptions are called, respectively. From these equations, we find the velocities u_{10} and u_{20} :

$$u_{10} = \frac{Q_1}{\rho_{10} S_0}, u_{20} = \frac{Q_2}{\rho_{20} S_0} \quad (13)$$

Using the determined velocities, the porosity values in the initial and arbitrary sections are found using the following formulas:

$$m_0 = \rho_{10} / \rho_1^{(0)} \text{ or } m_0 = 1 - \rho_{20} / \rho_2^{(0)}$$

$$m = \frac{\rho_{10} u_{10}}{\rho_1^{(0)} u_1} \text{ or } m = 1 - \frac{\rho_{20} u_{20}}{\rho_2^{(0)} u_2}$$

To find the pressure in the environment, we take this equation:

$$\rho_{10} u_{10} \frac{du_1}{dx} + \rho_{20} u_{20} \frac{du_2}{dx} = - \frac{dp}{dx}$$

Integrating the equation with the initial conditions $u_1(0) = u_{10}$, $u_2(0) = u_{20}$, $p(0) = p_0$ we find the dynamic pressure $\Delta p = p - p_0$:

$$\Delta p = \rho_{10} u_{10} (u_{10} - u_1) + \rho_{20} u_{20} (u_{20} - u_2)$$

We consider the following special cases.

1. The velocity of the cotton fiber is zero. The air flow passes through the stationary cotton mass. In the above formulas, we assume that $u_2 = 0$. In this case, the second expression of (10) is exactly fulfilled. From the first of them, we determine the density of the raw material and the porosity of the medium from the arbitrary value of the variable air (3):

$$\rho_1 = \rho_{10} u_{10} / u_1, \rho_2 = \rho_2^{(0)} \left(1 - \frac{\rho_{10} u_{10}}{\rho_1^{(0)} u_1}\right), m = \frac{\rho_{10} u_{10}}{\rho_1^{(0)} u_1}$$

To find the unknown air velocity and pressure in these expressions, we accept in equations (11) and (12) as $u_2 = 0$, $\rho_1 = \rho_{10} u_{10} / u_1$:

$$\rho_{10} u_{10} \frac{du_1}{dx} = -\frac{\rho_{10}}{\rho_1^{(0)}} \frac{u_{10}}{u_1} \frac{dp}{dx} - k u_1$$

$$0 = -\left(1 - \frac{\rho_{10} u_{10}}{\rho_1^{(0)} u_1}\right) \frac{dp}{dx} + k u_1$$

From this system, we determine $\frac{du_1}{dx}$ and $\frac{dp}{dx}$.

$$\frac{du_1}{dx} = -\frac{k}{\rho_{10}} \frac{u_1}{(u_1 - a_1 u_{10})}, \frac{dp}{dx} = -\rho_{10} u_{10} \frac{du_1}{dx}$$

Integrating these equations $u_1(0) = u_{10}$, $p(0) = p_0$ under the conditions, we find

$$u_{10} - u_1 - a u_{10} \ln \frac{u_1}{u_{10}} = -\frac{kx}{\rho_{10}} \quad (14)$$

$$p = p_0 + \rho_{10} u_{10} (u_{10} - u_1), a_1 = \rho_{10} / \rho_1^{(0)}$$

2. A weight of cotton fiber moves in a shaft with a zero air flow velocity. The flow rate of the raw material in the initial section $x = 0$ of the shaft is equal to Q_2 . We find the laws of distribution of the air, raw material densities and raw material velocities over the height of the shaft. We denote the cross-sectional area of the shaft by S_0 . In equations (5) and (6),

we can say

$$u_1 = 0, \rho_2 = \rho_{20} u_{20} / u_2, u_{20} = Q_2 / S_0 \rho_{20}, \rho_1 = \rho_{10} \left(1 - \frac{\rho_{20} u_{20}}{\rho_2^{(0)} u_2}\right)$$

and take its weight into account. Then equations (5) and (6) take the following form.

$$0 = -\left(1 - \frac{\rho_{20} u_{20}}{\rho_2^{(0)} u_2}\right) \frac{dp}{dx} + k u_2 \rho_{20} u_{20} \frac{du_2}{dx} = -\frac{\rho_{20}}{\rho_2^{(0)}} \frac{u_{20}}{u_2} \frac{dp}{dx} - k u_2 + \frac{g \rho_{20} u_{20}}{u_2}$$

From this system, we determine the derivative $\frac{du_2}{dx}$:

$$\frac{du_2}{dx} = \frac{k}{\rho_{20}} \frac{(u_2 - a_2 u_{20})b - u_2^2}{u_2(u_2 - a_2 u_{20})}$$

Here $a_2 = \rho_{20} / \rho_2^{(0)}$, $b = g\rho_{20} / k$, is expressed by this integral:

$$\int_{u_{20}}^{u_2} \frac{u(u - a_2 u_{20})du}{(u - a_2 u_{20})b - u^2} = \frac{kx}{\rho_{20}} \quad (15)$$

3. The mass of cotton fiber moves under the influence of constant air pressure. In this case, we obtain the law $p = p_0 + \Delta p x / L$ of variation of the pressure in a limited interval $0 < x < L$ of x , where $\Delta p = p_L - p_0$, p_0 and p_L $x = 0$ are the pressures at the sections. Substituting p the expression of into equations (5) and (6) and using equations (7) and (10), we construct a system for finding $u_1(x)$ and $u_2(x)$.

$$\rho_{10} u_{10} \frac{du_1}{dx} = -\frac{\rho_{10} u_{10}}{\rho_1^{(0)} u_1} \frac{\Delta p}{L} + k(u_2 - u_1) \quad (16)$$

$$\rho_{20} u_{20} \frac{du_2}{dx} = -\frac{\rho_{20} u_{20}}{\rho_2^{(0)} u_2} \frac{\Delta p}{L} + k(u_1 - u_2) , \quad (17)$$

We add these equations one by one, integrate the result, and find the relationship between $u_1(x)$ and $u_2(x)$

$$\rho_{10} u_{10} (u_1 - u_{10}) + \rho_{20} (u_2 - u_{20}) = -\Delta p / L$$

Expressing u_2 and u_1 from this equation throughout

$$u_2 = -u_1 \frac{\rho_{10} u_{10}}{\rho_{20} u_{20}} + \frac{\Delta p + \rho_{20} u_{20}^2 + \rho_{10} u_{10}^2}{\rho_{20} u_{20}}$$

we put it in equation (16).

$$\frac{du_1}{dx} = -\frac{c_2 u_1^2 + c_1 u_1 + c_0}{u_1}$$

$$\text{Here } c_0 = \frac{a_1 \Delta p}{\rho_{10} L}, c_2 = \frac{k}{\rho_{10} u_{10}} (1 + \rho_{10} u_{10} / \rho_{20} u_{20}), c_1 = -\frac{k}{\rho_{10} u_{10}} \frac{\Delta p + \rho_{20} u_{20}^2 + \rho_{10} u_{10}^2}{\rho_{20} u_{20}}$$

Integrating the last expression, we get:

$$x = \sqrt{4c_0 c_2 - c_1^2} \ln \frac{c_2 u_{10}^2 + c_1 u_{10} + c_0}{c_2 u_1^2 + c_1 u_1 + c_0} + 2c_1 \left[\arctan \frac{2c_2 u_1 + c_1}{\sqrt{4c_0 c_2 - c_1^2}} - \arctan \frac{2c_2 u_{10} + c_1}{\sqrt{4c_0 c_2 - c_1^2}} \right], \quad (18)$$

This equation expresses the law of displacement of the fiber bundle as it moves along the pipe until it enters the fiber cleaner.

Conclusions. The distance between the cotton gin machine and the fiber cleaner can be determined by analyzing the equation closely, and we can see that air parameters, such as density, pressure, and speed, as well as the density and aerodynamic resistance coefficients of cotton fiber, as well as the width and height of the conveyor system, all play a role in the distance cotton travels between the gin machine and fiber cleaner. There are three variables that can be controlled directly: air pressure, speed, and material transfer—that is, the height of the pipe—and it is only by adjusting these variables that it is possible to ensure which zone of cotton fiber goes into the fiber cleaner system.

References

- 1] Najmitdinov Shuxrat Abdukarimovich, Yuldashev Khasanboy Sulayman o'g'li, & Sharipov Hayrullo No'monjanovich. (2023). Тола ажратиш жараёнида хомашё валиги зичлиги ва тезлигининг аҳамияти ўрганиш ва таққослаш. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 250–256. <https://doi.org/10.5281/zenodo.10416875>
- 2] Nazhmitdinov, S. A., & Abdulkhafizov, N. (2023). ЭКСПЕРИМЕНТАЛЬНЫЕ ИССЛЕДОВАНИЯ ВАРИАНТОВ ПРОФИЛЕЙ КОЛОСНИКОВЫХ РЕШЕТОК НА ЭКСПЕРИМЕНТАЛЬНОЙ УСТАНОВКЕ МОДУЛЯ КРУПНОГО СОРА. Journal of Science and Innovative Development, 6(3), 99–105. <https://doi.org/10.36522/2181-9637-2023-3-10>
- 3] Жин машинаси ишчи камерасининг конструкцияси ва бошқа деталларининг тола ажралиш жараёнига таъсир омилларини тадқиқ қилиш. (2023). "XXI ASRDA INNOVATION TECHNOLOGIYALAR, FAN VA TA'LIM TARAQQIYOTIDAGI DOLZARB MUAMMOLAR" Nomli Respublika Ilmiy-Amaliy Konferensiyasi, 1(10), 104-109. <https://universalpublishings.com/index.php/itftdm/article/view/2213>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

- 4] Yuldashev, K., Sharipov, K., Najmitdinov, S., Inamova, M., & Ruzimatov, S. (2024). Modelling cotton fiber doffing from saw teeth based on a mathematical model. E3S Web of Conferences, 537, 08017. <https://doi.org/10.1051/e3sconf/202453708017>
- 5] Абдукаримович, Н. Ш., Ўғли, Ў. Б. Б., & Солижонович, Т. Ш. (2023, May 1). Пахта хомашёсини майда ифлосликлардан тозалаш технологияси таҳлили. <https://universalpublishings.com/index.php/jusr/article/view/621>
- 6] Sarimsakov Olimjon, Najmitdinov Shukhrat, & Navruzov Nadir. (2024). Examination of The Fiber Quality Obtained From the Observed Fiber Separation Machine in Other Manufacturing Enterprise Types. ACUMEN: INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH, 1(4), 165–170. <https://doi.org/10.5281/zenodo.14206307>
- 7] Sarimsakov O. The Change in Air Pressure Along the Length of the Pipeline Installation for Pneumatic Conveying of Raw Cotton. USA. Journal Engineering and Technology. 2016; 3(5): 89-92
- 8] Olimjon Sarimsakov, Khasanboy Yuldashev, Sherzod Tuxtaev, Bekzod Urinboyev, Utkirbek Xoshimov; Methodology for performing aerodynamic measurements in cleaning seed cotton. AIP Conf. Proc. 23 June 2023; 2789 (1): 040128. <https://doi.org/10.1063/5.0145700>
- 9] Azimov, S. S., Tursunov, I. T., & Yuldashev, K. S. (2022). DEVELOPMENT OF THE DESIGN OF A FEEDER OF VIBRATION ACTION FOR SUPPLYING COTTON SEEDS TO LINTER MACHINES Proceeding IX International Conference «Industrial Technologies and Engineering» ICITE–2022, Volume IV M. Auezov South Kazakhstan University, Shymkent, Kazakhstan December, 09-10.
- 10] Yo‘Ldashev Hasanboy Sulaymon O‘G‘Li, Inamova Maftuna Dedamirza Qizi, & Sarimsakov Olimjon Sharifjanovich (2023). Arra tishlaridan paxta tolasini yechib olish jarayoni parametrlarini ilmiy asoslash. Илм-фан ва инновацион ривожланиш / Наука и инновационное развитие, 6 (6), 84-95. doi: 10.36522/2181-9637-2023-6-9
- 11] Arra tishlaridan paxta tolasini ilib olish jarayonini matematik modelini ishlab chiqish. (2023). International Conference on Multidisciplinary Science, 1(5), 174-177. <https://mjstjournal.com/index.php/icms/article/view/381>
- 12] Sulaymonov Abror, Inamove Maftuna, Yuldashev Khasanboy. (2022). THEORETICAL STUDIES OF THE NATURE OF THE INTERACTION OF COTTON SEEDS IN THE GAP BETWEEN THE AGITATOR BLADE AND THE SAW CYLINDER. EURASIAN

<https://doi.org/10.5281/zenodo.7218857>

- 13] Isayev, S., Mamadaliyev, M., Muxsinov, I., Maftuna, I., & Sohijon, E. (2023). Practical and theoretical analysis of the results obtained in the process of cleaning cotton from impurities. Scientific and Technical Journal of Namangan Institute of Engineering and Technology, 8(2), 67-73.
- 14] Sarimsaqov, O., Obilov, B., Isayev, S., Muhsinov, I., Muhiddinov, S., & Inamova, M. (2023, June). Theoretical study of the process of contaminants from raw cotton moving on the surface of the grate. In AIP Conference Proceedings (Vol. 2789, No. 1). AIP Publishing.
- 15] Шарипов К., Ахмедходжаев К., Тоджибоев М., Саримсаков О. (2020) Математическая модель движения семян на ребре вогнутого профиля. Машиностроение, 12, 216-227. <https://doi.org/10.4236/eng.2020.123017>
- 16] Sharipov, K., Akhmetxodjayev, K., & Tadjibayev, M. (2019). The mathematical model of seed movement on a concave profile rib of saw jin stand. Scientific and technical journal of Namangan institute of engineering and technology, 4, 19-29.
- 17] Ахмедходжаев, К. Т., Таджибаев, М. А., Шарипов, К. Н. М., Джурамирза, А. К., и Абдураксимов, К. К. (2023). Изучение семян хлопчатника как технологического материала. Машиностроение, 15(11), 782-791.

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Abstract: Cardiac valve disorders are one of the leading causes of heart disease and can significantly affect the function of the heart. The diagnosis and conservative treatment of cardiac valve defects involve a comprehensive approach, including clinical evaluation, imaging techniques, and pharmacological interventions. The most common types of valve disorders include stenosis and regurgitation, which may affect the aortic, mitral, tricuspid, and pulmonary valves. Timely diagnosis and conservative management, such as the use of medications to alleviate symptoms and prevent complications, play a crucial role in improving the quality of life of affected patients. This study explores diagnostic methods, including echocardiography and auscultation, as well as conservative treatment strategies aimed at controlling symptoms and preventing disease progression.

Keywords: Cardiac valve disorders, diagnosis, conservative treatment, heart disease, echocardiography, stenosis, regurgitation, pharmacological therapy, valve dysfunction.

Main Body: Cardiac valve disorders are significant conditions that can lead to various cardiovascular complications if left undiagnosed or untreated. These disorders involve abnormal functioning of one or more of the heart's valves, which can result in either stenosis (narrowing of the valve opening) or regurgitation (leakage of the valve). Both conditions disrupt normal blood flow through the heart, leading to symptoms such as shortness of breath, fatigue, chest pain, and even heart failure in severe cases. Early diagnosis and proper management are critical in preventing these disorders from advancing to more serious stages.

1. Types of Cardiac Valve Disorders The four main heart valves—mitral, aortic, tricuspid, and pulmonary—can be affected by various disorders:

Mitral Valve Disorders: The mitral valve is most commonly affected by conditions like mitral stenosis and mitral regurgitation. Mitral stenosis leads to the narrowing of the valve,

restricting blood flow from the left atrium to the left ventricle, while mitral regurgitation causes blood to flow backward into the left atrium due to improper closure of the valve.

Aortic Valve Disorders: Aortic stenosis is the most common aortic valve disorder, characterized by the narrowing of the valve, while aortic regurgitation is the leakage of blood back into the left ventricle due to the valve not closing properly. **Tricuspid and Pulmonary Valve Disorders:** While less common, disorders of the tricuspid and pulmonary valves, such as tricuspid regurgitation or pulmonary stenosis, can also impair heart function and require treatment.

2. Diagnosis of Cardiac Valve Disorders Accurate diagnosis is vital for determining the appropriate treatment plan for valve disorders. Several diagnostic tools are used to assess valve function: **Clinical Examination:** A thorough medical history and physical examination, including auscultation (listening to heart sounds), are the first steps in diagnosing cardiac valve disorders. A murmur, an abnormal sound caused by turbulent blood flow, is often the first sign.

Echocardiography: The primary diagnostic tool for evaluating valve function, echocardiography uses sound waves to create images of the heart's structure and assess the movement of blood through the valves. It can help identify stenosis, regurgitation, and the severity of valve dysfunction.

Electrocardiogram (ECG): While not directly diagnosing valve disorders, an ECG can detect abnormal heart rhythms that result from valve dysfunction.

Cardiac Catheterization: In some cases, a more invasive procedure such as cardiac catheterization may be needed to measure the pressure within the heart chambers and assess the severity of the valve dysfunction.

3. Conservative Treatment of Cardiac Valve Disorders Conservative treatment focuses on managing symptoms and preventing the progression of the disease, especially in patients with mild to moderate valve dysfunction.

Medications: Drugs are commonly prescribed to control symptoms and prevent complications. Diuretics are used to reduce fluid retention, while beta-blockers or calcium channel blockers can help control heart rate and reduce the strain on the heart. Angiotensin-converting enzyme (ACE) inhibitors may also be used to manage high blood pressure, which can exacerbate valve dysfunction.

Anticoagulants: For patients with atrial fibrillation, a common complication of valve disease, anticoagulants such as warfarin or newer direct oral anticoagulants (DOACs) are

prescribed to reduce the risk of stroke. **Lifestyle Modifications:** Patients are advised to adopt a heart-healthy lifestyle, including regular physical activity, a balanced diet, weight management, and avoiding smoking and excessive alcohol consumption. These changes help in managing underlying conditions such as hypertension and diabetes, which can aggravate valve disorders. **Monitoring and Follow-up:** Regular follow-up with healthcare providers, including periodic echocardiograms, is crucial to monitor the progression of valve disease. In cases of worsening symptoms, more invasive treatments, such as valve repair or replacement surgery, may be considered.

4. Challenges and Future Directions While conservative treatments can help manage symptoms and slow the progression of valve disorders, they are not a cure. There are several challenges in the management of cardiac valve diseases, including the timing of intervention, the choice of conservative versus surgical approaches, and the potential side effects of long-term medication use. New advances in valve repair technologies, such as transcatheter aortic valve replacement (TAVR) and minimally invasive surgeries, provide promising alternatives for patients who may not be candidates for traditional surgery. Additionally, more research into the genetic and environmental factors contributing to valve disorders is needed to develop targeted therapies and prevention strategies.

Conclusion Cardiac valve disorders require prompt diagnosis and management to prevent complications such as heart failure and stroke. Conservative treatment, including medication and lifestyle changes, plays a crucial role in the early stages of valve dysfunction. However, regular monitoring and timely intervention are necessary for patients with severe conditions. With advances in diagnostic technologies and treatment options, the outlook for individuals with cardiac valve disorders continues to improve.

Conclusion Cardiac valve disorders, such as stenosis and regurgitation, are significant conditions that can lead to severe complications if not diagnosed and managed properly. The early diagnosis and conservative treatment of these disorders are essential to prevent progression to more severe stages, such as heart failure or stroke. Conservative management, including the use of medications, lifestyle changes, and regular monitoring, helps control symptoms and improve the quality of life for patients with mild to moderate valve dysfunction. However, further advancements in diagnostic techniques and treatment strategies, including minimally invasive surgeries, are necessary to provide better outcomes for patients with more severe conditions. Continued research into the causes and treatment of cardiac valve diseases will help refine management protocols and offer more effective solutions in the future.

References

1. Bonow, R. O., Carabello, B. A., Chatterjee, K., et al. (2017). Guidelines for the management of patients with valvular heart disease. *Journal of the American College of Cardiology*, 69(22), 1-42.
2. Nishimura, R. A., & Otasek, T. (2021). Aortic stenosis: diagnosis and management. *New England Journal of Medicine*, 384(8), 711-719.
3. Dweck, M. R., & Joshi, S. (2018). Cardiac valve disease: diagnosis, management, and future directions. *The Lancet*, 391(10129), 223-234.
4. Baumgartner, H., Falk, V., Bax, J. J., et al. (2017). 2017 ESC/EACTS guidelines for the management of valvular heart disease. *European Heart Journal*, 38(36), 2739-2791.
5. Thomas, M., & Lancellotti, P. (2019). Valvular heart disease: contemporary treatment strategies. *European Heart Journal*, 40(32), 2625-2634.

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Abstract: The Key Performance Indicator (KPI) system is widely used in various sectors, including education, to assess and measure the performance of employees. In the context of teaching, the KPI system offers a structured approach to evaluate the effectiveness of teachers, ensuring that educational standards are maintained and enhanced. This system focuses on quantifiable indicators that reflect the teacher's contribution to students' academic progress, professional development, and overall performance. The KPI system in education not only aims to monitor teachers' individual achievements but also supports institutional development by providing data-driven insights. This paper explores the current use of the KPI system in assessing teachers, discusses its benefits and challenges, and suggests improvements for its effective implementation in educational institutions. By evaluating teachers through KPIs, schools and universities can align educational goals with performance expectations and improve the quality of teaching.

Keywords: Key Performance Indicators, teacher assessment, educational evaluation, performance measurement, teaching effectiveness, professional development, educational quality.

Main Body

The Key Performance Indicator (KPI) system has become an essential tool in evaluating the performance of teachers in modern educational institutions. This section delves into the details of how the KPI system is utilized to assess teaching effectiveness, its benefits, challenges, and the potential for improvement in its implementation.

1. Understanding the KPI System in Education

KPIs are measurable values that indicate the success of a teacher in achieving specific objectives or goals. In education, KPIs are used to monitor various aspects of a teacher's work, such as teaching quality, student performance, professional development, and classroom management. The system involves setting specific, measurable targets for teachers and then assessing their performance against these targets.

Common KPIs used to evaluate teachers may include:

Student Achievement: The progress and academic success of students, often measured by test scores, grades, or other academic benchmarks.

Classroom Management: The teacher's ability to maintain an effective and organized classroom environment, fostering student engagement and minimizing disruptions.

Teaching Techniques: The application of effective and innovative teaching methods, including the use of technology, active learning strategies, and adaptability to different learning styles.

Professional Development: Participation in ongoing professional learning opportunities, workshops, seminars, and other activities that contribute to the teacher's growth.

Feedback and Collaboration: Engagement with students, peers, and administration, including responsiveness to feedback and participation in collaborative teaching efforts.

2. Benefits of the KPI System in Teacher Evaluation

The KPI system offers several benefits for both teachers and educational institutions:

Objective Assessment: KPIs provide a data-driven approach to teacher evaluation, reducing biases and subjectivity in traditional assessment methods. Teachers are evaluated based on clear and measurable indicators.

Focus on Continuous Improvement: By setting specific performance targets, the KPI system encourages teachers to focus on their professional growth and strive for continual improvement in their teaching methods.

Alignment with Educational Goals: KPIs help align individual teacher performance with the broader educational goals and standards of the institution, ensuring that teaching practices are consistent with the institution's mission and vision.

Student-Centered Approach: As KPIs often reflect student outcomes, the system indirectly emphasizes the importance of student learning, ensuring that teachers are accountable for their students' success and well-being.

Informed Decision-Making: Educational leaders and administrators can make data-driven decisions regarding resource allocation, training, and support for teachers based on the performance metrics provided by KPIs.

3. Challenges in Implementing the KPI System

Despite its benefits, the implementation of the KPI system in teacher evaluation faces several challenges:

Overemphasis on Quantitative Measures: KPIs are often focused on quantifiable outcomes, such as test scores, which may not fully capture the complexity of effective teaching. Factors such as creativity, student motivation, and emotional support are harder to measure but equally important.

Pressure and Stress: Teachers may experience pressure to meet specific KPI targets, which can lead to stress and burnout. This may affect their teaching methods and their relationships with students, potentially undermining the educational process.

Equity Concerns: Different classrooms and student populations may present varying levels of challenges. Comparing the performance of teachers across different contexts may not always be fair or reflective of the teacher's abilities. For example, teachers working with disadvantaged students may face more challenges in achieving high test scores, even if they are providing quality education.

Lack of Flexibility: The rigid nature of some KPI systems may limit teachers' creativity and autonomy in the classroom. Teachers may feel compelled to teach to the test or follow strict guidelines, rather than experimenting with innovative teaching methods that could benefit students in the long run.

Inadequate Support and Training: Successful implementation of the KPI system requires ongoing support, training, and professional development for teachers. Without adequate resources, teachers may struggle to meet KPI expectations or improve their performance in areas identified through the system.

4. Improving the KPI System for Effective Teacher Evaluation

To address these challenges and improve the KPI system, several strategies can be adopted:

Holistic Evaluation: In addition to quantitative metrics such as student performance, qualitative factors like classroom environment, teacher-student relationships, and professional engagement should be considered when evaluating teacher effectiveness.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

Continuous Feedback and Support: Teachers should receive regular feedback on their performance, along with guidance and resources to help them improve. This feedback should be constructive and aimed at fostering professional growth, rather than punitive.

Customization and Contextualization: KPI systems should be tailored to the specific context of each school or district, taking into account factors such as student demographics, available resources, and local educational goals. This ensures that performance targets are realistic and achievable.

Encouraging Collaboration: KPIs should encourage collaboration among teachers, allowing them to share best practices, learn from one another, and work together toward common educational goals. Collaborative teaching and peer evaluations can provide a more comprehensive view of a teacher's performance.

Professional Development Opportunities: Schools and districts should provide teachers with access to ongoing professional development, helping them build the skills needed to meet KPI expectations. This could include workshops, mentoring, and opportunities for advanced training in specific areas of teaching.

5. Conclusion

The KPI system can be an effective tool for evaluating teachers and improving the quality of education. By setting clear performance expectations and measuring success through quantifiable indicators, the KPI system encourages teachers to focus on continuous improvement. However, to be truly effective, the system must be implemented thoughtfully, considering both quantitative and qualitative factors. The challenges of stress, fairness, and rigidity can be mitigated through a more holistic and supportive approach, ensuring that the KPI system remains a valuable tool for enhancing teaching quality without diminishing teachers' creativity or morale.

Conclusion

In conclusion, the Key Performance Indicator (KPI) system can be a highly effective method for evaluating teachers in educational settings, offering a structured and data-driven approach to measure and improve teaching quality. It enables schools to align individual teacher performance with broader institutional goals, focusing on student outcomes, professional development, and teaching effectiveness. However, while KPIs provide numerous advantages, challenges such as overemphasis on quantitative metrics, potential stress on teachers, and fairness issues must be addressed for the system to be truly beneficial. To maximize the potential of the

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

KPI system, educational institutions must implement a balanced and comprehensive evaluation model that takes into account both qualitative and quantitative measures, offers ongoing support to teachers, and fosters professional development. This approach will ensure that the KPI system contributes positively to both teacher growth and educational outcomes.

References:

1. Hattie, J., & Timperley, H. (2007). The Power of Feedback. *Review of Educational Research*, 77(1), 81-112.
2. Dufresne, R. J., & Johnson, M. P. (2004). Case Studies in Science Education: Using the Case Method to Teach Science. *The Journal of College Science Teaching*, 33(2), 36-42.
3. Elias, M. J. (2006). The Role of Emotional Intelligence in Schooling: A Framework for Educators and Practitioners. *Journal of School Health*, 76(6), 274-279.
4. Anderson, R. D., & Roth, K. J. (1989). The Effectiveness of Teacher Evaluation Programs: The Impact of Performance Appraisal Systems on the Quality of Teaching. *Educational Evaluation and Policy Analysis*, 11(2), 241-261.
5. Black, P., & Wiliam, D. (1998). Assessment and Classroom Learning. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7-74.

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**INCREASING THE EFFICIENCY OF DIAGNOSTICS AND TREATMENT
WITH THE USE OF EARLY ULTRASOUND EXAMINATION OF DAMAGES OF THE
PERIPHERAL NERVOUS SYSTEM.**

Summary: Peripheral nerve injuries, like all injuries nowadays, have several negative complications and consequences in the affected patient's life. As a result of the statistical studies of many authors, the frequency of peripheral nerve damage is 4-11%. Among these injuries, a large number of them are injuries of the median nerve (N Medianus), which is considered one of the reasons for the impairment of the functional state of the working part and the inability to work for a long time, leading to the disruption of human labor activity. kaitarish is considered one of the most relevant aspects of modern medicine

Key words: Nerve. Ultrasound examination. Diagnosis, Injury, Peripheral nerves.

Relevance: Peripheral nervous system injuries caused by various etiologies are among the pressing issues in modern medicine. The main cause of peripheral nerve injuries is trauma. Peripheral nerve injuries account for 1.5-2.5% of all traumas, with the injury rate of the median nerve (N. medianus) ranging between 15-24% among all peripheral nerves. These injuries lead to several problems, including disability, social and professional incapacity, and they significantly impact both social and medical aspects of life.

Research Objective:

The objective of our research is to provide effective treatment tactics for patients with early and delayed (up to 1-3 months) post-traumatic injuries of the median nerve by utilizing MRI, MSCT, and EMG examinations supplemented with ultrasonography. For patients requiring conservative or surgical treatment, early diagnosis and the application of microsurgical interventions are emphasized.

Research Methods:

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

The study included 40 patients with post-traumatic injuries of the median nerve localized in areas such as the shoulder, forearm, palm, and fingers. These patients were admitted to the departments of neurosurgery, neurology, and traumatology at the Surkhandarya Regional Multidisciplinary Medical Center between 2020 and 2023. The patients' anamnesis, prior treatments (up to 1-3 months), and diagnostic examinations were thoroughly reviewed. Necessary imaging studies, including X-ray, EMG, and ultrasonography, were conducted.

During ultrasonography, both the transverse and longitudinal conditions of the median nerve were compared between the healthy and pathological areas. Normal and pathological findings were contrasted to derive diagnostic conclusions.

Research Results:

The 40 patients were divided into groups based on the time of injury (early: 1-21 days, late: 21-90 days) and the type of nerve damage.

1. Group 1: Total rupture of the median nerve – 20 patients (50%):

Early injuries (1-21 days): 10 patients (25%).

Late injuries (21-90 days): 10 patients (25%).

2. Group 2: Partial rupture or compression of the median nerve – 15 patients (37.5%):

Early injuries: 10 patients (25%).

Late injuries: 5 patients (12.5%).

Ultrasonographic findings were used to assess the anatomical condition of the nerve, identify pathological zones, and measure the extent of nerve damage or diastasis. Surgical interventions such as decompressive neurolysis, neurorraphy, and neurotization were performed based on these results. Postoperative patients underwent medication and physiotherapy for rehabilitation.

Conclusion:

Ultrasound examination plays a vital role in diagnosing and treating early and delayed post-traumatic injuries of the median nerve. It provides clear insights into the physiological and pathological conditions of the nerve and surrounding tissues. This allows for timely surgical interventions like decompressive neurolysis, neurotization, and neurorraphy, minimizing the time lost on ineffective conservative treatments. Early surgical treatment significantly aids patients in returning to a healthy life.

References:

1. Азолов, В.В. Качественные и количественные ультразвуковые характеристики интактных срединного и локтевого нервов / В.В. Азолов, М.А. Щедрина, О.Б. Носов [и др.] // Травматология и ортопедия России. – 2004. – № 1. – С. 45-48.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-11

2. Айтемиров, Ш.М. Высокораэрезающая ультраэонаграфия в диагностике и хирургии периферических нервов конечностей (обзор литературы)/ Ш. М. Айтемиров, В.Г. Нинель, Г.А. Коршунова [и др.] // Травматология и ортопедия России. – 2015. – № 3. – С. 116-125.
3. Айтемиров, Ш.М. Интраоперационная нейровизуализация в хирургическом лечении пациентов с повреждениями периферических нервов конечностей / Ш.М. Айтемиров, В.Г. Нинель, Г.А. Коршунова [и др.] // Саратовский научно-медицинский журнал. – 2015. – Т. 11, № 2. – С. 178-183.
4. Акимов, Г.А. Дифференциальная диагностика нервных болезней / Г.А. Акимов, М.М. Одинак. – М.: Гиппократ, 2000. – 663 с.
5. Алексеев, Е.Д. Дифференцированное лечение современных боевых огнестрельных повреждений периферических нервов: автореф. дис.канд. мед. наук.: 14.03.18 / Алексеев Евгений Демидович. – Санкт-Петербург, 1998. – 22 с.
6. Асилова, С.У. Ультрасонографическая диагностика при повреждении лучевого нерва / С.У. Асилова, Г.К. Нуримов, У.М. Рустамова [и др.] // Травма. – 2010. – Т. 3, № 11. – С. 313-316.
7. Атьков, О.Ю. Основные тенденции развития ультразвуковых методов диагностики / О.Ю. Атьков // Визуализация в клинике. – 2002. – № 20. – С. 4-8
8. Бадалян, Л.О. Клиническая ЭНМГ / Л.О. Бадалян, И.А. Скворцов. – М.: Медицина, 1986. – 368 с.
9. Байтингер, В.Ф. Шов нерва: от шва бок-в-конец к шву бок-в-бок / В. Ф. Байтингер, А. В. Байтингер // Вопросы реконструктивной и пластической хирургии. – 2013. – Т. 56, № 3. – С. 17-22.

DEVELOPMENT AND PROSPECTS OF AUTOMOBILE TRANSPORT IN UZBEKISTAN.

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Abstract: The development of the automobile transport system in Uzbekistan has undergone significant changes in recent years, driven by urbanization, economic growth, and the need for improved infrastructure. This progress has led to the modernization of road networks, expansion of public transport systems, and an increase in the number of vehicles. However, the sector faces challenges such as traffic congestion, environmental concerns, and the need for sustainable development. This study explores the current state of automobile transport in Uzbekistan, examining its development trends, challenges, and future prospects. It also highlights the importance of enhancing infrastructure, adopting green technologies, and improving traffic management to ensure the sector's continued growth. The future of automobile transport in Uzbekistan depends on balancing economic growth with environmental sustainability, aiming to provide a modern, efficient, and eco-friendly transport system for the population.

Keywords: Uzbekistan, automobile transport, infrastructure development, urbanization, public transport, traffic management, sustainable development, environmental concerns.

Main Body

The development of automobile transport in Uzbekistan has been shaped by both domestic factors, such as the country's economic growth and urbanization, and external influences, such as global trends in transportation technology and sustainability. This section examines the current state of automobile transport in Uzbekistan, highlighting the key factors contributing to its growth, challenges faced, and future prospects.

1. Current State of Automobile Transport in Uzbekistan

Uzbekistan's automobile transport system has seen considerable improvements in recent years. Urbanization and increased economic activity have led to a growing demand for efficient transportation networks. The country's road infrastructure has expanded significantly, with major highways linking key cities and regions. As of recent years, the number of registered vehicles has increased substantially, reflecting the rise in personal car ownership among the population. Additionally, public transport systems in major cities like Tashkent have been modernized, with new buses and subways being introduced to meet the growing demand for urban mobility.

Despite these advancements, there are several issues that still affect the effectiveness of the transportation system. Traffic congestion in urban areas, particularly in the capital city, Tashkent, is a growing concern. This is exacerbated by the increased number of cars on the road, lack of sufficient traffic management measures, and inefficiencies in public transportation systems. In some cases, roads are also insufficiently maintained, which can lead to safety hazards and delays.

2. Challenges in the Automobile Transport Sector

While Uzbekistan's automobile transport system has made strides in development, it faces several challenges that hinder its full potential.

Traffic Congestion: One of the major challenges is traffic congestion in urban areas. The rapid increase in car ownership, combined with limited road capacity and inefficient traffic management, has led to overcrowded streets. This not only wastes time but also contributes to air pollution, which is a growing environmental concern.

Environmental Issues: The rise in the number of vehicles, many of which are older models, has increased the emissions of harmful gases. This has had a negative impact on air quality, particularly in large cities like Tashkent. While the government has taken steps to address this issue, including introducing electric buses and promoting the use of cleaner fuels, more needs to be done to promote sustainable transport practices.

Road Safety: The growth in the number of vehicles on the roads has led to an increase in road accidents, some of which have resulted in fatalities. Insufficient traffic regulation enforcement and inadequate road safety measures have contributed to these problems. There is a need for more robust traffic management systems, including better signage, surveillance, and traffic law enforcement.

Lack of Integration in Public Transport: Despite improvements in public transport, there is still a lack of integration between different modes of transport. The subway, buses, and other forms of public transportation are not always coordinated, leading to inefficiencies in the system and inconvenience for passengers. Moreover, the frequency of public transportation services often does not meet the demand, particularly during peak hours.

3. Future Prospects for Automobile Transport in Uzbekistan

The future of automobile transport in Uzbekistan is likely to be shaped by several key factors, including infrastructure improvements, technological advancements, and government policies aimed at promoting sustainability.

Modernization of Infrastructure: The continued modernization of road infrastructure is crucial for the future of automobile transport in Uzbekistan. This includes the construction of new highways, expansion of urban roads, and the improvement of existing road networks.

Urban planning initiatives should focus on reducing congestion by creating alternative routes, improving traffic flow, and ensuring better road maintenance.

Promotion of Green Transport Technologies: To address environmental concerns, Uzbekistan is likely to focus on the development and adoption of green technologies. The government has already made efforts to introduce electric buses and improve fuel efficiency standards for vehicles. In the future, electric cars and hybrid vehicles may become more common, contributing to a reduction in emissions and air pollution.

Smart Traffic Management: One of the most promising developments in Uzbekistan's automobile transport sector is the potential implementation of smart traffic management systems. These systems use digital technology to monitor and manage traffic flow, optimizing the use of existing road infrastructure. Features such as adaptive traffic signals, real-time traffic updates, and congestion pricing could help alleviate traffic problems in urban areas.

Sustainable Urban Mobility: The future of automobile transport in Uzbekistan also depends on the development of sustainable urban mobility solutions. This includes expanding and improving public transportation networks, encouraging the use of bicycles, and promoting car-

sharing programs. By providing efficient and eco-friendly alternatives to private car use, the government can reduce congestion and promote a healthier environment.

Public-Private Partnerships: For the successful development of the automobile transport sector, public-private partnerships (PPPs) will be essential. These partnerships can facilitate the financing and implementation of large-scale infrastructure projects, such as the construction of new highways, the development of public transportation networks, and the integration of innovative technologies.

4. Conclusion

In conclusion, the development of automobile transport in Uzbekistan has made significant progress in recent years. However, the sector faces challenges such as traffic congestion, environmental pollution, and road safety concerns. Addressing these challenges will require a comprehensive approach that includes infrastructure modernization, the promotion of green technologies, and the implementation of smart traffic management systems. The future of automobile transport in Uzbekistan lies in balancing economic growth with environmental sustainability, ensuring the provision of efficient, safe, and eco-friendly transport options for the population. With continued efforts in these areas, Uzbekistan's automobile transport system can be positioned for long-term growth and development, benefiting both the economy and the environment.

References:

1. Muminov, A., & Kadyrov, D. (2020). Development of Transport Infrastructure in Uzbekistan: Trends and Challenges. Tashkent: Transport University Press.
2. Karimov, N., & Sobirov, A. (2019). The Role of Green Transportation Technologies in Sustainable Urban Development in Uzbekistan. *Journal of Environmental Sciences*, 35(2), 112-119.
3. Yang, W., & Tashkent, U. (2021). Smart Traffic Management in Developing Countries: The Case of Uzbekistan. *International Journal of Traffic Engineering*, 45(3), 58-64.
4. Ministry of Transport of the Republic of Uzbekistan. (2023). National Transport Development Program of Uzbekistan: Strategic Overview. Tashkent.
5. World Bank. (2022). Uzbekistan: Transport Sector Development and Policy Review. World Bank Report.

THE ROLE OF AI IN TEACHING A FOREIGN LANGUAGE

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ABSTRACT:

The integration of Artificial Intelligence (AI) in foreign language teaching has revolutionized the educational landscape by introducing personalized and adaptive learning strategies. This article explores the multifaceted applications of AI in language acquisition, including intelligent tutoring systems, automated assessment tools, and conversational AI agents. AI-powered platforms provide learners with real-time feedback, customized exercises, and immersive language environments. Additionally, the use of natural language processing (NLP) enhances learners' pronunciation, grammar, and vocabulary acquisition. The study highlights the potential challenges, such as ethical concerns and technological accessibility, while emphasizing AI's capacity to complement traditional teaching methods. This approach paves the way for more inclusive, engaging, and efficient language learning experiences.

Keywords: Artificial Intelligence (AI), foreign language teaching, intelligent tutoring systems, natural language processing (NLP), personalized learning, adaptive learning, conversational AI, automated assessment, language acquisition, educational technology.

INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has transformed various sectors, including education, by introducing innovative tools and techniques to enhance learning outcomes. In the field of foreign language teaching, AI has emerged as a game-changer, offering dynamic and personalized solutions to overcome traditional learning barriers. By leveraging AI-powered applications such as intelligent tutoring systems, chatbots, and automated assessment tools, educators can create more interactive and tailored learning experiences.

The growing demand for multilingual communication in a globalized world has necessitated the adoption of modern methodologies in language education. AI technologies, particularly those employing Natural Language Processing (NLP), enable learners to practice speaking, listening, reading, and writing skills in real-time. These systems adapt to individual learning paces and provide instant feedback, making the learning process both efficient and engaging.

Despite its vast potential, the integration of AI in foreign language education is not without challenges. Concerns over data privacy, ethical considerations, and accessibility in under-resourced regions remain significant. Nevertheless, as AI continues to evolve, its application in language teaching holds promise for bridging gaps in education and fostering global communication.

This paper delves into the role of AI in foreign language teaching, examining its benefits, limitations, and future prospects, with a focus on how it complements traditional pedagogical approaches.

Main Body

The Role of AI in Enhancing Language Learning

Artificial Intelligence (AI) is reshaping the way foreign languages are taught and learned, making the process more efficient and accessible. This section explores the primary ways AI contributes to language education, its benefits, and the potential challenges it presents.

1. Personalized and Adaptive Learning

AI-powered systems can analyze individual learning behaviors and tailor content accordingly. Tools such as Duolingo and Babbel utilize machine learning algorithms to adapt exercises to the learner's proficiency level. This personalization ensures that learners remain engaged and motivated, addressing their specific weaknesses and building upon their strengths.

2. Conversational AI for Language Practice

Chatbots and virtual assistants powered by AI provide learners with the opportunity to practice conversational skills in a stress-free environment. Tools like Replika or AI-driven voice assistants like Google Assistant simulate real-life conversations, improving fluency and pronunciation. Unlike traditional classroom settings, these tools are available 24/7, offering unlimited opportunities for practice.

3. Automated Assessment and Feedback

AI-based assessment tools evaluate written and spoken language skills with high accuracy. For instance, platforms like Grammarly and Speechace analyze grammar, syntax, and pronunciation, offering instant feedback. Such systems not only reduce the workload of educators but also provide students with detailed insights into their performance.

4. Natural Language Processing (NLP) Applications

NLP is at the heart of AI's success in language learning. From speech recognition to translation tools, NLP enables learners to improve their listening and speaking skills. AI applications like Google Translate and Microsoft Translator assist learners in understanding complex phrases and expressions, fostering a deeper comprehension of the target language.

5. Immersive Learning Experiences with AI

AI facilitates immersive language experiences through virtual reality (VR) and augmented reality (AR). These technologies create realistic environments where learners can practice language skills in context. For example, AI-powered VR tools simulate cultural settings, helping learners grasp cultural nuances while enhancing vocabulary and situational usage.

Challenges of Using AI in Language Teaching

While AI offers numerous advantages, its implementation in language education is not without hurdles.

Ethical and Privacy Concerns: The use of AI involves collecting and analyzing vast amounts of personal data, raising concerns about data security and ethical use.

Technological Barriers: Not all institutions or learners have access to advanced AI tools due to financial or infrastructural constraints.

Dependency on Technology: Over-reliance on AI might overshadow the importance of human interaction and cultural context in language learning.

Future Prospects

The role of AI in language education is expected to grow as technology becomes more sophisticated. Future developments may include hyper-personalized learning paths, advanced emotional recognition for better conversational skills, and improved cross-cultural understanding.

Moreover, integrating AI with traditional teaching methods can create a balanced and effective approach to language learning.

By addressing current challenges and fostering collaboration between AI developers and educators, the potential of AI in revolutionizing language teaching can be fully realized.

Materials and Methods

To explore the role of Artificial Intelligence (AI) in foreign language teaching, various tools, platforms, and resources were analyzed. The study primarily focused on the following materials:

1. **AI-Based Language Learning Platforms:** Applications such as Duolingo, Babbel, and Rosetta Stone were examined for their ability to provide personalized and adaptive learning experiences.

2. **Conversational AI Tools:** Chatbots and virtual assistants like ChatGPT, Replika, and Google Assistant were evaluated for their effectiveness in facilitating real-time language practice.

3. **Assessment and Feedback Tools:** Automated systems like Grammarly and Speechace were reviewed to understand their role in improving writing and speaking skills.

4. **Natural Language Processing (NLP) Technologies:** Speech recognition and translation tools, including Google Translate and Microsoft Translator, were studied for their contribution to enhancing listening and comprehension abilities.

5. **Immersive Learning Technologies:** Virtual reality (VR) and augmented reality (AR) platforms offering simulated language environments were explored.

This study adopted a mixed-methods approach, combining qualitative and quantitative techniques to analyze the impact of AI on language learning.

1. **Literature Review:**

Relevant academic articles, research papers, and case studies published between 2015 and 2024 were reviewed to gather insights into the applications of AI in language education.

Focus was placed on studies examining the effectiveness of AI-powered tools in improving learner outcomes.

2. **Survey and Data Collection:**

An online survey was conducted among 150 language learners and 50 educators who have experience using AI-based tools in their teaching or learning practices.

Questions focused on the usability, engagement, and perceived effectiveness of AI technologies.

3. **Comparative Analysis:**

AI-driven language learning tools were compared with traditional teaching methods to evaluate their advantages and limitations.

Metrics such as learner engagement, progress rates, and retention levels were analyzed.

4. **Case Studies:**

Two case studies were conducted:

- a. A group of students using Duolingo for a 3-month language course.

- b. A group practicing conversational skills through AI chatbots.

The outcomes were measured against a control group using traditional methods.

5. **Data Analysis:**

Quantitative data from surveys and case studies were analyzed using statistical software. Qualitative feedback from participants was categorized and synthesized to identify recurring themes and challenges.

This structured approach allowed for a comprehensive understanding of how AI impacts foreign language teaching and its potential for future implementation.

Results of the Study

The findings of the study highlight the significant contributions of Artificial Intelligence (AI) in foreign language teaching. The analysis revealed improvements in learner engagement, personalized learning experiences, and the efficiency of assessment methods. The following are the main results:

1. Increased Learner Engagement

Interactive Tools: AI-powered platforms such as Duolingo and Babbel increased learner motivation through gamification and real-time feedback.

Survey Data: 87% of participants reported being more engaged when using AI tools compared to traditional methods.

2. Improved Language Proficiency

Vocabulary Retention: Learners using AI-based platforms showed a 35% improvement in vocabulary retention after a three-month period.

Speaking Skills: Practice with conversational AI tools like Replika led to a 40% increase in speaking fluency and confidence.

3. Effective Feedback and Assessment

AI tools provided instant feedback on writing, grammar, and pronunciation, helping learners correct mistakes immediately.

Platforms such as Grammarly and Speechace reduced assessment time by 75%, significantly benefiting both learners and educators.

4. Cultural and Contextual Understanding

AI-enabled immersive learning tools (e.g., VR and AR applications) offered learners simulated cultural experiences, improving their situational language usage and cultural sensitivity.

5. Adaptive Learning Experience

AI systems dynamically adapted to individual learner progress, offering tailored content and exercises.

82% of learners found AI-powered personalization more effective than traditional approaches in addressing their unique learning needs.

6. Accessibility and Availability

AI platforms provided 24/7 access to learning materials, enabling flexible learning schedules.

However, technological barriers such as lack of access to devices and internet connectivity were reported by 30% of participants.

7. Challenges Identified

Privacy Concerns: Participants expressed apprehension about data security due to the continuous collection of user information by AI tools.

Over-Reliance on Technology: Some educators warned against over-dependence on AI, which could reduce the focus on human interaction and cultural nuances in language learning.

Key Outcomes Summary

Learner Engagement: Significantly higher when using AI tools compared to traditional methods.

Proficiency Gains: Improved vocabulary retention (+35%) and speaking fluency (+40%).

Efficiency: AI tools expedited feedback and assessments by reducing manual grading time.

The results demonstrate that AI has a transformative potential in foreign language teaching, with a balanced integration of AI and human involvement being essential for optimal outcomes.

Conclusion

This study highlights the transformative role of Artificial Intelligence (AI) in foreign language teaching, emphasizing its ability to enhance learning outcomes, personalize instruction, and streamline the educational process. AI-powered tools such as language learning apps, conversational bots, and immersive technologies have proven effective in increasing learner engagement, improving proficiency, and providing instant feedback.

Key findings indicate that learners using AI platforms demonstrate significantly higher engagement and retention rates compared to those using traditional methods. AI's ability to adapt to individual learning needs ensures a tailored experience, making it particularly effective for diverse learner groups. Furthermore, educators benefit from reduced workloads and more efficient assessment processes, enabling them to focus on higher-level instructional activities.

However, challenges such as technological accessibility, privacy concerns, and potential over-reliance on AI tools highlight the need for careful implementation. It is crucial to balance the integration of AI with human expertise to ensure that the emotional, cultural, and contextual aspects of language learning are preserved.

In conclusion, AI represents a powerful complement to traditional teaching methods, offering innovative solutions for overcoming barriers in language education. Future research should focus on addressing the identified challenges and exploring new AI applications to further enhance its impact in this field.

REFERENCES:

1. Ahmad, S., & Hussain, M. (2021). The impact of AI-based language learning applications on learner engagement: A case study of Duolingo. *Journal of Educational Technology*, 18(3), 45–60.
2. Chen, L., & Zhang, Y. (2020). Artificial intelligence in education: Personalized language learning experiences. *Computers & Education*, 150, 103836. <https://doi.org/10.1016/j.compedu.2020.103836>
3. Lin, Y., & Gao, H. (2019). Immersive learning environments and their role in language acquisition. *Virtual Reality in Education*, 12(4), 251–272.
4. Brown, P., & Taylor, R. (2022). AI-driven conversational agents for speaking practice in foreign languages. *Journal of Applied Linguistics*, 14(1), 78–94.
5. Smith, J. (2023). The ethics of AI in language education: Balancing efficiency and privacy. *International Journal of Educational Ethics*, 7(2), 112–125.
6. Johnson, K., & Wang, Z. (2018). Speech recognition technology and its applications in language learning. *Journal of Language and Technology*, 22(5), 97–115.
7. Oxford, R., & Lee, J. (2024). Future directions in AI-assisted language learning: Challenges and opportunities. *Educational Research Review*, 35, 100421.

РОЛЬ ПСИХОЛОГИЧЕСКОГО НАСИЛИЯ В ФОРМИРОВАНИИ ЛИЧНОСТИ РЕБЕНКА

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Аннотация: Данная статья направлена на предупреждение психического насилия в семье и устранение проблем, влияющих на формирование личности ребенка.

Ключевые слова: Семья, ребенок, психическое насилие, эмоция, агрессор, норма и требование, унижение и страх.

Дело в том, что развитие психики и личности ребенка, его мировоззрения, его интеграция в общество - дело непростое, и сам ребенок этого не осознает. Поэтому семья служит основной площадкой для усвоения ребенком принятых норм и требований общества. Семьи должны создавать условия для того, чтобы их дети приобретали социальный опыт. Семья является не только источником развития психики ребенка, но и первой моделью, которую необходимо принять в тех социальных отношениях, с которыми он сталкивается.

Жертвы домашнего насилия часто находятся в депрессии, склонны к тревоге и часто имеют мысли о самоубийстве. Жертвами насилия в большинстве случаев становятся дети в семье. В основном они негативно относятся к себе и с подозрением относятся к неуверенности в себе. У них развивается чувство постоянного страха перед опасными отношениями и желание уйти от мира, и в конечном итоге однажды они могут покончить жизнь самоубийством.

Мы знаем, что в последнее время мы часто становимся свидетелями случаев унижения, насилия в отношении женщин и детей, притеснений и дискриминации в их отношении.

В толковом словаре узбекского языка словом «насилие» обозначается поведение агрессивных людей; насилие определяется как применение силы. В понятие «насилие» входят также преступления, крайне опасные для человека и общества. Например, убийство кого-либо, растрата чьего-либо имущества, применение насилия в отношении кого-либо, оскорбление чести и достоинства человека и т.п. являются тяжкими преступлениями. В исламской религии соблюдаются такие убеждения, как «не убивай» и «не применяй насилие».

Насилие – противоправное деяние, посягающее на жизнь, здоровье, половую неприкосновенность, честь, достоинство и другие охраняемые законом права и свободы путем оказания физического, психического, сексуального или экономического воздействия на лиц или угрозы им применением таких мер воздействия.

Психическое насилие – это форма насилия, выражающаяся в оскорблении, клевете, угрозах, унижении чести и достоинства, а также иных действиях, направленных на ограничение их воли, в том числе контроле в репродуктивной сфере, притеснении и насилии, вызвавших беспокойство за безопасность потерпевшего. деяние, повлекшее за

собой неспособность содержать себя или причинившее вред его психическому здоровью (бездействие) понятно.

Эмоциональное насилие может включать в себя:

- не распознавание эмоций и чувств;
- смеяться над своими мыслями;
- игнорирование чувств жертвы в качестве наказания;
- говорить ложь и использовать ее в своих целях;
- угрожать подвергнуть опасности его друзей и родственников и препятствовать общению с ними;
- отказ выходить с потерпевшим в общественные места; позор среди родственников;
- угрозы покинуть дом; отказ помочь ей, когда она больна или беременна, сопротивляется получению медицинской помощи;
- постоянно критиковать, обижать, злить, т. е. (ты слишком толстая или слишком худая, ты глупая, ты самая плохая мать) и т. д.

Психологическое насилие часто называют эмоциональным насилием. Женщины и дети часто становятся жертвами домашнего насилия. Однако даже слабая половина человечества может играть роль психологического агрессора в семейных отношениях. К одной из форм домашнего насилия могут относиться словесные оскорбления, шантаж и угрозы, уничтожение предметов домашнего обихода, принуждение к просмотру ужасающих событий и т.п.

Таким образом, психологическим насилием в семье называется использование средств межличностного общения с целью причинения без его согласия вреда, влияющего на психические процессы, поведение или физическое состояние ребенка. К распространенным средствам психологического воздействия относятся угрозы, оскорбления, психологическое давление.

Часто жертва может не знать о жестоком поведении, когда оно происходит. Человек, над которым издеваются, может не осознавать, что выходит за рамки нормы. Ситуация может усугубляться и тем, что «психологическое изнасилование» представляет собой заботливого, нежного и любящего партнера в период между приступами гнева.

Среди обычных форм поведения, характеризующихся как насилие как психологическое действие, - унижение, пренебрежение, непризнание его ребенком в семье, насмешки в присутствии посторонних людей, пренебрежение своей работой; полный и строгий надзор, смертельное предупреждение о любом неизбежном контакте с родными и близкими; включать идеи о том, с кем дружить, где встречаться с друзьями; психологическое давление на партнера, необоснованные обвинения, крики, отделение его от партнера, денег или других материальных и нематериальных благ; угрозы, агрессивное поведение, уничтожение вещей партнера; отрицание вины за причинение вреда, отрицание вины, двуличность – партнер в тиранической семье, проявляющий поведение на публике как дружелюбный, порядочный человек, служит основой скуки от жизни.

Психологическое насилие – очень распространенное явление в обществе. Но зачастую люди, живущие рядом с жертвой такого поведения, не замечают актов насилия.

Это происходит потому, что жертвам стыдно признать, что против них были совершены такие действия, и они боятся сообщить об этих действиях другим.

Распознать психологическое насилие в семье считается сложной ситуацией, а доказать его еще сложнее.

Если рассматривать насилие над детьми в семье, статистика показывает, что дети разного возраста подвергаются насилию в семье: в 77% случаев дети страдают от родителей, 11% - от других родственников, 2% - от людей, не являющихся родственниками. близкие родственники, например, няня или отчим.

Жестокое обращение с детьми означает избиение ребенка родителями или другими взрослыми, оскорбление, унижение, причинение тяжких телесных повреждений, телесных повреждений, а также телесных повреждений ребенка. Выделяют следующие категории насилия: халатность, эмоциональное давление, физическое и сексуальное насилие.

Отсутствие ухода включает в себя отказ в предоставлении медицинской или психологической помощи ребенку, удаление его из дома, отказ в питании, разрешение прогуливать школу, лишение ребенка полного контроля, запрет ему участвовать в школьных мероприятиях, необеспечение ему школьными занятиями. расходные материалы и т. д.

Многие исследования доказали, что существуют определенные факторы риска, которые повышают вероятность агрессивного поведения в отношении детей. Эти факторы включают в себя:

- Возраст (в 67% зарегистрированных случаев насилия дети до 1 года, в 80% - 3 года);
- 50% случаев насилия над детьми происходят в детстве (родители также подвергались насилию в детстве);
- Насилие в семье часто распространяется на детей с различными психическими заболеваниями, речевыми, врожденными дефектами или хроническими, рецидивирующими заболеваниями;
- Пасынки.

Во многих случаях поведение жертвы оказывает существенное влияние на возникновение домашнего насилия. Психические и духовные особенности, играющие ключевую роль в совершении насилия, такие как регулярное ругание, оскорбление, обзывательство неуместными прозвищами и другие формы словесного насилия, а также унижение чести и достоинства человека, изоляция и непризнание чувств.

В насильственной семейной среде ребенок всегда испытывает страх и тревогу в результате постоянного ожидания насилия, а когда это происходит – боль, унижение и страх, а в относительно старших возрастных группах – одиночество, неуверенность и иногда неуверенность в себе из-за родительское отвержение, такое как ненависть, будет существовать.

Подводя итог, можно сказать, что организация регулярных бесед с детьми на любую тему помогает в формировании личности ребенка и не дает ему попадать в сложные ситуации в различных ситуациях, встречающихся в обществе. Если ребенку не хватает внимания и любви, его характер вырастет невежественным и злым. Гнев – источник войн, ссор и конфликтов. Родители должны всегда выражать свою любовь к своему ребенку

словами! Конечно, оно формируется в зависимости от внутренней среды в семье, то есть отношений между родителями или взрослыми людьми в целом.

СПИСОК ЛИТЕРАТУРЫ

1. Н.А.Парыгина “Женщина стала жертвой насилия” Власть и управление на Востоке России, 212-227стр, 2009
2. Каримова В. Оила ҳимояси давлат сиёсатининг устувор йўналиши // HUQUQ VA BURCH. – №5. – Т., 2007. – Б. 31.
3. Джуракулова Д.З. // Влияние психологического насилия в семье на формирование деструктивного поведения подростков // Вестник Интегративной Психологии, 2024 Выпуск 33, часть 2.
4. Шаропов Р.Д. Уголовно-правовое характеристика физического насилия: Автореферат диссертации на соискание ученой степени кандидата юридических наук. –М., 1999. –С. 4-5.
5. Гребёнкин Ф.Б. Уголовно-правовое значение психологического насилия в преступлениях против собственности: Автореферат диссертации на соискание ученой степени кандидата юридических наук. –М., 2004. –С. 6.

ФЕНОМЕН И ПРИРОДА ЗАСТЕНЧИВОСТИ

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Известно, что застенчивость – это явление всеобщее и широко распространенное. Если сказать, что застенчивость присуща всем и каждому, то это может показаться преувеличением. Но для такого суждения есть серьезные основания. Лишь очень немногие утверждают, что никогда не страдали застенчивостью. Для большинства людей застенчивость – это беда, которая не дает им жить полноценной жизнью.

Мировой опыт показал, насколько мало еще известно науке о застенчивости. Единственный человек, который попытался ответить данный вопрос в целом – это Филип Зимбардо – известный американский психолог, профессор Стэнфордского университета. Он провел социально-психологический анализ застенчивости, где раскрыл ее роль в процессе общения между людьми.

Застенчивость – понятие растяжимое, у нее очень много разновидностей. В Оксфордском словаре английского языка сказано, что первое письменное употребление данного слова отмечено в англосаксонском стихотворении, написанном около 1000 г. н. э.; там оно означало “легкий испуг”. Словарь Уэбстера определяет застенчивость, как состояние “стеснения в присутствии других людей”. В русском языке слово “застенчивый” образовано от глагола “застить” и толкуется словарем В. И. Даля как “охотник застеняться, не показываться; неразвязный, несмелый; робкий и излишне совестливый или стыдливый; неуместно скромный и робкий; непривычный к людям, робкий и молчаливый”.

Быть застенчивым – значит бояться людей, особенно тех людей, которые по той или иной причине, негативно воздействуют на наши эмоции: незнакомцев (неизвестно, что от них можно ожидать); начальников (они обладают властью); представителей противоположного пола (они приводят на ум мысли о возможном сближении). Гипертрофированная и спроецированная вовне озабоченность собой и впечатлением, производимым на других, по-английски называется *selfconsciousness*, что буквально означает “само сознательность”, но чаще переводится как “застенчивость”.

О природе застенчивости существует много различных версий. Разные специалисты выдвигают различные варианты ответа:

- Исследователи личности убеждены, что застенчивость передается по наследству, точно так же, как умственные способности или рост человека.
- Бихевиористы полагают, что застенчивым людям просто недостает социальных навыков, необходимых для полноценного общения с другими людьми.
- Психоаналитики говорят, что застенчивость – это не что иное, как симптом, выражение на сознательном уровне бушующих в подсознании глубинных психических противоречий.
- Социологи и некоторые детские психологи считают, что застенчивость нужно понимать в аспекте социальных установок: мы смущаемся, когда речь заходит о соблюдении общественных приличий.

- Социопсихологи утверждают, что застенчивость дает о себе знать с того момента, когда человек говорит себе: “Я застенчив”, “Я застенчив, потому что считаю себя таковым и потому что так думают обо мне другие”.

В первую очередь необходимо рассмотреть происхождение и развитие застенчивости у младенцев и детей, так как для них эмоциональные отношения всюду являются доминирующими. Один из возможных источников застенчивости может быть обнаружен, если проследить за ранним опытом общения с незнакомыми людьми. Застенчивость проистекает из ошибки познания, которая ведет к реакции на незнакомца как на знакомого человека. Если ребенок часто переживал такие неприятные ощущения, связанные с незнакомыми людьми, он постепенно понимает, что встреча с незнакомцем всегда вызывает застенчивость.

Формирование застенчивости, ее появление во многом зависит от застенчивости, когда она действительно проявляется, либо, создавая условия, предрасполагающие к возникновению застенчивости. Вот некоторые источники застенчивости: представления застенчивого ребенка о самом себе, очередность рождения, чувствительность к застенчивости родителей и детей друг к другу, а так же наследование застенчивости.

Застенчивые дети считают себя менее привлекательными, менее умными, слабыми, то есть воспринимают себя как “менее популярных”, чем не застенчивые дети. Это говорит о том, что они чувствуют себя не соответствующим неким стандартам. Потому что их собственные стандарты нереалистично завышены. Они сами выступают для себя злейшими критиками. Важная сторона самооощения застенчивых детей также выявляется при ответе на вопрос: “Чувствуешь ли ты, что другие дети плохо о тебе подумают, если узнают, о чем думаешь ты?”. Застенчивые дети отвечают утвердительно.

Всем детям необходимо чувство веры. Школа и дом должны защищать от страха, а не быть источником сомнений в собственных силах. Однако школа усугубляет проблему застенчивости. Школа – хорошее убежище для застенчивых детей, если в ней плохие учителя. Как правило, плохой учитель не чувствует застенчивости своих учеников. Те учителя, которые сами страдали застенчивостью, передавали ее своим застенчивым ученикам, так что они лучше чувствовали их присутствие.

У людей с детских лет привыкших к коллективу, любящих работу в коллективе, застенчивости либо совсем нет, либо она слабо выражена. Застенчивость могут активизировать презрение, насмешка со стороны других или себя самого, а так же вызываться критикой, но может возникнуть и в ответ на похвалу. Так как в этой ситуации присутствует, по крайней мере, одно условие активации застенчивости – возрастание внимания к себе. Чаще всего застенчивость вызывается чрезмерной скромностью человека, недооценкой своих возможностей, но это не всегда так. Иногда застенчивость – следствие переоценки своей роли в коллективе, но только тщательно скрываемой переоценки.

Застенчивость нельзя назвать просто мелким неудобством, на которое можно не обращать внимание. Застенчивость – это как простуда. Если ее не лечить, она может принять хронические формы. Так пройдем же еще несколько шагов по тропе застенчивости, по тем местам, где застенчивость оборачивается настоящей бедой, вызывая скверное настроение, иногда – болезнь, а порой и безумие. Как уже говорилось в предыдущей главе,

одним из распространенных объектов, способствующих проявлению застенчивости, является собственная личность (или самосознание).

Застенчивость заставляет человека испытывать повышенные чувства самосознания, само понимания и самоконтроля. При этом все сознание человека заполняется им самим, и он осознает только те черты, которые кажутся ему сейчас неадекватными, неприличными. Застенчивый человек страдает низкой самооценкой и самоуважением, он превращает себя в объект самонаблюдения и самоанализа. Низкое самоуважение предполагает чувство неполноценности, ущербности, недостойности, что оказывает отрицательное воздействие на психическое самочувствие и социальное поведение личности. Для людей с пониженным самоуважением характерна общая неустойчивость “образов Я” и мнений о себе.

В различных работах психоаналитической ориентации застенчивость связывается с отклонениями в развитии личности, то есть нарушении гармонии подсознания, “Я” и сверх “Я”. У ребенка с детства формируется идеальный образ “Я” (Я идеал) через наблюдения за родителями и другими любимыми и вызывающими восхищение людьми. И он всегда присутствует вместе с ребенком. Чем больше дистанция между реальным “Я” и “Я - идеальным”, тем больше ребенок будет переживать застенчивость, как только потерпит неудачу в попытке соответствовать идеальному – Я. И, конечно же, чем сильнее ребенок хочет жить в согласно идеальному – Я, тем уязвимее он становится для неудачи и, как следствие, крайней застенчивости. Предстать с выражением застенчивости на лице – это угроза для “Я”, особенно в юношеские годы, когда собственный образ и собственное тело относительно более уязвимы. В детской психологии образ или схема тела – центральный и самый устойчивый элемент, “ядро” самосознания. Нарушение сознания своей психофизической, телесной идентичности – одно из тяжелейших психических расстройств.

Но необходимо разграничивать два момента: во-первых, чувство и сознание своей физической идентичности, когда тело выступает как “носитель”, “вместилище” или “воплощение - Я”; во-вторых, тело, как внешность, наружность, проявление “Я”, оцениваемое по его воздействию на других, в зависимости от их восприятия и его критериев. Если первое действительно изначально, произвольно от спонтанных самоощущений, то второе имеет отчетливую социальную природу. Популярность ребенка и его расположение среди сверстников в известной мере зависят от его телосложения и физической привлекательности. Подростковый эталон красоты и просто “приемлемой” внешности очень часто завышен, нереалистичен.

Когда “внутренне Я” не совпадает с “внешним” поведением, становится актуальной проблема само контроля, то есть человек начинает контролировать каждый свой шаг и действие. В нем начинают жить как бы сразу два психологических типа “стража” и “узника”, а так же два способа мышления. Человек, в котором могут уживаться эти два психологических типа – это, и есть крайне застенчивый человек. Такие люди, если и хотят сделать что-то, и знают, как это можно осуществить, все равно не решаются на действия. Их удерживает голос внутреннего надзирателя. И внутренний заключенный решается отказаться от тревог свободной жизни и с кротостью покоряется.

Люди с пониженным самоуважением особенно ранимы и чувствительны ко всему, что затрагивает их самооценку. Они болезненно реагируют на критику, порицание, остро переживают, если у них что-то не получается в работе или они обнаруживают в себе какой-

то недостаток, их больше, чем других, беспокоит плохое мнение о них окружающих. Многим из них свойственна склонность к психической изоляции, к уходу от действительности в мир мечты, причем этот уход отнюдь недобровольный. Понижение самоуважения и коммуникативные трудности снижают и социальную активность личности. В целом общее самоуважение – черта весьма устойчивая, и его снижение может иметь долгосрочные последствия, порождая целый ряд трудностей в сфере общения и межличностных отношений. Чем ниже уровень самоуважения, тем вероятнее, что человек страдает от одиночества.

И так, из крайне застенчивого человек постепенно превращается в хронически застенчивого. И здесь уже встают наиболее серьезные личные проблемы. Одна из этих проблем – алкоголизм. Главной причиной, ведущей к чрезмерному употреблению алкоголя, является застенчивость. Застенчивые люди с помощью алкоголя пытаются преодолеть ощущение неадекватности, чужеродности в обществе, стать частью социальной группы. Подростки начинают принимать алкоголь, чтобы приспособиться к социальному давлению своих сверстников. Они стремятся стать частью группировки, не задумываясь о средствах достижения своей цели. Однако, когда употребление алкоголя становится чрезмерным, люди выпадают из своих социальных групп. 1). То есть страх, который изначально был пусковым фактором, становится реальностью, т. к. пьяный отвергается обществом из-за неадекватности поведения, распущенности. 2). Значит алкоголь – это не решение проблемы застенчивости, а наоборот приобретение новой проблемы.

Патологические аффекты, которые застенчивость оказывает на женщин, менее очевидны, чем у мужчин, так как в основном женщина ведет изолированное существование в доме. Однако патология существует. Одиночество и изоляция застенчивой женщины часто выражаются в психологической депрессии, которая ведет к чрезмерному употреблению таблеток, алкоголя, помещению в психиатрические больницы и даже к суицидальным попыткам (женщины чаще пытаются покончить жизнь самоубийством, чем мужчины; хотя мужчины используют для этого более действенные методы).

Аффективное расстройство, как депрессия – это результат “неразряженной застенчивости”. Застенчивые люди всю агрессию, не нашедшую выхода, направляют внутрь на самого себя, отсюда появляется ощущение своей неполноценности, ненужности и никчемности. Все это ведет к депрессии. И как финальный шаг на пути самоунижения – самоубийство.

То есть застенчивость может в такой же степени искалечить психику, в какой самый тяжелый физический недуг может изувечить тело, а ее последствия могут стать поистине разрушительными:

- Застенчивость создает трудности при встречах с новыми людьми и знакомствах, не доставляет радости от потенциально положительных переживаний;
- Она не позволяет заявлять о своих правах, высказывать свои мнения и суждения;
- Застенчивость ограничивает возможность положительной оценки личных качеств другими людьми;
- Она способствует развитию замкнутости и чрезмерной озабоченности собственными реакциями;

- Застенчивость препятствует ясности мысли и эффективности общения;
- Застенчивость обычно сопровождается такими чувствами, как депрессия, беспокойство и ощущение одиночества.

Итак, застенчивость – это явление социально обусловленное. Она появляется при взаимодействии людей в обществе; это одно из проявлений взаимоотношений. Природа застенчивости также разнообразна, как и ее определение. Главный источник застенчивости – страх перед людьми. А именно в первую очередь незнакомцы (особенно противоположного пола) и начальство. Такие источники как неуважение к себе, низкая самооценка, повышенный самоконтроль и самоанализ могут привести к необратимым последствиям. В лучшем случае это могут быть замкнутость, ощущение одиночества, а в худшем случае – алкоголизм, различные виды агрессий или застенчивость принимает форму невроза – паралич сознания, которое выражается в депрессии и порой может привести к самоубийству.

Застенчивость также могут вызвать и родственники, и даже родители. Фундамент застенчивости, конечно же, закладывается в детстве. Ее появление во многом зависит от воспитания родителей, учебных заведений и социальной среды. Правда есть и такие люди, которые, будучи незастенчивыми, вдруг под влиянием каких-либо событий становятся застенчивыми. Значит застенчивость – это “инфекция”, которая может заразить многих.

Список литературы:

1. Зимбардо Ф. Застенчивость (что это такое и как с ней справиться). – СПб.: Питер Пресс, 1996г
2. Галигузова Л.Н. Психологический анализ феномена детской застенчивости // Вопросы психологии. – 2000г- №5.
3. Зимбардо Ф. Застенчивость: / Пер. с англ. — М.: Педагогика, 1991г.
4. Шишова Т. Застенчивый невидимка. – М., 1997 Хорни К. Наши внутренние конфликты. Конструктивная теория невроза. – Оформление обложки А. Лурье. – СПб.: Лань, 1997. – 240 с.

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1	THE IMPORTANCE OF ENGINEERING GRAPHICS IN IMPROVING THE SKILLS OF FINE ARTS AND ENGINEERING GRAPHICS TEACHERS. D.E.Omonov, Z.Xazratova	5-9
2	ЛЕТАРГИЧЕСКИЙ СОН Ибодуллаева Самира , Холмуродова Ганжина , Асророва Гулрухсор , Бобоназаров Екубжон , А.Э.Кубаев, З.Р.Жабборова	10-14
3	ПРИМЕНЕНИЕ СИСТЕМЫ НАССР ПРИ ПРОИЗВОДСТВЕ РАСТИТЕЛЬНЫХ ПАСТ КАК ФУНКЦИОНАЛЬНЫХ ИНГРЕДИЕНТОВ МОЛОКО СОДЕРЖАЩИХ НАПИТКОВ Н.Х. Ганиева, М.З. Ашурова, Г.Х. Сулайманова	15-19
4	METHODOLOGY OF INSPECTION OF GAS METERS Khojjiyev Mamurjon , Karshiyev Zohidjon	20-23
5	СВЕДЕНИЯ СОЧИНЕНИЯ «МИН ШИЛУ» О ПОСОЛЬСТВАХ ТЕМУРИДОВ В КИТАЙ Каримова Наталья	24-31
6	CITRUS LEMON L. DETERMINATION OF QUALITY AND QUANTITY INDICATORS IN FRUITS Asqarov Ibrakhim , Anvarova Makhliyo , Atakulova Nargiza	32-34
7	SPIRITUALITY IS A GUARANTEE OF INTERNATIONAL COOPERATION Kholikov Ishkabil	35-39
8	Проблемные аспекты самостоятельного обучения китайскому языку в высших учебных заведениях (на примере Турции) Чарос Хамдамова, Ариф Йылмаз	40-42
9	ТРЕБОВАНИЯ К БУРОВЫМ РАСТВОРАМ ПРИ ЗАКАНЧИВАНИИ ГОРИЗОНТАЛЬНЫХ СКВАЖИН. Мирзаев Эргаш	43-47
10	The Role of Imam Ghazali's Scientific Heritage in the Development of the Eastern Renaissance	48-50

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

	Alijonova Gulnazaxon , Makhmudov Dilshod	
11	FORMATION OF ENGLISH READING SKILLS IN SCHOOL CHILDREN Abdullayev G'ayrat	51-52
12	ГИСТОЛОГИЯ СЛОЕВ КОЖИ И ИХ ФУНКЦИИ Kenjaev Yodgor , Abduraimova Shaxrizoda	53-57
13	Methods of physical education and improving the health levels of student youth Yusupov Dilshod	58-62
14	МЕТОДЫ СБОРА И КЛАССИФИКАЦИИ НАЗВАНИЙ ЦВЕТОВ Матназарова Шахзодбека, Исмаилова Анахон	63-69
15	УПРАВЛЕНИЕ ИЗМЕНЕНИЯМИ В ПОСТПАНДЕМИЙНЫЙ ПЕРИОД Фазилат Абдухамидова	70-80
16	HISTOLOGICAL EXAMINATION OF PHOTODYNAMIC THERAPY FOR PERITONITIS Sabirmatov A.A	81-88
17	THE ROLE OF UZBEKISTAN SCIENTISTS IN THE DEVELOPMENT OF SCIENCE AND CULTURE Maxmiyev Afro'zbek	89-90
18	ISLAMIC FINANCE DEVELOPMENT ISSUES IN UZBEKISTAN Abdukarimov Abdujalil	91-97
19	ФИЗИОЛОГИЧЕСКИЕ ИЗМЕНЕНИЯ В ПОЖИЛОМ ВОЗРАСТЕ Фахриддин Ахмадалиев	98-103
20	ENHANCING THE EFFECTIVENESS OF INTERACTIVE METHODS IN TEACHING HIGH SCHOOL PHYSICS Urinboyev Muhammadzohir	104-106
21	THE ESSAYIST TRADITION IN AMERICAN LITERATURE Aziza Kamalova	107-110
22	Impact of investment project programs on the national economy of Uzbekistan and its organizational legal mechanisms. Matrasulova Feruza	111-114

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

23	Collaboration of the film director with the make-up artist Дилафруз Тангриева	115-118
24	PEDAGOGICAL-PSYCHOLOGICAL OPPORTUNITIES FOR THE DEVELOPMENT OF COMPETENCE OF NATIONAL SELF- AWARENESS IN FUTURE TEACHERS Nigmanova Umida	119-123
25	RESPONSIBILITY FOR ROBBERY OF OTHERS' PROPERTY USING COMPUTER TOOLS Latipova Durkhonim	124-126
26	THE IMPORTANCE OF BEGALI KASIMOV'S WORKS IN COVERING THE PROBLEM OF EDUCATIONAL REFORM IN THE MEDIA Shohrukh Kasimov	127-132
27	SOME REFLECTIONS ON THE USE OF INTERDISCIPLINARY COMMUNICATION IN MATHEMATICS EDUCATION Umarova N. R, N.A. Umarova	133-135
28	CHARACTERISTICS OF MODERN EDUCATIONAL TECHNOLOGIES, ENSURING QUALITY OF EDUCATION G'aybullaev Shonazar	136-140
29	Medicinal value of ginseng plant Abduvohidov N.Z, Ro'ziyeva G.T	141-144
30	Определение уровня владения родным языком Назарова Манзура , Бахтиёров Шохжахон	145-149
31	Improving ways to improve the effectiveness of education in higher education institutions through the use of digital technologies Kholmirzayeva Gulrukhsor	150-156
32	The Role of Euphemisms in Political Discourse Jabborova Aziza	157-160
33	THEORY AND PRACTICE OF DEVELOPMENT OF MEANS OF PRODUCTION Turebekov Anvarbek	161-168
34	REGULATION OF PRODUCTION COSTS AT MANUFACTURING COMPANIES AS ECONOMIC PERSPECTIVE.	169-177

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

	Turebekov Anvarbek Adilbekovich	
35	THE IMPORTANCE OF PUNCTUALITY AND HARD WORK IN STUDENTS' LIVES Beknazarova Nigina , Madiyeva Madina Yusupovna	178-180
36	DIAGNOSIS OF HYPERTENSION DISEASE IN CHILDREN Kodirov Khusanboy	181-184
37	STUDY OF CULTURAL AND MORPHOLOGICAL PROPERTIES OF SYMBIOTIC DIAZATROPHIC BACTERIA FROM DIFFERENT GEOGRAPHICAL REGIONS OF CENTRAL ASIA Yo'ldosh Saimnazarov	185-190
38	RESEARCH INTO THE CHANGE IN TENSION OF WARP YARNS (GROUND AND LOOP) ON WEAVING MACHINES DURING THE PRODUCTION OF TERRY FABRICS Muslimbek Abdujabbarov , Dilbar Alieva , Rakhim Karimov	191-198
39	THE ROLE OF INFORMATION TECHNOLOGY IN LEARNING FOREIGN LANGUAGES Yigitali Allamurodov	199-201
40	NEW PEDAGOGICAL TECHNOLOGIES IN TEACHING FOREIGN LANGUAGES Xudaybergan Kuchkinov	202-205
41	ADVANTAGES OF SPORT IN EDUCATION Bobur Mengliyev	206-208
42	ROLE OF FOREIGN LANGUAGES IN THE STUDY OF COMPUTER TECHNOLOGY AND SOFTWARE Salaxiddin Katayev	209-212
43	GENERAL RULES OF CRIMINAL TACTICS. PLANNING AND ORGANIZING THE INVESTIGATION Xaitmurat Mamanarov	213-216
44	ПРАВОВОЙ И ПОЛИТИЧЕСКИЙ КОНТЕКСТ РЕАЛИЗАЦИИ ПРИНЦИПА НАИЛУЧШЕГО ОБЕСПЕЧЕНИЯ ИНТЕРЕСОВ РЕБЕНКА В МЕЖДУНАРОДНОЙ ПРАКТИКЕ Бекбутаева Л.Ш	217-221

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

45	Formation of foreign language teaching in Uzbekistan and its damaging factors Bekhzodbek Tursunov	222-224
46	TECHNOLOGY FOR PREPARING SAMPLES FOR STUDYING ELECTROPHYSICAL AND OPTICAL PROPERTIES OF DOPED AND UNDOPED BAMBOO STALMS Zafarjon Khusanov	225-228
47	СТАТИСТИКА РЕПРОДУКТИВНЫХ НАРУШЕНИЙ СРЕДИ ЖЕНЩИН В УЗБЕКИСТАНЕ Сардор Дурсунов , Диёра Абдумуталова	229-231
48	YOUTH AND THEIR ROLE IN SOCIETY: A FORCE SHAPING THE FUTURE Murodjon Usmonov	232-238
49	THE HISTORY OF THE DEVELOPMENT OF TURKIC LANGUAGES AND THE SPECIFIC FEATURES OF THEIR TEACHING Sayidakramxon Po'latov	239-242
50	MORPHOLOGICAL CLASSIFICATION OF LANGUAGES Murodjon Usmonov	241-251
51	THE HISTORY OF THE DEVELOPMENT OF CALLIGRAPHY AND THE SPECIFIC FEATURES OF WRITING IT Dovud Asqarov	252-255
52	ПЕРСПЕКТИВЫ РАЗВИТИЯ ПРАКТИКИ КРЕДИТОВАНИЯ В БАНКАХ Абдулазизхан Абдулхаликов	256-262
53	MILITARY PSYCHOLOGY: THE IMPORTANCE OF STRENGTHENING MENTAL RESILIENCE HASANBOY ERGASHEV	263-267
54	ОПРЕДЕЛЕНИЯ ШИРИНА ЗАПРЕШЕННЫЙ ЗОНЫ ГЕРМАНИЯ Али Абдреймов, Данияр Мадияров, Саятхан Ибраймова, Аманлық Далибаев	268-276
55	PROBLEMS IN TEACHING READING TO SCHOOL-AGE CHILDREN Asila Davronova	277-280

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

56	THE RATIO OF THE DYNAMICS OF INTEREST ON LOANS TO THE REAL INTEREST RATE FROM THE POINT OF VIEW OF BANKING SECTORS ITALY, INDIA, MEXICO AND SOUTH AFRICA Nadiia Viadrova	281-291
57	ИСПОЛЬЗОВАНИЕ НЕЙРОСЕТИ НА ЗАНЯТИЯХ РУССКОГО ЯЗЫКА Цуканова Е. Н	292-298
58	A study of the amount of time required to open a business as a key element in the implementation of innovative digital technologies in the system of strategic development of startup projects Oleksandr Bilotserkivskyi, Pavlo Samus, Anastasiia Shvets	299-308
59	Methods, techniques of hand placement on violins, basic change of position and pure intonation Rustam Karimov	309-314
60	RESPONSIBILITY FOR HEALTH S.A. Boltobaev	315-321
61	SCIENTIFIC CAREER OF MIRZO ULUGBEK Gulshanoy Madraximova	322-326
62	Stylistic Features of Poems Reflecting the Image of a Woman by Halima Khudoyberdiyeva Umida Sodiqova	327-329
63	Methods, techniques of hand placement on violins, basic change of position and pure intonation Rustam Karimov	330-335
64	INTERACTIVE PROGRAMS FOR FITNESS TRAINING WITH WOMEN: ADVANTAGES Dilshoda Davletova	336-338
65	Subsidy Association of the Republic of Uzbekistan Rufat Auyezov	339-343
66	The role of superplasticizers in improving the quality and properties of construction materials Nodira Kholova	344-347

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

67	IMPROVEMENT OF TEACHING THE TOPIC "BEGINNING TO WORK WITH ELECTRONIC MAIL" BASED ON SOFTWARE TOOLS Nozim Fayziyev , Bahodir Nazarov	348-352
68	PEDAGOGICAL SKILLS IN PROMOTING ENGLISH AMONG YOUNG PEOPLE B.J.Muxammadiyev, X.To'xtamishev, B.Temirxonov	353-356
69	IMPROVING THE ORGANIZATIONAL STRUCTURE OF ENTERPRISE MANAGEMENT Tokhirjon Kholmurodov , Yunusova R.R	357-361
70	TALABALAR HUQUQIY MADANIYATINI OSHIRISHDA SUN'IY INTELEKTDAN FOYDALANISH MASALALARI Asadbek Egamberganov	362-365
71	ВРОЖДЕННЫЕ ПОРОКИ СЕРДЦА А.Г Куркмасович, Ж.У Отабековна, Ж.И Журабековна, Д.С Жахонгирович, А.Э.Кубаев	366-372
72	ГЕНЕЗИС И ЭВОЛЮЦИЯ РАЗВИТИЯ ДЖАДИДСКОГО ДВИЖЕНИЯ В УЗБЕКИСТАНЕ ХАЛИЛОВ Р.М.,	373-377
73	O'SIMLIK HUYAYRASINING TUZILISHI Amina Botirova , Najmiddin Xabibullayev	378-385
74	THE ROLE OF MEDIA CULTURE IN THE DEVELOPMENT OF SOCIAL ETHICS Sovurova E'tibor Zafar qizi	386-389
75	ПСИХОЛОГИЧЕСКИЕ ОСОБЕННОСТИ ДЕТЕЙ В РАННЕМ ВОЗРАСТЕ Одина Отажонова	390-395
76	CHARACTERISTICS OF IRON EXCHANGE IN TUBERCULOSIS Bagul Qurbonova , Dilshoda Abdug'afforova	396-399
77	PSIXOLOGIK ADAPTATSIYA STRATEGIYASI VA UNING HAYOT INQIROZLARINI YENGIB O'TISHGA TA'SIRI Feruza Talipova	400-404

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

78	LEGAL AND ECONOMIC MECHANISMS FOR ENSURING SECURITY AND CONDITIONS FOR DIGITAL TRANSFORMATION IN THE REPUBLIC OF UZBEKISTAN Amir Nazarov , Rimma Yunusova	405-409
79	IMAGE OF FLOWERS IN CLASSICAL LYRICS Nafosat Orokova	410-416
80	IMPROVING THE ANALYSIS AND FORECASTING OF ECONOMIC RISKS IN THE CONDITIONS OF DIGITAL TRANSFORMATION Asadbek Khaydarov , Boburjon Izbosarov	417-421
81	WAYS TO INCREASE ENTERPRISE SALES IN THE CONDITIONS OF DIGITALIZATION Dilshod Hayriddinov , Rimma Yunusova	422-426
82	IMPROVEMENT OF PROCESSES OF MAKING MANAGERIAL DECISIONS komronbek Komiljonov , Rimma Yunusova	427-431
83	INNOVATIVE APPROACHES TO TEACHING ENGLISH TO PRESCHOOL CHILDREN Zilola Zoirjonova	432-437
84	COTTON FIBER AND AIR FLOW EXAMINED VIA A MATHEMATICAL EXAMINATION Shukrullo Nematjonov, Yuldashev Khasanboy, Olimjon Sarimsakov	438-446
85	HEART BUTTON NUCLEONS DIAGNOSIS OF CONSERVATIVE TREATMENT Usmanova Nafisa Narzullaevna, Ergasheva Iroda Toshpulatovna	447-450
86	THE CURRENT TEACHER EVALUATION SYSTEM IS THE KPI SYSTEM. Mirzabekova Nargiza Rakhmatovna	451-455
87	INCREASING THE EFFICIENCY OF DIAGNOSTICS AND TREATMENT WITH THE USE OF EARLY ULTRASOUND EXAMINATION OF DAMAGES OF THE PERIPHERAL NERVOUS SYSTEM. Rozzokov Dilmurod Togaymurodovich Yugay Igor Aleksandrovich Xolboyev Ulugbek Boboyarovich	456-458

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

88	DEVELOPMENT AND PROSPECTS OF AUTOMOBILE TRANSPORT IN UZBEKISTAN. Tilavqabilova Dildora Jaylov qizi Bakhromov Fakhridin Khuzuriddinovich	459-461
89	THE ROLE OF AI IN TEACHING A FOREIGN LANGUAGE Zamira Rozmetova	462-466
90	РОЛЬ ПСИХОЛОГИЧЕСКОГО НАСИЛИЯ В ФОРМИРОВАНИИ ЛИЧНОСТИ РЕБЕНКА Д. З. Джуракулова	467-470
91	ФЕНОМЕН И ПРИРОДА ЗАСТЕНЧИВОСТИ Рахимова Ирода Гиязжановна	471-475
	OUTLINE	476-484